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				2-aminoethanol (CAS: 141-43-5)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Z-ammoettiano (CAS. 141-45-5) Comments
Is substance persistent, bioaccumulative and toxic?				
Passes ready biodegradation test	Yes	90% degradation over 21 days	SIDS, ECHA-CHEM	An OECD 301 study reported 90% degradation over 21 days. A number of other studies were also reported which indicated ready biodegradability including a study which reported >70% degradation over 28 days
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days Half life marine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days Half life in 501 = 120 days	See comment			No specific degradation half life data was located however as noted above a number of studies were reported which indicated ready biodegradability
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes No			The data available indicates that this substance is readily biodegradable and therefore does not meet the criteria for persistence.
Bioaccumulation				, , , ,
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?  # answer to either question is YES, substance is bioaccumulative	No No data	3.16	SIDS (2013)	A BCF of 3.16 was estimated from the log Kow (noted below). An estimated BCF of 2.3 was reported in ECHA-CHEM. The available data therefore does not indicate it meets the orderia for bioaccumulation
If no BCF data. is loo Kow ≥ 4.5?	No	-2.3	SIDS (2013)	A measured loa Kow of -2.3 was reported which indicates that it does not meet the criteria
If answer is YES. substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not considered due to			
unilaely? Substance is chronically non-toxic in mammals Molecular size 2 4.3mm Molecular size 3 4.3mm Octano solubility 5.0002mmol/I Rwight of evidence indicates bioaccumulation unilkely (i.e. YES answers)	the above data			
If weight of evidence induces bioaccumulation a makey (i.e. IC3 answers) substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes No			The available data indicates it does not meet the criteria for bioaccumulation
Toxicity				
ts the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	0.85mg/l	SIDS, ECHA-CHEM	A chronic 21d NOEC of 0.85mg/l was reported for the invertebrate Daphnia magna. This indicates that it does not meet the criteria for chronic tosicity. Chronic data was available for two fish species which reported chronic NOECs of 1.77mg/l and 1.24mg/l. A NOEC of 1mg/l was reported for the alga Pseudokirchneriella subcapitata. These data indicate it does not meet the criteria for chronic toxicity
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised classification is available for 2-aminoethanol. It indicates that it does not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised classification is available for 2-aminoethanol. It indicates that it does not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			The available data indicates it does not meet the criteria for toxicity
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?	<u> </u>			
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No (see comment)			No specific degradation half life data was located however as noted above a number of studies were reported which indicated ready biodegradability
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	3.16	SIDS (2013)	A BCF of 3.16 was estimated. A further BCF of 2.3 was reported in ECHA-CHEM. The available data does not indicate it meets the criteria for bloaccumulation
If answer is yes, substance is very bioaccumulative  Is substance yery persistent and yery bioaccumulative?	No			
Is substance very persistent and very bloaccumulative ?  Does substance pose a specific risk to groundwater?	NO			
Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
LOQ?  Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous				
Does substance pose a specific risk to groundwater?  Is substance very toxic?	Not assessed			
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous	No		ECHA C&L database	An EU harmonised classification is available for 2-aminoethanol which indicates that it does not meet these criteria
Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?  Is substance hazardous to groundwater?	No			
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T.R.23/24/25, T.+R.26/27/28 (does not include Xr: R2*  * equivalent risk phrases T.R.39/23/24/25, T.+R.26/27/28, T.R.48/23/24/25 (does  * equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T.R.45, T.R.49,  (does not include Carc. Cat. 3, XPR.46), XPR.64, XPR.64  * A.R.744, Repr. Cat. 3, XPR.62, XPR.64  * A.R.744, Rep. Cat. 3, X	not include R33, R67, Xi;	R37, Xn;R4820/21/2 rta. Cat. 2, Muta. Cat	2, Xn;R68/20/21/22) . 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database SIDS (2013) 2 -aminoethanol ECHA-CHEM	http://echa.europa.eu/info http://webnet.oecd.org/Hp http://echa.europa.eu/regi	v/Ul/handler.axd?id=	27d71248-4be0-45ad-8	
				<del></del>

			. bt	(C. 444.70.0)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value	P-butoxyethanol (CA	S: 111-76-2) (Ethylene glycol butyl ether)  Comments
Is substance persistent, bioaccumulative and toxic?	assume yes or no?			
Persistence				
Passes ready biodegradation test	Yes		SIDS (1997) / EU (2006)	Studies reported in the SIDS review indicate 77% degradation after 3 days and 100% after 7 days. The OECD 28d closed bottle test was noted to give 75% and 85% degradation. These indicate easy biodegradation. These links assessment (2006) noted a number of ready biodegradability studies reported degradation >60% which resulted in it being reported as readily biodegradable
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both auestions is NO. additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days	No	7 -28days	SIDS (1997)	Half lives in surface water noted as 7 days to 4 weeks
Half life in soil ≥ 120 davs If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent) Is substance persistent?	Yes No			
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?	No	2.51	SIDS (1997)	No measured BCF values were located however a value of 2.51 was reported based on an estimation from the Log Kow value. This low BCF is supported by an estimated BCF of 0.97 for fish reported in the EU risk assessment. This was estimated based on a log Kow of 0.8.
If answer to either question is YES, substance is bioaccumulative				The log Kow value does not indicate it meets the criteria for bioaccumulation. This is supported by data in the EU risk assessment (2006) which notes
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	No	0.81	SIDS (1997)	estimated log Kow values have been reported in the range of 0.57 - 0.8 and measured values in the range 0.74 - 0.83.
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?	Not assessed due to the above information			
Substance is chronically non-toxic in mammals Molecular size 2 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			
Toxicity	NO			
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	100mg/l	EU risk assessment (2006)	The lowest chronic NOEC was a 21d NOEC for the invertebrate Daphnia magna of 100mg/l. This was supported by a chronic study for the invertebrate Ceriodaphnia dubia which reported a 7d EC10 of 34.9mg/l. Chronic data for the zebra fish gave a 21d NOEC of >100mg/l and for the alga Pseudokirchneriella subcapitata a 3d NOEC of 286mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised C&L classification is available for 2-butonyethanol. The classification indicated it did not meet these criterion
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised C&L classification is available for 2-butoxyethanol. The classification indicated it did not meet these criterion
If answer to any question is YES, substance is toxic If answer to all questions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			Does not meet the criteria for persistence, bioaccumulation or toxicity
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No (see comment)			Half lives in surface water noted as 7 days to 4 weeks (SIDS). A number of studies were reported which indicated it met the criteria for ready biodegradability (EU 2006).
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	2.51	SIDS	No measured BCF values were located however a value of 2.51 was reported based on an estimation from the Log Kow value
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?	No			Does not meet the criteria for either vP or vB
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ?  Do 2 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed			
If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous				
Does substance pose a specific risk to groundwater?	Not assessed			
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for	No		ECHA C&L database	An EU harmonised C&L classification is available for 2-butoxyethanol. The classification indicated it did not meet these criterion
adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous			CO. II. Out Uniaudise	одинальной в минимого по в монкуропанно. То «Мазанивами надлежения имя пред втого мнегили
Is sufficient data available? (if not assume substance is very toxic)	Yes No			
Is substance very toxic?  Is substance hazardous to groundwater?	IVU			
Is substance hazardous, if so, state on what basis	No			
** equivalent risk phrases: T.R.23/24/25. T+R.26/27/28. (does not include Xr. R.2 ** equivalent risk phrases T.R.39/23/24/25, T+R.26/27/28. (T.R.48/23/24/25 (does ** equivalent risk phrases canningenic Carc. Cat. 1, Carc. Cat. 2, T.R.45, T.R.49, (does not include Carc. Cat. 3, MrA/R) Repr. Cat. 3, MrR.62, X.R.R83)	not include R33, R67, Xi; R3	7, Xn;R4820/21 i. Cat. 2, Muta. (	1/22, Xn;R68/20/21/22) Cat. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database ECHA C&L database	https://echa.europa.eu/inforr			/-/discli/details/129381
ECHA CHEM SIDS (1997) 2-butoxyethanol EU Risk Assessment report - 2-butoxyethanol (2006)	http://echa.europa.eu/regis http://webnet.oecd.org/Hpv/l https://echa.europa.eu/docu	JVhandler.axd?i	id=0fbae729-1207-4829-b0	De8-H11b1728d4 51504058192d

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent		2-methoxyme	thylethoxypropanol (CAS: 34590-94-8) (Dipropylene glycol methyl ether)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	Yes	93% after 13 days	SIDS (2001)	Ready biodegradation was noted to be observed based on 93% degradation after 13 days and 79% after 28 days. Both were in aerobic environments. It was noted that degradation may be slower in anaerobic environments
Passes inherent biodegradation test If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days	No data (see comment)			No degradation half life data were located, however as noted above data was available which indicated ready biodegradability
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days	NO data (see continent)			TVO DESTINUALITY IT THE USES WELL INCLUDED, HOWEVEL AS TIMES ADVICE USES WAS AVAILABLE WHICH HIGHEST LEGALY DISCUSSIONAL THE TRANSPORT OF THE PROPERTY OF THE
Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			The available data indicate it is readily biodegradable and does not meet the criteria for persistence
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	1	SIDS (2001)	It was reported in the SIDS document that based on the log Kow data an estimated BCF value would be 1 or less
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	No	0.0061	SIDS (2001)	This log Kow value reported in SIDS is supported by log Kow values noted in ECHA-CHEM which range from 0.004 - 0.35
If answer is YES. substance is bioaccumulative				
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals	Not assessed due to above data			
Substance is chronically non-toxic in mammals  Molecular size ≥ 4.3nm  Molecular weight ≥ 1100a/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),				
BCF data should be obtained  Is sufficient data available? (if not assume substance binaccumulates)	Yes			
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			
Toxicity				
				Limited chronic data was available. A chronic study for the invertebrate Daphnia magna noted a 22d NOEC (reproduction) of 0.5mg/l. This is supported
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	0.5mg/l	SIDS (2001)	by acute toxicity data for fish, invertebrates and algae which indicate low acute toxicity to the species studied. Acute data indicated low acute toxicity with a 4d LC50 of >10000mg/l reported for the fathead minnow, and a 2d LC50 of 1919mg/l reported for Daphnia magna. For algae a 3-4day EC10 of 133mg/l was reported for Selenastrum capricomutum. This data indicates it does not meet the criteria for aquatic toxicity.
				133 mg/r was reponded for Seleniasidum capricornulum. This data indicates it does not meet the criteria for aquatic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	EU harmonised C&L classification not available. Industry submissions on the C&L database indicate it does not meet these criteria. Data included in the SIDS (2001) review also indicate it does not meet these criteria as low repeat dose toxicity was noted
				SIDS (2001) review also indicate it does not rifeet ulesse criteria as low repeat does tokicily was hoted
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for				EU harmonised C&L classification not available. Industry submissions on the C&L database indicate it does not meet these criteria. SIDS(2001) noted
reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	that it was not considered to be carcinogenic, a reproductive toxicant or genotoxic based on the available data.
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No		SIDS (2001)	Studies have been reported which indicate ready biodegradability (see above)
Half life in marine, fresh or estuarine sediment ≥ 180 days				
Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000 If answer is yes, substance is very bioaccumulative	No	1	SIDS (2001)	Estimated BCF of 1 has been reported based on the log Kow values
If answer is yes, substance is very bloaccumulative  Is substance very persistent and very bloaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed  Not assessed			
above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic,	Not assessed			
in substance is persissent in groundwater, bloaccumulative AND loxic, substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for	No		ECHA C&L	EU harmonised C&L classification not available. Industry submissions on the C&L database indicate it does not meet these criteria. The SIDS report
adverse effects on human health  If answer to any question is YES, substance is very toxic and bazardous.			database/SIDS (2001)	note no genotoxicity data is available but that data for a similar substance indicates it would not be mutagenic.
If answer to any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is sufficient data available? (If not assume substance is very toxic)  Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T:R23/24/25, T+:R26/27/28 (does not include Xn; R/ * equivalent risk phrases T:R39/23/24/25, T+:R26/27/28, T:R48/23/24/25 (does * equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T:R45, T:R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33, R67, Xi;	R37, Xn;R4820/21/22 uta. Cat. 2, Muta. Cat.	2, Xn;R68/20/21/22) . 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2., R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES				
ECHA C&L database SIDS (2001) Dipropylene glycol methyl ether	http://echa.europa.eu/info http://webnet.oecd.org/Hp	mation-on-chemicals	/cl-inventory-database 82aa491f-c9e0-4h2f-81	cf-e7ca3bceea1c
ECHA-CHEM	http://apps.echa.europa.e	u/registered/data/dos:	siers/DISS-9ea9583b-e	d61-603b-e044-00144f67d031/DISS-9ea9583b-ed61-603b-e044-00144f67d031_DISS-9ea9583b-ed61-603b-e044-00144f67d031.html

				2-mathyl-2H-icothiazal-2-one (CAS- 2692-20-4)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value	Reference	2-methyl-2H-isothiazol-3-one (CAS: 2682-20-4)  Comments
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?  Persistence				
Passes ready biodegradation test	No		ECHA CLP RAC report/EU BPD	The available data indicates it is not readily biodegradable
			assessment	
Passes inherent biodegradation test  ### Answer to either question is YES, substance is not persistent				
If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days	No	29.7days	ECHA C&L RAC report EU BPD	A degradation half life of 29.7days was reported in seawater.
Half life fresh or estuarine water ≥ 40 days  Half life marine sediment ≥ 180 days	No	0.87 - 4.17days	assessment/ECHA CLP RAC report	Data indicates biodegradation is a key degradation route with half lives reported in the order of 0.87 to 4.17days
Half life fresh or estuarine sediment ≥ 120 days			EU BPD	
Half life in soil ≥ 120 days  If answer to any question is YES, substance is persistent	No	0.15 - 0.51days	assessment/ECHA CLP RAC report	Data indicates biodegradation is a key degradation route with half lives reported in the order of 0.15 - 0.51days in soil
If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes No			The avaiable degradation data indicates that this substance does not meet the criteria for Persistence
Bioaccumulation			F0.80-01-01	
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?	No	0.107l/kg	EU Biocide risk assessment	Estimated BCF value for fish.
If answer to either question is YES, substance is bioaccumulative			EU Biocide Risk	
If no BCF data, is log Kow ≥ 4.5?	No	-0.34		This experimental log Kow is -0.34 at pH 7 and 10oC.
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals	above information			
Molecular size ≥ 4.3nm Molecular weiaht ≥ 1100a/mol Octanol solubility s 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),				
BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes No			
Toxicity				
In the Impact should NOTE for freehouster as marine assessings < 0.04 mg/l	No	0.024mg/l	EU Biocide	The value of 0.024mg/l was the lowest chronic data point located from the available data sources. It is an EC10 value for a 24hr study on the alga
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	NO	0.024mg/i	assessment/ECHA CLP RAC report	Pseudokirchneriella subcapitata. This is supported by other data for algae as well as a chronic study on the invertebrate Daphnia magna which gave a 21d NOEC of 0.0442mg/l. Chronic data for fish was available but indicates lower chronic toxicity with NOECs reported in the range of 2.1 - 2.38mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database/ECHA C&L RAC report (2016)	The ECHA C&L database does not include a harmonised classification for this substance. The majority of the industry data submissions indicate it does not meet these criteria although some indicate STOT RE2. The RAC (Committee for Risk Assessment) document however notes that it does not meet the criteria for STOT RE1 or RE2.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database/ECHA C&L RAC report (2016)	The ECHA C&L database does not include a harmonised classification for this substance. The industry data submissions indicate it does not meet these criteria. The RAC (Committee for Risk Assessment) document however notes that it does not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic			To to Topoli (2010)	
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No	See data and comments above		
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days		comments above		
If answer to any question is YES, substance is very persistent		See data and		
ls bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative	No	comments above		
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Do $\geq$ 5% of groundwater samples show levels of the substance greater than the LOQ?	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database/ECHA C&L RAC report (2016)	The ECHA C&L database does not include a harmonised classification for this substance. The industry data submissions indicate it does not meet these criteria. The RAC (Committee for Risk Assessment) document however notes that it does not meet these criteria.
If answer to any question is YES, substance is very toxic and hazardous			(E010)	
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product!	No			
ever breakdown product!  # equivalent risk phrases: T.R23/24/25, T+.R26/27/28 (does not include Xn; R24  * equivalent risk phrases T.R39/23/24/25, T+.R26/27/28, T.R48/23/24/25 (does  * equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T.R45, T.R49, (does not include Carc. Cat. 3, XR762, XR764), S.R764  * (does not include Carc. Cat. 3, XR762, XR764), S.R764  * (AR764), S.R764  * (R764), S.R	not include R33, R67, Xi; F	R37, Xn;R4820/21/22 uta. Cat. 2, Muta. Cat.	, <i>Xn;R68/20/21/22)</i> 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
REFERENCES			77 1-700 4/00 - 117	
ECHA RAC report (2016) EU BPD assessment (2014) ECHA C&L database	https://echa.europa.eu/doc http://dissemination.echa.e https://echa.europa.eu/info	europa.eu/Biocides/Ar	ctiveSubstances/1229-	13/1229-13 Assessment Report.pdf

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			1,3,5-trimethylhexahydro-1,3,5-triazine (CAS: 108-74-7)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	Yes	64% at 28days	ECHA CHEM/GESAMP	Limited data is available for this substance. The results of an OECD 306 study were reported. This indicated 64% degradation at 28days which indicates ready biodegradability. GESAMP have classified this substance as readily biodegradable
			CHEW/GESAWIP	indicates ready biodegradability. GESAMIF have dassilied this substance as readily biodegradable
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days	No data (see comment)			No degradation half life data was located.
Half life marine sediment ≥ 180 davs Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days If answer to any question is YES, substance is persistent				
If answer to all questions is NO, substance is not persistent  Is sufficient data available? (if not assume substance is persistent)	Yes			
Is sufficient data available? In not assume substance is persistent.	No.			Limited data was available on the degradation of this substance. A study indicated it is readily biodegraded and in addition a GESAMP
Substance persistent.				assessment indicated ready biodegradability.
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data			No BCF data was located
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	No	0.76	ECHA-CHEM	An experimentally derive log Kow value of 0.76 was noted. This indicates it does not meet the criteria for bioaccumulation. This is supported by data in the GESAMP assessment which indicated that the log Kow was in the range of 2-3.
If answer is YES, substance is bioaccumulative				tile GESPrint assessinent willich munches und tile rog tow was in tile tange of 2-5.
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely?  Substance is chronically non-toxic in mammals	above data			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
substance is not bloaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			Limited data is available on the potential for bloaccumulation of this substance. No BCF data was located however the available data on log Kow indicates it does not meet the criteria for bloaccumulation
				TOTAL INCIDENCE IN COLUMN TO CONTROL TO CONT
Toxicity				
		0.0001	FOUR OUTS	The only chronic endpoint located was for the algal species Skeletonema costatum. The 3d NOEC was 0.933mg/l which indicates it does not meet the criteria for chronic aquatic toxicity. Acute toxicity data was available for fish, invertebrate and algae. Based on this data the algae appeared to be more
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	0.933mg/l	ECHA-CHEM	sensitive and this links in with the mode of action of this substance. Therefore although only one chronic study located with no data for invertebrates and fish it suggests algae are the most sensitive. The GESAMP assessment indicated no chronic data was available but that acute toxicity data was in the range of 1-10mg/l.
				range or 1- romgn.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	Yes		EU CLP database	A harmonised classification is not available for this substance however industry submissions indication that it meets the criteria for STOT RE2. This was not indicated in the GESAMP assessment however due to the limited data available have based the assessment on the worst case data.
				TIOU INDICATED IT USE OCCUPANT assessment flowerer due to the situated data available have based the assessment on the worst case data.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		EU CLP database	A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is supported by the GESAMP assessment which does not indicate it meets the criteria for C, M, R
If answer to any question is YES, substance is toxic If answer to all auestions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	Yes			Limited data is available for this substance. The data indicates there is the potential for it to be STOT RE2
is substance toxic:				
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			Although the available data indicates it meets the criteria for Toxic it does not meet the criteria for either B or P
				Although the available data indicates it meets the criteria for Toxic it does not meet the criteria for either B or P
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?				Although the available data indicates it meets the criteria for Toxic it does not meet the criteria for either B or P
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?			ECHA	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No		ECHA CHEM/GESAMP	
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Yery persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No			Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  if answer to any question is YES, substance is very persistent	No data (see comment)		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in sol ≥ 180 days  if answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000	No			Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative	No data (see comment)  No data (see comment)		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  ###################################	No data (see comment)		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 190 days  # answer to any question s YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?	No data (see comment)  No data (see comment)		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question or YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does or sundwater emolitoring data sub- half life in proundwater ≥ 1 year  Doe Stor Groundwater samples show levels of the substance greater than the LOG?	No data (see comment)  No data (see comment)  No  No data (see comment)		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 veer  Does groundwater monitoring data show half life in groundwater ≥ 1 veer  Does for the data of the data	No data (see comment)  No data (see comment)  No  No		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water > 60 days  Half life in marine, fresh or estuarine sediment > 180 days  Half life in soil > 180 days  Half life	No data (see comment)  No data (see comment)  No  No data (see comment)		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # amwer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance sope a specific risk to groundwater?  Does substance sope as appecific risk to groundwater?  Does for dischart monitoring data show half life in proundwater ≥ 1 year  Do ≥ 15% of sites have at least one sample where the substance greater than the LOQ?  ## answer to any question is YES, substance is persistent in groundwater  ## substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.	No data (see comment)  No data (see comment)  No  Not assessed  Not assessed  Not assessed		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question or YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does does does remolithric data show half life in proundwater ≥ 1 vear  Doe's 50 dig oundwater samples show levels of the substance greater than the LOQ?  # answer to any question is YES, substance is persistent in groundwater?  # substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?	No data (see comment)  No data (see comment)  No  No  Not assessed  Not assessed  Not assessed		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Harf swer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Does substance pose a specific risk to groundwater substance greater than the  Do ≥ 15% of groundwater samples show levels of the substance greater than the  Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  # answer to any question is YES, substance is persistent in groundwater?  # substance pose a specific risk to groundwater?  # substance is persistent in groundwater, bioaccumulative AND toxic, substance is para groundwater?  Is substance pose a specific risk to groundwater?	No data (see comment)  No data (see comment)  No  Not assessed  Not assessed  Not assessed  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment > 180 days  Half life in marine, fresh or estuarine sediment > 180 days  Half life in size > 180 days  Half life in size > 180 days  Half life in size > 180 days  # answer to any question of VES, substance is very persistent  Is bioconcentration factor > 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance search search search where the substance greater than the DO?  Do > 15% of sites have at least one sample where the substance is detected above the LOQ?  # answer to any question is VES, substance is persistent in groundwater is substance persistent in groundwater?  # substance persistent in groundwater?  # substance persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance with persistent in groundwater is substance is persistent in groundwater?  Is substance with persistent in groundwater is persistent in groundwater?  Is substance with persistent in groundwater is persistent in groundwater.	No data (see comment)  No data (see comment)  No  Not assessed  Not assessed  Not assessed		CHEM/GESAMP	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is VES, substance is very persistent  is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  is substance very persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Does substance pose a specific risk to groundwater.  Does St of groundwater samples show levels of the substance greater than the  Doe 15% of groundwater samples show levels of the substance greater than the  Doe 15% of sites have at least one sample where the substance is detected above the LOQ?  # answer to any question is YES, substance is persistent in groundwater?  # substance is paraitent in groundwater, bioaccumulative AND toxic, substance is paraitent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous	No data (see comment)  No data (see comment)  No  Not assessed  Not assessed  Not assessed  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment > 180 days  Half life in marine, fresh or estuarine sediment > 180 days  Half life in size > 180 days  Half life in size > 180 days  Half life in size > 180 days  # answer to any question of VES, substance is very persistent  Is bioconcentration factor > 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance search search search where the substance greater than the DO?  Do > 15% of sites have at least one sample where the substance is detected above the LOQ?  # answer to any question is VES, substance is persistent in groundwater is substance persistent in groundwater?  # substance persistent in groundwater?  # substance persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance with persistent in groundwater is substance is persistent in groundwater?  Is substance with persistent in groundwater is persistent in groundwater?  Is substance with persistent in groundwater is persistent in groundwater.	No data (see comment)  No data (see comment)  No  Not assessed  Not assessed  Not assessed  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water > 60 days  Half life in marine, fresh or estuarine sediment > 180 days  Half life in soil > 180 days  Half life	No data (see comment)  No data (see comment)  No  No assessed  Not assessed  Not assessed  Not assessed  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in size ≥ 80 days  Half life in size ≥ 80 days  If answer it any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does depundwater emotiving data show half life in groundwater ≥ 1 vear  DOS 5% of groundwater samples show levels of the substance greater than the LOG?  Do ≥ 15% of sites have at least one sample where the substance greater than the LOG?  If answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?  Is substance persistent in groundwater, bioaccumulative AND toxic, substance has provided to the persistent in groundwater?  Is substance very toxic?  Is substance was persistent in groundwater, is very toxic and hazardous  Does substance was the persistent in groundwater in the substance is persistent in groundwater?  Is substance very toxic?	No data (see comment)  No data (see comment)  No  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is supported by the GESAMP assessment which does not indicate it meets the criteria for mulagenicity.
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Doe 50 × 15% of groundwater samples show levels of the substance greater than the Do ≥ 15% of groundwater samples where the substance preater than the Do ≥ 15% of groundwater samples where the substance is detected above the LOQ?  # substance is persistent in groundwater?  Is substance is persistent in groundwater.  Is substance is persistent in groundwater, bioaccumulative AND toxic, substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance end specific risk to groundwater?  Is substance work specific risk to groundwater?  Is substance work specific risk to groundwater is very toxic of the substance work of the substance is very toxic?	No data (see comment)  No data (see comment)  No  No assessed  Not assessed  Not assessed  Not assessed  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soi ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does croundwater monitoring data show half life in groundwater ≥ 1 veer  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Is substance pose as pecific risk to groundwater is substance greater than the Dog 5 of groundwater ample show levels of the substance greater than the Dog 5 of groundwater samples where the substance is detected above the LOG?  If answer to any question is YES, substance is persistent in groundwater?  If substance is parasitent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health.  If answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (In ot assume substance is very toxic)  Is substance very toxic?  Is substance hazerdous, if so, state on what basis  Does substance hazerdous, if so, state on what basis	No data (see comment)  No data (see comment)  No  Not assessed		CHEM/GESAMP  ECHA-CHEM	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is supported by the GESAMP assessment which does not indicate it meets the criteria for mulagenicity.
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Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer fo any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves. substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does you water monitoring data show half life in groundwater ≥ 1 year  Doe 5 yib of groundwater samples show levels of the substance greater than the COO?  # substance have at least one sample where the substance is detected show the LOO?  # substance is persistent in groundwater?  # substance is persistent in groundwater?  Is substance is persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance protosic?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance have known breakdown products will be undertaken if known. # is suchwatered you water to product will be undertaken if known. # is acknowledged in the methodology that it is not possible to assess every breakdown product.  # soulvalent risk phrases: TR392425.5 1-R262728 (does not include Xxr. R4  Globes not include Carc. Cat. 3, Xr,R40, Repc. Cat. 3, Xr,R62, Xr,R63), (does not include Carc. Cat. 3, Xr,R40, Repc. Cat. 3, Xr,R62, Xr,R63), (does not include Carc. Cat. 3, Xr,R40, Repc. Cat. 3, Xr,R62, Xr,R63), (does not include Carc. Cat. 3, Xr,R40, Repc. Cat. 3, Xr,R62, Xr,R63), (does not include Carc. Cat. 3, Xr,R40, Repc. Cat. 3, Xr,R62, Xr,R63).	No data (see comment)  No data (see comment)  No  No assessed  Not assessed  Not assessed  Not assessed  Not assessed  No assessed  No assessed  No assessed  On assessed  No assessed  No assessed  No assessed	.37, Xn:R4820212. 231a. Cat. 2, Muta. Cat	EU CLP database	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is supported by the GESAMP assessment which does not indicate it meets the criteria for mutagenicity.  Limited data is available on this substance. Based on the information located it indicates that it does not meet the criteria for Hazardous.
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water > 60 days  Half life in marine, fresh or estuarine sediment > 180 days  Half life in soil > 180 days  Half life	No data (see comment)  No data (see comment)  No  No assessed  Not assessed  Not assessed  Not assessed  No assessed  No assessed  No assessed  No assessed  No ho  No  No  No  No  No  No  No  No  No	ta. Cat. 2, Muta. Cat	EU CLP database  EU CLP database  2. Xn.R68/2021/22) 3. T.R46, T.R65, toxic	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is supported by the GESAMP assessment which does not indicate it meets the criteria for mutagenicity.  Limited data is available on this substance. Based on the information located it indicates that it does not meet the criteria for Hazardous.
Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # amover to any question or YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance and a least one sample where the substance greater than the LOQ?  # answer to any question is YES, substance is persistent in groundwater as to be substance persistent in groundwater.  # substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  # substance is persistent in groundwater.  # substance is persistent in groundwater.  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance wery toxic?  Is substance have not usession is YES, substance is very toxic and hazardous  Does substance have not usession is YES, substance is very toxic and hazardous  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is substance have not usession is YES, substance is very toxic?  Is	No data (see comment)  No data (see comment)  No  No data (see comment)  No  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  No  No  No  No  No  No  No  No  No  N	ta. Cat. 2, Muta. Cat rmation-on-chemica stration-dossier/-/re Nork/Environment/F	EU CLP database  EU CLP database  EU CLP database  EU CLP database  A. Xn.R66/2021/22)  3. T.R46, T.R66, toxic	Although no half life data available the limited data located indicates it does not meet the criteria for P or vP as it is noted to be readily biodegradable (see above)  No BCF data was available however the log Kow of 0.76 indicates that it is not expected to meet the criteria for B or vB  Limited data was located on the persistence and bioaccumulation of this substance however the available data indicate it is not expected to meet the criteria of vP and vB  A harmonised classification is not available for this substance however industry submissions indicate that it does not meet these criteria. This is supported by the GESAMP assessment which does not indicate it meets the criteria for mutagenicity.  Limited data is available on this substance. Based on the information located it indicates that it does not meet the criteria for Hazardous.

			200	2./hovahudro 1.2 5-triazino 1.2 5-triul/triathanol (CAS: 4740.04.4)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	2,2,2 Reference	2-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (CAS: 4719-04-4)  Comments
Is substance persistent, bioaccumulative and toxic?  Persistence				
Passes ready biodegradation test	Yes	90-100%	ECHA-CHEM	Reported studies indicate ready biodegradation. 90-100% removal was reported after 8days in one study and another indicated 89-95% removal in 10days
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine valer 2 60 days Half life fresh or estuarine valer 2 40 days Half life marine sediment 1 80 days Half life marine sediment 1 80 days Half life lend or estuarine sediment 2 120 days  ### The property of the	No data (see comment)			No half life data located however due to the above information half life data was not considered essential
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?  Bioaccumulation	No			The available data indicates that it does not meet the criteria for persistence.
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	No data available			BCF values were not located for this substance. However the available loa Kow data (see below) indicated it did not meet these criteria
If no BCF data, is log Kow ≥ 4.5?  If answer is YES. substance is bioaccumulative	No	-2	ECHA-CHEM	A log Kow of -2 was reported and another log Kow was noted to be -1.21. The available data therefore indicate this substance does not meet these criteria
Does the weight of evidence from the following criteria indicate bicaccumulation unlikely?  Substance is chronically non-toxic in mammals  Molecular size 2 4.3mm  Molecular size 14.3mm  Molecular size 14.3mm  Molecular size 14.3mm  Molecular size 2 4.3mm  Molecular size 14.3mm  Molecular size 15.4mm  Molecular size 15.	Not assessed due to the above information			
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	1.56mg/l	ECHA-CHEM/ECHA C&L database	A 3d NOEC of 1.58mg/l was reported for the algal species Desmodesmus subspicatus. No other chronic data was located. A dute toxicity data for algae, invertebrates and fish indicated octate effects in the range of 6.6 = 60.7mg/l. This supports the chronic data in incidating it is not expected to meet the criteria for chronic toxicity. In addition the C&L harmonised classification does not indicate a classification for aquatic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised C&L classification is available which indicates it does not meet the criteria for long term toxicity
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic	No		ECHA C&L database	An EU harmonised C&L classification is available which indicates it does not meet these criteria
If answer to all questions is NO, substance is not toxic	Yes			
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	No No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			The available data do not indicate that this substance meets the criteria for PBT.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days	No (see comment)		ECHA-CHEM	No half life data located however the available data indicates ready biodegradability and therefore these criteria are unlikely to be met.
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000  If answer is ves, substance is very bioaccumulative	No (see comment)		ECHA-CHEM	BCF values were not located for this substance. However the available log Kow data (-2 and -1.2) indicates it is not likely to bioaccumulate significantly and is therefore not expected to meet these criteria
	No			The available data do not indicate that this substance meets the criteria for PBT.
Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?	NO			The available data do not indicate that this substance meets the criteria for PB1.
Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed			
If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?  Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous	No		ECHA C&L database	An EU harmonised C&L classification is available which indicates it does not meet these criteria
Is sufficient data available? (if not assume substance is very toxic)  Is substance very toxic?	Yes No			
Is substance very toxic?  Is substance hazardous to groundwater?	INU			
Is substance hazardous, if so, state on what basis	No			The EU C&L classification does not indicate that this substance meets the criteria for Hazardous. This along with the available weight of evidence therefore indicates this substance would not be determined as Hazardous. Further information on this substance will become available as it is is being reviewed under the Biocides Directive for use as a preservative and slimicide.
# equivalent risk phrases: T-R23/24/25, T+R26/27/28 (does not include Xn: R2* *equivalent risk phrases T-R39/23/24/25, T+R26/27/28, T-R48/23/24/25 (does *equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T-R45, T-R49, (does not include Carc. Cat. 3, XR-R40, Xpr.Cat. 3, Xr.R62, Xpr.Cat. 3, Xr.R62, Xpr.Cat.	not include R33, R67, Xi; R3	7, Xn;R4820/21/ a. Cat. 2, Muta. C	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database ECHA-CHEM NICNAS	http://echa.europa.eu/inform http://echa.europa.eu/brief-p https://www.nicnas.gov.au/c	rofile/-/briefprofil	e/100.022.916	-rdsek/dealain/12039 ac-assessment-details/assessment.id=2103

				2,2,2-nitrotriethanol (CAS: 102-71-6)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent	Value	Reference	2,2,2-mit differiality (CAS. 102-71-0)  Comments
	assume yes or no?	value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?  Persistence				
Passes ready biodegradation test	Yes		EU CoRAP report	222-nitrotriethanol was noted to be readily degradable based on the weight of evidence assessed for the purposes of REACH. Two studies noted as
			(2015)	supporting data noted 100% degradation after 5days and 86% degradation after 19days.
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent				
If answer to both questions is NO, additional data on half life is required			EU CoRAP report	
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days	No	1 to 7.2days	(2015)	DTS0s for river water in the range of 1 to 7.2days and for a water/sediment system in the range of 1.2 to 1.9days.
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days			EU CoRAP report	
Half life in soil ≥ 120 days  If answer to any question is YES, substance is persistent	No	>1.4 to <5.4days	(2015)	DT50s in the range >1.4 to <5.4days were reported
If answer to all auestions is NO. substance is not persistent  Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation			EU CoRAP report	
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?	No	<0.4 to <3.9	(2015)	BCFs in the range of <0.4 to <3.9 were noted in whole fish in one study. Another study reported a BCF of 0.59 in whole fish.
If answer to either question is YES, substance is bioaccumulative If no BCF data, is log Kow ≥ 4.5?	No	-2.3	EU CoRAP report	A log Kow of -2.3 was reported for 2,2,2-nitrotriethanol
If answer is YES, substance is bioaccumulative				
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals	Not assessed due to the above information			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol Octanol solubility ≥ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes No			
Toxicity	NO			
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	16mg/l	EU CoRAP report	A chronic NOEC value of 16mg/l was reported for a 21day study on Daphnia magna.
is the lowest chronic NOEC for freshwater or marine organisms & 0.01mg/l	NO	16mg/i	(2015)	A chronic NOEC value or 16mg/i was reported for a 21day study on Daphnia magna.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		EU CoRAP report (2015)	An EU harmonised CLP classification is not available for 2,2.2-nitrotriethanol. The majority of industry submissions to the database indicate it does not meet the oriteria however a number indicated STOT RE2. The review of the available data for REACH in the CoRAP report concluded that it did not meet the oriteria for STOT RE
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		EU CoRAP report (2015)	An EU harmonised CLP classification is not available for 2,2,2-nitrotriethanol. The industry submissions to the database indicate it does not meet the criteria. The review of the available data for REACH in the CoRAP report concluded that it was not carcinogenic, mutagenic or a reproductive toxin.
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			The EU CoRAP report concludes that it does not meet the criteria for PBT
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?			EU CoRAP report	DT50s for river water in the range of 1 to 7.2days and for a water/sediment system in the range of 1.2 to 1.9days. In addition as noted above the data
Half life in marine, fresh or estuarine water ≥ 60 days	No	1 to 7.2days	(2015)	reviewed in the EU CoRAP report indicate that it is readily biodegradable.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days if answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	<0.4 to <3.9	EU CoRAP report (2015)	BCFs in the range of <0.4 to <3.9 were noted in whole fish in one study. Another study reported a BCF of 0.59 in whole fish.
If answer is ves. substance is verv bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			The EU CoRAP report concludes that it does not meet the criteria for vPvB
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?	Not assessed  Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic,	1101 00000000			
substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		EU CoRAP report (2015)	An EU harmonised CLP classification is not available for 2,2,2-nitrotriethanol. The industry submissions to the database indicate it does not meet the criteria. The review of the available data for REACH in the CoRAP report concluded that it was not mutagenic.
If answer to any question is YES, substance is very toxic and hazardous	V			
Is sufficient data available? (if not assume substance is verv toxic)  Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess	No			
every breakdown product) # equivalent risk phrases: T.R.23/24/25, T.+R.26/27/28, (does not include Xn; R2 * equivalent risk phrases T.R.39/23/24/25, T.+R.26/27/28, T.R.48/23/24/25 (does * equivalent risk phrases carriongenic Carc. Cat. 1, Carc. Cat. 2, T.R.45, T.R.49,	not include R33. R67. Xi: I	R37. Xn:R4820/21/22 uta. Cat. 2, Muta. Cat.	. <i>Xn:R68/20/21/22)</i> 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
(does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63) REFERENCES				
ECHA CLP database	https://echa.europa.eu/infe	ormation-on-chemical cuments/10162/63d1	s/cl-inventory-database	v/discli/details/33926

				Acetic Acid (CAS: 64-19-7)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegredation test	Yes		EFSA (2013)	It is noted as readily biodegradable in the EFSA report however no detail is provided. However the half life data noted below indicates it does not meet the criteria for persistence.
Passes inherent biodecredation test # answer to either question is YES, substance is not persistent				the criteria for Dersistence.
If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days				
Half life fresh or estuarine water ≥ 40 days	No	0.55days	EFSA (2013)	Degradation half life in water was reported as 0.55days. This was supported by data on ECHA-CHEM which indicated 96% biodegradation after 20days in one study and >78% after 14days.
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days  If answer to any question is YES, substance is persistent  If answer to all auestions is NO. substance is not persistent	No	0.7 - 1.23 days	EFSA (2013)	Degradation half lives in soil were noted in the range of 0.7 - 1.23days
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?	No	3	HSDB	This is reported to be an estimated BCF value based on a log Kow of -0.71. A BCF was not noted in the EFSA report.
If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	No	0.09	EFSA (2013)	A log Kow of 0.09 was reported in the EFSA report. A log Kow of -0.17 was noted in ECHA-CHEM
If answer is YES, substance is bioaccumulative				
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?	Not assessed due to the above information			
Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm				
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	22.7mg/l	EFSA (2013)	A chronic study on the invertebrate Daphnia magna noted a 21d NOEC (reproduction) of 22.7mg/l. Chronic data was not located for fish or algae in the EFSA study. Acute data for fish included a 4d LC50 of 43.8mg/l for Cyprinus carpio and 45mg/l for Oncorhynchus mykiss. For the algal species
is the lowest diffolio NOEC for freshwater or marine organisms \$ 0.0 mg/r	NO	22./11lg/l	EF3A (2013)	Pseudokirchneriella subcapitata a 3d EC50 of 5.8mg/l was reported along with a 14d EC50 of 16mg/l for Lemna minor. A 90day NOEL of 1.26mg/l was reported in Ecotox for the Mozambique tilapia.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		FCHA C&I database	An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for				
reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			
is substance toxic?	NO			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?	No			
·	No			
Does substance pose an equivalent level of concern?	<b>No</b>	0.55days	EFSA (2013)	Degradation half life in water was reported as 0.55days. This was supported by data on ECHA-CHEM which indicated 96% biodegradation after 20days in one activity and 7.78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days		0.55days	EFSA (2013)	Degradation half life in water was reported as 0.55days. This was supported by data on ECHA-CHEM which indicated 96% biodegradation after 20days in one study and 378% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days		0.55days	EFSA (2013)	Degradation half life in water was reported as 0.55days. This was supported by data on ECHA-CHEM which indicated 96% biodegradation after 20days in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent	No			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any quesion is YES, substance is very persistent  Is bioconcentration factor ≥ 5000		0.55days	EFSA (2013) HSDB	Degradation half life in water was reported as 0.55days. This was supported by data on ECHA-CHEM which indicated 96% biodegradation after 20days in one study and >78% after 14days.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soll ≥ 180 days  Half life in water to stuarine sediment ≥ 180 days  Half life in water to soll ≥ 1	No			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to are question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?	No No			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in oil ≥ 180 days  Half life in oil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does groundwater monitoring data show half life lin groundwater ≥ 1 year  Does groundwater monitoring data show half life lin groundwater ≥ 1 year  Does Sybis draundwater samples show levels of the substance greater than the	No No No Not assessed			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  ts bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance prese a specific risk to groundwater?  Does defined for groundwater monitoring data show half lies in groundwater ≥ 1 vero  Doe 5 5% of groundwater amplies show level is of the substance greater than the LOQ?	No No No No Not assessed Not assessed			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  If answer to ary question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance was the production of the substance greater than the LOG?	No No No No Not assessed Not assessed Not assessed			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  If anniver to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # anniver is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater mointoining data show half life in erroundwater ≥ 1 year  Doe 5% of groundwater samples show levels of the substance pretater than the LOO?  # Or 180 days have all least one sample where the substance is detected above the LOO?  # anniver to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?	No No No No Not assessed Not assessed			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  If answer far you question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does for groundwater samples show levels of the substance greater than the LOG?  Doe 15% of sites have at least one sample where the substance preater than the solve the LOG?  ### for the persistent in groundwater?  ###################################	No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance yery persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Does substance pose a specific risk to groundwater ≥ 1 year  Does 35% of groundwater samples show levels of the substance greater than the  Doe 15% of siles have at least one sample where the substance is detected above the LOG?  ###################################	No No No No Not assessed Not assessed Not assessed			in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in oil ≥ 180 days  Half life in oil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance every persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 vear  Does Sy for groundwater samples show levels of the substance greater than the LOO?  If answer is any question is YES, substance is persistent in groundwater for expensive to any question is YES, substance is persistent in groundwater is substance oversistent in groundwater?  If substance is a persistent in groundwater?  If substance is parastrous  Bodes substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?	No  No  No  Not assessed  Not assessed  Not assessed  Not assessed		HSDB	in one study and >78% after 14ddays.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance overy persistent and very bioaccumulative  Is substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater ≥ 1 ver  Doe 5% of groundwater samples show heal file in groundwater ≥ 1 ver  Does Substance pose a specific risk to groundwater?  Does de to Do?  ## answer to any question is VES, substance is persistent in groundwater  ### substance is persistent in groundwater?  #### substance is persistent in groundwater?  #### substance is persistent in groundwater?  Is substance pose a pecific risk to groundwater?  Is substance work pose a pecific risk to groundwater?  Is substance on the pose a specific risk to groundwater?  Is substance on the pose a specific risk to groundwater?  Is substance on thuman health or human health or human health or human health or adverse effects on human heal	No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed		HSDB	in one study and >78% after 14days.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance overy persistent and very bioaccumulative  Se substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 vear  Doe 5% of groundwater samples show levels of the substance greater than the LOO?  # Solve the LOO?  # answer to any question is YES, substance is persistent in groundwater  # substance oersistent in groundwater?  # substance is parastent in groundwater?  # substance is parastent in groundwater?  Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse feelor.)  # answer to any question is YES, substance is very toxic and hazardous	No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed		HSDB	in one study and >78% after 14ddays.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance overy persistent and very bioaccumulative  Is substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater ≥ 1 ver  Doe 5% of groundwater samples show heal file in groundwater ≥ 1 ver  Does Substance pose a specific risk to groundwater?  Does de to Do?  ## answer to any question is VES, substance is persistent in groundwater  ### substance is persistent in groundwater?  #### substance is persistent in groundwater?  #### substance is persistent in groundwater?  Is substance pose a pecific risk to groundwater?  Is substance work pose a pecific risk to groundwater?  Is substance on the pose a specific risk to groundwater?  Is substance on the pose a specific risk to groundwater?  Is substance on thuman health or human health or human health or human health or adverse effects on human heal	No  No  No  Not assessed  Not assessed  Not assessed  Not assessed		HSDB	in one study and >78% after 14ddays.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does coundwater monitoring data show half life in groundwater ≥ 1 ver  Does Syb of groundwater samples show half life in groundwater ≥ 1 ver  Doe 5 % of groundwater samples show healf life in proundwater ≥ 1 ver  Do ≥ 15% of sites have at least one sample where the substance greater than the LOQ?  # answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?  Is substance is presistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance presistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic old substance very toxic?)	No  No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  Not yes		HSDB	in one study and >78% after 14ddays.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in size in marine, fresh or estuarine sediment ≥ 180 days  Half life in size ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does orgundwater monitoring data show half life in groundwater ≥ 1 ver  Does 55% of groundwater samples show levels of the substance greater than the LOQ?  Boe 100 ≥ 15% of groundwater samples show levels of the substance greater than the LOQ?  ## answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?  ## substance persistent in groundwater, bioaccumulative AND toxic, substance is hazardous    Substance   Su	No  No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  Not yes		HSDB	in one study and >78% after 14ddays.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does coundwater monitoring data show half life in groundwater ≥ 1 ver  Does Syb of groundwater samples show half life in groundwater ≥ 1 ver  Doe 5 % of groundwater samples show healf life in proundwater ≥ 1 ver  Do ≥ 15% of sites have at least one sample where the substance greater than the LOQ?  # answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?  Is substance is presistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance presistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic old substance very toxic?)	No  No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  Not yes		HSDB	in one study and >78% after 14ddays.  Estimated BCF value based on a log Kow of -0.71
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance overy persistent and very bioaccumulative  Is substance overy persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 vear  Doe 5% of groundwater samples show levels of the substance greater than the LOO 15% of sites have at least one sample where the substance is detected above the LOO?  # answer to any question is VES, substance is persistent in groundwater?  # substance is parsistent in groundwater, bioaccumulative AND toxic, substance is parairdous  Does substance pode a specific risk to groundwater?  Is substance very toxic?  Is substance with provided to adverse effects or human health.  # answer to any question is VES, substance is very toxic and hazardous is sufficient data available? (find assume substance is very toxic)  Is substance very toxic?	No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  No  No  Ves  No  No  No  No  No  No  No  No  No  N	3	HSDB  ECHA C&L database	Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does acoundwater monitoring data show half life in groundwater ≥ 1 ver  Does 5% of groundwater samples show levels of the substance greater than the LOQ?  Does substance pose a specific risk to groundwater?  Does aroundwater monitoring data show half life in groundwater ≥ 1 ver  Doe 5% of sites have at least one sample where the substance is detected above the LOQ?  # answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater.  Is substance persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance wery toxic?  Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous  Is substance very toxic?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  # equivalent risk phrases carinogenic (Care, Ca, E, T, R4, S, T	No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  No  No  Ves  No  No  No  No  No  No  No  No  No  N	3	HSDB  ECHA C&L database	Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does conundwater monitoring data show half life in groundwater ≥ 1 ver  Does substance pose a specific risk to groundwater?  Does conundwater monitoring data show half life in groundwater ≥ 1 ver  Doe ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?  The substance is persistent in groundwater is substance in search that is substance betsistent in oroundwater?  Is substance is persistent in groundwater?  Is substance is pose a specific risk to groundwater?  Is substance is pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific risk to groundwater?  Is substance were pose a specific r	No  No  No  No  No  Not assessed  No assessed	3	HSDB  ECHA C&L database	Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 ver  Does 5% of groundwater samples show levels of the substance greater than the LOQ?  Does substance pose a specific risk to groundwater?  Is substance persistent in groundwater proposed to the substance greater than the LOQ?  Branswer to any question is YES, substance is persistent in groundwater is substance pensistent in consolvealer?  Is substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous  Is substance very toxic?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  # equivalent risk phrases CFR39/23/24/25, Tx-R26/27/28, Tx-R26/27/28, Tx-R26/27/28, Tx-R26, Xn-R63)  Does substance have breakdown products of concern?  ###################################	No  No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  No  No  Yes  No  No  No  No  No  No  No  No  No  N	3 737. XI;R48202 1/2 nn. Car. 2. Mans. Ca	HSDB  ECHA C&L database  12, Xn,R88202 1721  1. 3, T,R46, T,R68, toxic	in one study and 578% after 14days.  Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria  for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in soil ≥ 180 days  Hanswer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance yes estation and very bioaccumulative  Is substance every persistent and very bioaccumulative?  Does aroundwater monitoring data show half life in groundwater ≥ 1 year  Does substance pose a specific risk to groundwater?  Does aroundwater monitoring data show half life in groundwater ≥ 1 year  Doe S for groundwater samples whore levels of the substance greater than the  Doe ≥ 5% of groundwater samples whore levels of the substance is detected above the LOO?  # answer to any question is VES, substance is persistent in groundwater is substance in persistent in groundwater?  # substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance very toxic?  Is substance very toxic on human health  # answer to any question is VES, substance is very toxic and hazardous is substance is admitted that available? (fit not assume substance is very toxic)  Is substance hazardous, if so, state on what basis  # equivalent risk phrases: TR23/24/25, T+R26/27/28 (does not include Xm. R.*  * equivalent risk phrases acrinogenic Carc. Cat. 1, Carc. Cat. 2, TR45, TR49, Geor. Cat. 3, Arr. R63)  Does substance have breakdown products of concern?  REFERENCES  ECHA CHEM	No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  No  20, Xn-R21, Xn-R22)  s not include R32, R7, X1, 4  mutagenic Muta, Cat. 1, M.  No  https://echa.europa.eu/infe	3  R37, Xn:R482021/2 ta. Cat. 2, Muta. Ca	HSDB  ECHA C&L database  22. Xn.R68202122) t. 3. T.R46, T.R68, toxic	in one study and >78% after 14days.  Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria  for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance yery persistent and very bioaccumulative?  Does aroundwater monitoring data show half life in groundwater ≥ 1 year  Does aroundwater monitoring data show half life in groundwater ≥ 1 year  Does substance pose a specific risk to groundwater?  Does aroundwater monitoring data show half life in groundwater ≥ 1 year  Doe ≥ 5% of groundwater samples who veles of the substance greater than the  Doe ≥ 15% of siles have at least one sample where the substance is detected above the LOO?  # answer to any question is VES, substance is persistent in groundwater?  # substance is persistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance is parsistent in groundwater, bioaccumulative and hazardous  Does substance is parsistent in groundwater, bioaccumulative and the substance is parsistent in groundwater?  Is substance very toxic?  Is substance very toxic?  Is substance very toxic?  Is substance hazardous, if so, state on what basis  # equivalent risk phrases: TR23/24/25, T+R26/27/28 (does not include Xn; R;  * equivalent risk phrases a transpection of concern?  ## REFERENCES  ECHA C-HEM  HSDB  ECOHA C-HEM  HSDB  ECOHON	No  No  No  No  Not assessed  No  No  No  No  No  No  No  No  No  N	3 3 237, Xx,R48202112 in. Cat. 2, Mata. 2,	HSDB  ECHA C&L database  22. Xn.R68202122) t. 3. T.R46, T.R68, toxic	in one study and 578% after 14days.  Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria  for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R81
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Hanswer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 vear  Doe 5% of groundwater samples show levels of the substance greater than the LOO?  Does coundwater monitoring data show half life in groundwater ≥ 1 vear  Doe 5% of sites have at least one sample where the substance is detected  Does the LOO?  # answer to any question is YES, substance is persistent in groundwater  ## substance is persistent in groundwater, bioaccumulative AND toxic, substance is parasitent in groundwater, bioaccumulative AND toxic, substance is parasitent in groundwater, bioaccumulative AND toxic, substance pose a specific risk to groundwater?  Is substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health ## answer fo any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic and hazardous  Is substance hazardous, if so, state on what basis  ## equivalent risk phrases: T.R.23/24/25, T.R.28/27/28, (160es not include Xm, Ri- quivalent risk phrases: T.R.23/24/25, T.R.28/27/28, T.R.48/22/24/25 (concess ubstance)  ## equivalent risk phrases: T.R.23/24/25, T.R.28/27/28, T.R.48/22/24/25 (concess ubstance)  ## equivalent risk phrases: T.R.23/24/25, T.R.28/27/28, T.R.48/22/24/25 (concess ubstance)  ## equivalent risk phrases: T.R.23/24/25, T.R.28/27/28, T.R.48/27/28, T.R.48/27/28, T.R.48/27/28, T.R.48/27/28, T.R.48/27/24/25, T.R.48/27/28, T.R.48/27/24/25, T.R.48/27/28, T.R.48/27/24/25, T.R.24/24/25, T.R.24/24/25, T.R.24/24/25, T.R.24/24/25, T.R.24/24/2	No  No  No  No  Not assessed  No  No  No  No  No  No  No  No  No  N	337. Xv;R48202 1/2 m. Car. 2. Man. Car virusition-on-chemical virusition-of-chemical virusition-of-chemical virusition-of-chemical virusition-of-chemical	HSDB  ECHA C&L database  12, Xn,R682021722) 1.3, T,R46, T,R68, toxic  als,G-l-inventory-database seiers DISS-96867866-b	in one study and 578% after 14days.  Estimated BCF value based on a log Kow of -0.71  An EU harmonised C&L classification is available for acetic acid. It indicates does not meet these criteria  for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R81

				Adipic acid (CAS: 124-04-9)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Passes ready biodegradation test	Yes	68-90% biodegradation after 14days	SIDS (2004)	A number of studies were reported in the SIDS document which indicated adipic acid is readily biodegradable. One study reported 68-90% degradation after 14days, another 91% after 28days and another 83% after 30days
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days  Half life fresh or estuarine water ≥ 40 days  Half life marine sediment ≥ 180 days  Half life fresh or estuarine sediment ≥ 120 days  Half life fresh or 2120 days	No data (see comment)			No degradation half life data was located however as noted above a number of ready biodegradability studies were reported which indicated it does not meet the criteria for persistence
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent) Is substance persistent?	Yes <b>No</b>			
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	No	3	SIDS (2004)	No measured BCFs were located. The SIDS document noted a calculated BCF value of 3 based on a log Kow of 0.093
If no BCF data, is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	No	0.093	SIDS (2004)	
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals Molecular size 2 4.3 mm Molecular weight 2 1100/miol Octanol solubility \$ 0.002mmol/l # weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)	Not assessed due to the above data			
in weight of evidence indicates bloaccumulation uninely (i.e. PLS answers) substance is not bloaccumulative If weight of evidence indicates bloaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			The BCF and log Kow data indicate that it does not meet the criteria for bioaccumulation
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	6.3mg/l	ECHA/CHEM	A 21d NOEC for the invertebrate Daphnia magna was 6.3mg/l. A study on the alga Pseudokirchneriella subcapitata indicated 3d EC10 of 41mg/l. The available chronic data was limited but indicated that adipic acid did not meet the criteria. This was supported by the available acute data which showed acute effects on algae, invertebrates and fish in the range of 27 ->1000mg/l. (SIDS 2004). No chronic aquatic toxicity data was noted in the SIDS review
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	A harmonised CLP classification is available for adipic acid and indicates that it does not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic	No		ECHA C&L database	A harmonised CLP classification is available for adipic acid and indicates that it does not meet these criteria
If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No (see comment)		SIDS (2004)	Adipic acid has been reported to be readily biodegradable and therefore does not meet the criteria for very persistent
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	3	SIDS (2004)	A calculated BCF of 3 indicates that it does not meet the criteria
If answer is ves. substance is verv bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed			
If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic? Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for				
adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous	No		EUHA C&L database	A harmonised CLP classification is available for adipic acid and indicates that it does not meet these criteria
Is sufficient data available? (if not assume substance is verv toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T.R.23/24/25. T+.R.26/27/28 (does not include Xn. R2 * equivalent risk phrases: T.R.39/23/24/25, T+.R.26/27/28, T.R.48/23/24/25 (does * equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T.R.45, T.R.49, (does not include Carc. Cat. 3, Xr.R.40, Repr. Cat. 3, Xr.R.62, Xr.R.63)	not include R33, R67, Xi;	R37, Xn;R4820/21/22 luta. Cat. 2, Muta. Cat	2, Xn;R68/20/21/22) . 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2., R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES SIDS (2004) Adipic acid ECHA-CHEM ECHA C&L database	http://webnet.oecd.org/Hj http://echa.europa.eu/reg http://echa.europa.eu/info	istration-dossier/-/regi	stered-dossier/15464/6/	/2/6/?document/UUID=92685140-28f3-4af8-a82e-358c3c92318f

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Alcohols C6-10 ethoxylates (CAS: 70879-83-3)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence			HERA Risk	
Passes ready biodegradation test	Yes		assessment (2009)	A number of studies are reported for a range of C chain length alcohol ethoxylates which indicate they are readily biodegraded
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days	No		HERA Risk	Degradation half lives in surface water are reported in the order of hours for a range of C chain length alcohol ethoxylates. This along with the information
Half life fresh or estuarine water ≥ 40 days			Assessment (2009)	that they are readily biodegradable indicates that this group of substances does not meet the criteria for persistence.
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days  If answer to any auestion is YES, substance is persistent  If answer to all questions is NO substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	<400	HERA risk assessment (2009)	The available data indicates that BCFs for alcohol ethoxylates are generally below 400 which indicates it does not meet the criteria for bioaccumulation. This is supported in the report by Environment Canada (2013)
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				
			HERA risk	A range of log Kow values are reported for alcohol ethoxylates with a range of C chain lengths. The log Kow's reported are for those within the 6-10 chain
If no BCF data, is log Kow ≥ 4.5?	No	3.15 - 4.57	assessment (2009)	lengths. They indicate that in general the log Kow values reported are below the threshold. The report notes that due to their surfactant properties calculation of log Kow for these substances is more difficult.
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals	above information			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			Although some of the log Kow values reported for some of the relevant C chain lengths are close to the threshold of 4.5 the overall weight of evidence including the BCF data indicates that it is not expected to meet the criteria of bioaccumulation
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	0.7mg/l	HERA (2009)	The NOEC of 0.7mg/l realtes to a chronic study on the fathead minnow. It is supported by chronic studies for a range of fish, invertebrate and algal
and the contest and the contest of t	1.0	o.rmgr	TIETOT (E000)	species which indicate effects in the range of 0.7 - 9.7 mg/l. The available data indicates it does not meet the criteria for chronic aquatic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised classification is not available. Industry data submissions to the C&L database indicate that it does not meet the criteria. This is supported by data in the HERA assessment which reports that the available data does not indicate significant effects from long term exposure
				An EU harmonised classification is not available. Industry data submissions to the C&L database indicate that it does not meet the criteria. This is
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	supported by data in the HERA assessment which reports that the available data does not indicate mutagenic, carcinogenic or developmental/reproductive effects
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No		HERA Risk Assessment (2009)	Degradation half lives in surface water are reported in the order of hours for a range of C chain length alcohol ethoxylates. This along with the information that they are readily biodegradable indicates that this group of substances does not meet the criteria for persistence.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	<400	HERA risk	The available data indicates that BCFs for alcohol ethoxylates are generally below 400 which indicates it does not meet the criteria for bioaccumulation.
If answer is yes, substance is very bioaccumulative			assessment (2009)	This is supported in the report by Environment Canada (2013)
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed			
above the LOQ?  If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic,				
substance is hazardous Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	An EU harmonised classification is not available. Industry data submissions to the C&L database indicate that it does not meet the criteria. This is supported by data in the HERA assessment which reports that the available data does not indicate mutagenic, carcinogenic or developmental/reproductive effects
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T;R23/24/25, T+;R26/27/28 (does not include Xn; R2 * equivalent risk phrases T;R39/23/24/25, T+;R26/27/28, T;R48/23/24/25 (does A equivalent risk phrases carriponentic Care, Cat 1, Care, Cat 2, T;R45, T;P40,	not include R33. R67. Xi: R3	7. Xn:R4820/21/	22. Xn:R68/20/21/22)	for reproduction Benr Cat 1 Benr Cat 2 BEN BEN
^ equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T;R45, T;R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	moragenic Muta. Cat. 1, Muta	ь. онь. 2, миtа. С	ы. э, т,к46, т;К68, toxic	nor reproduction (repl. Cell. 1, Repl. Cell. 2., ROU , ROT
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database HERA - Alcohol ethoxylates (2009)	http://echa.europa.eu/inform			\dischidetails/110226 \text{Version*\2024\2034\2034\203ept\4009\pdf}
Environment Canada (2013)	http://www.ec.qc.ca/ese-ees	/164786DB-7B5E	3-47DF-93FA-888C99E3	Version%-02-%-02-%-20-septis-2009.pdf D612/FEQG_Alcohol_Ethoxylates_EN.pdf

				Alkyl polyglucoside (CAS: 132778-08-6)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent		C9-11	alkyl D-glycopyranoside, decyl/undecyl glycosides (Nonionic surfactant)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	Yes		Gamia et al (1997)	Limited data is available on this substance. Data located indicates it is readily biodegraded. This is supported by the weight of evidence of other non-ionic surfactants and surfactants in general.
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days	No data			No data was located on degradation half lives.
Half life fresh or estuarine water ≥ 40 davs Half life marine sediment ≥ 180 days				
Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes No			Limited data is available on this substance. Data located indicates it is readily biodegraded. This is supported by the weight of evidence of other non-
Is substance persistent?	No			ionic surfactants and surfactants in general.
Bioaccumulation  Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (see comment)			Interpretation of BCF studies is difficult for surfactants. No specific BCF data was located for alkyl polyglucosides
Does field data show evidence for biomagnification?	No data (see comment)			interpretation of BCF studies is difficult of surfactants. No specific BCF data was located for alkyr polyglicosides
If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	No data (see comment)			Experimental derivation of Log Kow is not straight forward for surfactants
If answer is YES, substance is bioaccumulative				
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals	Not assessed			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l  If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	No			
Is substance bioaccumulative?	Yes (lack of sufficient			No data was located on the bioaccumulation of alkyl polyglucosides. Assessment of bioaccumulation of surfactants is noted to be difficult. In the absence
is substance productumulative:	data)			of any data have had to indicate Bioaccumulattive due to lack of data.
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	1.4mg/l	Gamia et al (1997)	Limited data was available on the toxicity of alkyl polyglucoside. A 21d NOEC of 1.4mg/l was reported for the invertebrate Daphnia magna. Acute toxicity data for Daphnia for alkyl polyglucosides was noted in the range of 37 - 137mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised classification is available however the industry data submissions to the C&L database do not indicate it meets these criteria.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised classification is available however the industry data submissions to the C&L database do not indicate it meets these criteria. This is supported by data available on alkylpolyglucosides in general along with other non-ionic surfactants
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			Limited data was available however the weight of evidence indicates it does not meet the criteria for toxicity
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No		Gamia et al (1997)	Limited data is available on this substance. Data located indicates it is readily biodegraded. This is supported by the weight of evidence of other non-ionic surfactants and surfactants in general.
Half life in marine, fresh or estuarine sediment ≥ 180 davs Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent				
il answer to any question is TES, substance is very persistent				
Is bioconcentration factor ≥ 5000	Yes (based on lack of data)			Interpretation of BCF studies is difficult for surfactants. No specific BCF data was located for alkyl polyglucosides
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			Limited data was available however the weight of evidence indicates it does not meet the criteria for vPvB
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?				
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic,				
Substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for			ECHA C&L	No EU harmonised classification is available however the industry data submissions to the C&L database do not indicate it meets these criteria. This is
adverse effects on human health	No		database/EAS (2007)	supported by data available on alkylpolyglucosides in the data submission to the US FDA which noted that the available data for alkyl polyglucosides did not indicate mutagenicity. The data was not specific to the C9-11 alkyl polyglucosides but was noted to be considered applicable to this group.
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance very toxic?  Is substance hazardous to groundwater?				
				Limited data is available on this substance. The weight of evidence for this substance, other non-ionic surfactants and surfactants in general indicates it
Is substance hazardous, if so, state on what basis	No			Limited data is available on this substance. The weight of evidence for this substance, other non-tonic surractants and surractants in general indicates it does not meet the criteria for Hazardous.
# equivalent risk phrases: T.R23/24/25, T+R26/27/28 (does not include Xn; R2 *equivalent risk phrases T:R39/23/24/25, T+R26/27/28, T;R48/23/24/25 (does *equivalent risk phrases carinogenic Carc. Cat. 1, Carc. Cat. 2, T;R45, T;R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33, R67, Xi; R37	7. Xn;R4820/21/ Cat. 2, Muta. C	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database	http://echa.europa.eu/informa			
Detergents Ingredients Database (2004) Gamia et al (1997) - Ecological properties of alkyl polyglucosides	http://www.greencouncil.org/o https://ac.els-cdn.com/S0045	loc/Resources0 653597001197	entre/Detergent_Ingredier /1-s2.0-S0045653597001	nt_Database_2004.pdf 1197-main.pdf?_tid=e4c1a442-cf7d-11e7-a9c8-00000aacb35f&acdnat=1511352707_5909fab0073273a8cc66306fe799a24a
EAS (2007) GRAS exemption claim - alkyl polyglucoside surfactants	nttps://www.yumpu.com/en/d	ocument/fullscr	een/5150687/gras-notice-0	000237-alkyl-polyglycosides-accessdata-fda-food-/24

			Ammonium chlorido (CAS: 12125 02 0)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value Reference	Ammonium chloride (CAS: 12125-02-9)
	assume yes or no?	- auc Reference	CONSTRUIS
Is substance persistent, bioaccumulative and toxic?  Persistence			
Passes ready biodegradation test	No data (see comment)		The persistence criteria are not directly applicable to metals/inorganics such as ammonium chloride and were developed principally for organic substances (see comments below)
Passes inherent biodegradation test If answer to either question is YES, substance is not persistent			
lf answer to both questions is NO, additional data on half life is required			
Half life marine water ≥ 60 days	No	SIDS (2003)	The pensistence orberia are not directly applicable to metals incorpanics such as ammonium chloride and were developed principally for organic substances. No specific information of edeparation fall fives are available for ammonium chloride. It is very sobble in mater horselve and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.
Half life fresh or estuarine water ≥ 40 davs Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days			
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent			
Is sufficient data available? (if not assume substance is persistent)	Yes		The persistence criteria are not direcity applicable to metals /inorganics such as ammonium chloride and were developed principally for
Is substance persistent?	No		organic substances. Although no degradation half life data is available due to the fact it is very soluble in water and is will dissociate to form ammonium and chloride ions. Ammonium ions will mineralise to nitrite.
Bioaccumulation			BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No (see comment)	SIDS (2003)	not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on bioaccumulation is not available.
Does field data show evidence for biomagnification?  If answer to either auestion is YES. substance is bioaccumulative			
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	No (see comment)	SIDS (2003)	Log Kow values are not applicable to inorganics such as ammonium chloride. The SIDS report notes that the log Kow for this substance can't be experimentally derived but that it is expected to be very low.
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to		
unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3mm Molecular weight ≥ 1100q/mol Octanol solubility ≤ 0.002mmol/I	above information		
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative			
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained			
Is sufficient data available? (if not assume substance bioaccumulates)	Yes No		Although BCF and log Kow data are not directly applicable to ammonium chloride the available the available information indicates that
Toxicity			ammonium chloride is not expected to bioaccumulate in aquatic oragnisms
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	SIDS (2003)	Chronic toxicity data was reported for algae, invertebrates and fish with effect concentrations reported in the range of 8 - 26.8mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No	ECHA C&L database	An EU harmonised C&L classification is available for ammonium chloride. This indicates that it does not meet the criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic	No	ECHA C&L database	An EU harmonised C&L classification is available for ammonium chloride. This indicates that it does not meet the criteria
If answer to all questions is NO, substance is not toxic			
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No		
Is substance toxic?	No		
Is substance toxic?	No		
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water a 60 days	No	SIDS (2003)	The persistence criteria are not directly applicable to metals /inorganics such as ammonium chloride and were developed principally for organic substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No No	SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine valer 2 60 days  Half life in marine, fresh or estuarine sediment 2 180 days	No No	SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000	No No	SIDS (2003) SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative	No No No		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  ts substance very persistent and very bioaccumulative?	No No		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Is substance in soil ≥ 180 days  Is substance is very persistent  Is substance is very persistent  Is substance very persistent and very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does on ondwater monitoring data show half life in groundwater ≥ 1 vear  Does 28% of groundwater samples show levels of the substance greater than the	No		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine valer ≥ 60 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does croundwater monitoring data show half life in orrundwater ≥ 1 vear to 200 to 15% of site have at least one sample where the substance is detected.	No No No		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance one a specific risk to groundwater?  Does gubstance pose a specific risk to groundwater?  Does gubstance from biom facts show half life in concrolleder ≥ 1 veer  Do ≥ 5% of groundwater samples show levels of the substance greater than the  LOO?	No N		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative?  Does substance pose a specific risk to groundwater?  To ≥ 5% of groundwater monitoring data show half life in oroundwater ≥ 1 vear to ≥ 5% of groundwater monitoring data show half life in oroundwater ≥ 1 vear to ≥ 5% of groundwater somples show levels of the substance greater than the color; 5% of sites have at least one sample where the substance is detailed above the LOQ?  If answer to any question is YES. Substance is persistent in groundwater.	No N		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance yety persistent and very bioaccumulative?  Does substance pose a specific fisk to groundwater?  Does Substance pose a specific fisk to groundwater?  Is abstance yety of groundwater samples show levels of the substance greater than the LOG?  If answer to any question is YES, substance is persistent in groundwater in groundwater.  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.	No N		substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance yery persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does or undwater immolitorin data show half life in condwater ≥ 1 vear Doe ≥ 6% of groundwater samples show levels of the substance greater than the LOG?  Parswer for any question is YES, substance is persistent in groundwater.  If substance persistent in groundwater.  If substance persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.	No N	SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does of groundwater samples show levels of the substance greater than the LO?  If answer to any question is YES, substance is persistent in groundwater is substance pose as substance in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  Is substance very toxic?  Is answer to any question is YES, substance is very toxic and hazardous  Southiclent data available? (If not assume substance is very toxic and hazardous)	No N	SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on bioaccumulation is not available.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to aroundwater?  Does substance pose a specific risk to aroundwater?  Does substance pose a specific risk to aroundwater?  If answer is any question is YES, substance is persistent in aroundwater and show half life in oroundwater and show half life in oroundwater?  If answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater, life substance pose a specific risk to groundwater?  Is substance hazardous  Does substance pose a specific risk to groundwater?  Is substance no human health  If answer to any question is YES, substance is very toxic and hazardous	No	SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on bioaccumulation is not available.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  If answer to any question is YES, substance is persistent in groundwater adverse bioacve the LOQ?  If answer to any question is YES, substance is persistent in groundwater labove the LOQ?  If answer to any question is YES, substance is persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic?	No N	SIDS (2003)	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on bioaccumulation is not available.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  If answer is yes, substance is year by bioaccumulative?  If answer is any question is YES, substance is persistent in groundwater and bow the LOC?  If answer to any question is YES, substance is persistent in groundwater?  If substance persistent in groundwater, bioaccumulative AND toxic, audistance is persistent in groundwater, bioaccumulative and by the substance is persistent in groundwater, bioaccumulative and by the substance is persistent in groundwater, bioaccumulative AND toxic, audistance is persistent in groundwater, bioaccumulative and by the substance is persistent in groundwater, bioaccumulative and by the substance is persistent in groundwater, bioaccumulative and by the substance is persistent in groundwater, bioaccumulative and by the substance is persistent in groundwater, bioaccumulative and by the substance is because in the substance is persistent in groundwater, bioaccumulative and hazardous  Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for advance in any question is YES, substance is very toxic and hazardous  Is substance elease on human health.  If answer to any question is YES, substance is very toxic and hazardous  Is substance very toxic?  Is substance very toxic?  Is substance very toxic?  Is substance very toxic?  Is substance toxic and hazardous, if so,	No	SIDS (2003)  ECHA C&L database  ECHA C&L database	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on bioaccumulation is not evaluable.  An EU harmonised C&L classification is available for ammonium chloride. This indicates that it does not meet the criteria for mutagenicity
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative?  Does substance pose a specific fisk to groundwater?  Does substance cose a specific fisk to groundwater?  Does of condiverte monitorin data show half life in concidente ≥ 1 veer  Doe ≥ 5% of groundwater samples show levels of the substance is genter than the LO?  If answer to any question is YES, substance is persistent in groundwater.  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.  Is substance very toxic?  Is substance very toxic?  Is substance very toxic?  Is substance is persistent in groundwater, bioaccumulative AND toxic, adverse effects on human health if answer to any question is YES, substance is very toxic and hazardous  Does substance were toxic?  Is substance very toxic?  Is substance very toxic?  Is substance very toxic?  Is substance hazardous, if so, state on what basis	No	SIDS (2003)  ECHA C&L database  ECHA C&L database	substances. No specific information on degradation half lives are available for ammonium chloride. It is very soluble in water however and will dissociate to form ammonium and chloride ions. It will therefore not persist as ammonium chloride. Ammonium ions are likely to be mineralised to nitrite.  BCF studies are not directly relevant to inorganic substances such as ammonium chloride. The SIDS document notes that based on its properties it is not likely to accumulate in aquatic organisms. It also notes that the component ions are common components of living organisms and therefore data on bioaccumulation is not evaluable.  An EU harmonised C&L classification is available for ammonium chloride. This indicates that it does not meet the criteria for mutagenicity

				Amorphous silica fume (CAS: 69012-64-2)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Amorphous silica fume consists of silicon dioxide particles
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	See comment			Test not applicable for metals/inorganics. The persistence criteria are not directly applicable to metals/inorganics and were developed principally for
Passes inherent biodegradation test	See comment			organic substances. Metals and inorganics such as amorphous silica fume are inherently persistent.
If answer to either question is YES, substance is not persistent				
If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days	See comment			Test not applicable for metals/inorganics. The persistence criteria are not directly applicable to metals/inorganics and were developed principally for
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days				organic substances. Metals and inorganics such as amorphous silica furne are inherently persistent.
Half life in soil ≥ 120 days If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	Yes (See comment)			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Metals and inorganics such as amorphous silica fume are inherently persistent.
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No (See comment)		Bernd/Dow Corning/ECHA CHEM	BCF studies are not directly relevant to inorganic substances such as amorphous silica furne. No BCF data is available for amorphous silica furne 1 however it is not expected to accumulate in organisms based on its properties.
Does field data show evidence for biomagnification?				· · · · · · · · · · · · · · · · · · ·
If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	Log Kow values are not applicable to			Log Kow are not considered reliable estimates of the potential for bioaccumulation of inorganic substances such as amorphous silica.
	metals/inorganics			
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not accounted due to the			
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?  Substance is chronically non-toxic in mammals	above information			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	323mg/l	ECHA-CHEM/Bernd	Very little aquatic toxicity data was located. The only chronic endpoint was a 3d NOEC for the alga Skeletonema costatum of 323mg/l. This indicated it
is the lowest chronic NOEC for freshwater or manne organisms \$ 0.01 mg/l	NO	323mg/I	ECHA-CHEM/Bernd	did not meet the criteria for chronic toxicity. The available acute toxicity data for algae, invertebrates and fish supported this with effects reported in the range of >100 - 4200mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised classification is not available for amorphous silica fume. The majority of the industry data submissions to the C&L database indicate
is there substantian evidence of long term toxicity (STOT RET of STOT REZ)	NO		ECHA CAE dalabase	that it does not meet the criteria. Some noted STOT RE2 but primarily via inhalation.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database/NICNAS	An EU harmonised classification is not available for amorphous silica furme. The industry data submissions to the C&L database indicate that it does not meet the criteria. NICNAS noted has been identified as potential carcinogen but via inhalation route.
If answer to any question is YES, substance is toxic			ualabase/NICNAS	meet die chiena. Microso nose des deemdendied as potential carcinogen out via innatation route.
If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	Yes (see comment)			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Metals and inorganics such as amporphous silica fume are inherently persistent.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No (See comment)		Bernd/Dow	BCF studies are not directly relevant to inorganic substances such as amporphous silica fume. No BCF data is available for amorphous silica fume
	NO (See Comment)		Corning/ECHA CHEM	I however it is not expected to accumulate in organisms based on its properties.
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Do ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ? If answer to any question is YES, substance is persistent in groundwater	Not assessed			
If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous				
Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database/NICNAS	An EU harmonised classification is not available for amorphous silica fume. The industry data submissions to the C&L database indicate that it does not meet the criteria. This is supported by data in the NICNAS review
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
	NO			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# ominglest rick phrases: T-P32/M/DE T - P32/M/DE - P32/M/DE T - P32/M/DE T - P32/M/DE - P32/M/DE - P32/M/DE	0 Vo-P24 Vo-P221			
# equivalent risk phrases: T:R23/24/25, T:R26/27/28 (does not include Xn; R2; equivalent risk phrases T:R39/23/24/25, T:R26/27/28, T:R48/23/24/25 (does ^ equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T:R45, T:R49,	not include R33, R67, Xi; R3	7, Xn;R4820/21/	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68 toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
(does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	.g muu. oat. 1, mula	,u.a. C		And were a stronger and transfer and transfe
Does substance have breakdown products of concern? REFERENCES	No			
ECHA C&L database ECHA-CHEM	http://echa.europa.eu/inform https://echa.europa.eu/regist	tration-dossier/-/r	registered-dossier/16156/	6/2/6
NICNAS Dow Corning Ramd (2006)	http://www.dowcorning.co.kr	/ko_KR/content/a	about/aboutehs/EHSPorta	ap-group-assessment-report?assessment_id=1120  Files/GPS_Safety_Report_69012-64-2.pdf
Bernd (2006)	http://www.iibcc.biz/wp-conte	ent/up/oads/2015	or i r/IIDCC_02-1.pdf	

				Bentonite (CAS: 1302-78-9)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?	assume yes or no?			
Persistence				
Passes ready biodegradation test	No data		EHC	Bentonite is a mineral clay which occurs widely in the environment. The persistence crtieria are not directly applicable to metals/inorganics and were developed principally for organic substances. Data is not available on the biodegradability of bentonite however it is not expected to biodegrade to any
Passes inherent biodegradation test	No data			significant extent based on its composition.
If answer to either question is YES, substance is not persistent If answer to both questions is NO. additional data on half life is required				
Half life marine water ≥ 60 days	No data		FHC	
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days	No data No data		Lilo	Bentonite is a mineral clay which occurs widely in the environment. The persistence crtieria are not directly applicable to metals/inorganics and were developed principally for organic substances. Data is not available on the biodegradability of bentonite however it is not expected to biodegrade to any
Half life fresh or estuarine sediment ≥ 120 days	No data			significant extent based on its composition.
Half life in soil ≥ 120 davs If answer to any question is YES, substance is persistent If answer to all questions is NO. substance is not persistent	No data			
Is sufficient data available? (if not assume substance is persistent)	W.			
is sufficient data available? (If not assume substance is persistent)	No			Bentonite is a mineral clay which occurs widely in the environment. The persistence crtieria are not directly applicable to metals/inorganics
is substance persistent?	Yes			Denotine is a nime and any which occurs wherey in the environment. The persistence cheens are not unexp approache to inectal and were developed principally for organic substances. Data is not available on the biodegradability of bentonite however it is not expected to biodegrade to any significant extent based on its composition.
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (see comment)		EHC	No BCF data is available for bentonite. BCF studies are not directly relevant to inorganic substances such as bentonite. However it is not expected to accumulate in organisms (EHC)
Does field data show evidence for biomagnification?				accumulate in organisms (cnc)
If answer to either question is YES, substance is bioaccumulative				
If no BCF data. is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	No data (see comment)			Log Kow values are not applicable to inorganics
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed			
unlikely? Substance is chronically non-toxic in mammals				
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),				
BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			Although no BCF data were located and log Kow was not obtained as not relevant to bentonite overall information on the mineral bentonite indicates that it is not likely to bioaccumulate in tissues.
Toxicity				No chronic aquatic toxicity data was located however an acute study on the fish Onchorhynchus mykiss indicates that it is of low acute toxicity with acut
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	HS	DB/Ecotox/EHC	effects at a constraint on 9000mg/t. This indicates that it is unlikely to meet the criteria for chronic toxicity. The EHC report states that it is of low toxicity to aquatic life.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No	ECH	IA C&L database	An EU harmonised classification is not available for bentonite. The majority of industry submissions to the database indicate that it does not meet these criteria. Some of the submissions indicate it may meet the STOT RE1 classification however this is noted to be in relation to effects on the lungs through inhalation.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L atabase/EFSA (2017)	An EU harmonised classification is not available for bentonite. Industry submissions to the database do not indicate that it meets these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No data		EHC	Bentonite is a mineral clay which occurs widely in the environment. Data is not available on the biodegradability of bentonite however it is not expected biodegrade to any significant extent based on its composition.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				biodediade to any sidninicant extent dased on its combositori.
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No data		EHC	No BCF data is available for bentonite. However it is not expected to accumulate in organisms
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Do ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed			
If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic,				
Substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
	INUL BSSESSEG			
Is substance very toxic?			ECHA C&L	
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No	d	atabase/EFSA (2017)	An EU harmonised classification is not available for bentonite. Industry submissions to the database do not indicate that it meets these criteria. A review by EFSA (2017) reported that the available data did not indicate it was mutagenic.
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is verv toxic) Is substance very toxic?	Yes No			
is substance hazardous to groundwater?				
is substance initial acts to groundwater.				
Is substance hazardous, if so, state on what basis	No			Limited data is available on bentonite. It is a mineral that is found naturally in the environment and has a range of uses. The weight of evidence indicates it does not meet the criteria for Hazardous
# equivalent risk phrases: T.R23/24/25, T+.R26/27/28 (does not include Xn; R2* equivalent risk phrases T.R39/23/24/25, T+.R26/27/28, T.R48/23/24/25 (does Acquivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T.R45, T.R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33, R67, Xi; R3	7, Xn;R4820/21/22, Xn;R ı. Cat. 2, Muta. Cat. 3, T;F	R68/20/21/22) R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R80, R81
Does substance have breakdown products of concern?	No			
REFERENCES	· · · ·			
REPERENCES Environmental Health Criteria 231: Bentonite, kaolin and selected clay minerals ( ECHA C&L database	http://www.who.int/ipcs/publi https://echa.europa.eu/inform	cations/ehc/ehc_231.pdf	ventory-database	N-/-trisclidetails/116081
ECHA C&L database HSDB EFSA (2017)	http://toxnet.nlm.nih.gov/cgi-	bin/sis/search2/f?./temp/-	-NpciZu:1	
-1 OM (2011)	https://efsa.onlinelibrary.wile	y.com/ao/epdt/10.2903/j	.ersa.zu17.5096	

				Calcium chloride (CAS: 10043-52-4)
				Guidian dinorde (GAS. 10043-32-4)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?  Persistence				
Passes ready biodegradation test	See comment			The section of the se
Passes inherent biodegradation test				The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below)
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 davs Half life marine sediment ≥ 180 days Half life marine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days Half life in 501 ± 120 days	See comment			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below)
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes Yes (see comment)			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Calcium chloride will dissociate in the water environment to form calcium and chloride ions. These ions will remain in the environment as free ions or form stable inorganic or organic salts with other counter ions. As the ions do not degrade have considered as persistent for the purposes of this assessment.
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No (see comment)		SIDS (2002)	BCF studies are not directly relevant to inorganic substances such as calcium chloride. Calcium chloride will dissociate in the water environment to form calcium and chloride ions. Neither of these ions are considered to accumulate in the tissues of organisms (OECD SIDS, 2002)
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	Log Kow values are not applicable to metals/inorganics			Log Kow are not considered reliable estimates of the potential for bioaccumulation of inorganic substances such as calcium chloride. It will dissociate in the water environment to form calcium and chloride ions.
Transwer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
Loos are weight of evidence from the knowing uners indicate broadcamalabor unlikely?  Substance is chronically non-toxic in mammals  Molecular size ≥ 4.3mm  Molecular wighth ≥ 1100d/mol	above information			
Molecular weight 2 11 udg/mol Octanol solubility 2 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not binaccumulative				
substance is in treaccumulative if weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			Although neither BCF or log Kow data is available for this substance the available information for this compound indicates that it will not
Toxicity	NO			bioaccumulate.
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	320mg/l	SIDS (2002)	The limited chronic data available indicates that it is of low chronic toxicity to the species studied. The value of 320mg/l is the 21d EC16 for the investerate Dephnia magna. A chronic endpoint for the alga Selenastrum capticomutum indicates low toxicity with a 3d EC20 of 1000mg/l. This limited chronic data is supported by the available acute toxicity data which indicates low acute toxicit with effect concentrations noted at concentrations >1000mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised classification is available for calcium chloride. The classification indicates that it does not meet these criteria. Both calcium and chloride are essential components in animals. Daily intake of more than 1000mg/l is recommended for both ions (SIDS, 2002). They are also essential for plant file.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised classification is available for calcium chloride. The classification indicates that it does not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			The available data indicate that calcium chloride does not meet the criteria for chronic toxicity to aquatic organisms and impact on human health.
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	Yes (See comment)			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Calcium chloride will dissociate in the water environment to form calcium and chloride ions. These ions will remain in the environment as free ions or form stable inorganic or
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent	Yes (See comment) Yes (See comment)			orasnic salts with other counter ions. As the ions do not deorade have considered as cersistent for the ourocess of this assessment.
			0.05	BCF studies are not directly relevant to inorganic substances such as calcium chloride. Calcium chloride will dissociate in the water environment to form
Is bioconcentration factor ≥ 5000  If answer is ves. substance is very bioaccumulative	No		SIDS (2002)	calcium and chloride ions. Neither of these ions are considered to accumulate in the tissues of organisms (OECD SIDS, 2002)
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does Groundwater monitorin data show half life in croundwate ≥ 1 vear  Doe 3 % of groundwater samples show levels of the substance greater than the  Doe 3 % of groundwater samples show levels of the substance is prester than the  Doe 1 % of the show at least one sample where the substance is detected  show the LOO?  # answer to any question is YES, substance is persistent in groundwater	Not assessed Not assessed Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic,				
Substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic? Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	An EU harmonised classification is available for calcium chloride. Based on the classification calcium chloride does not meet this criteria
If answer to any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?	No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T.R.23/24/25, T+.R.26/27/28 (does not include Xn. R2: equivalent risk phrases z:Tr.839/23/24/25, T+.R.26/27/28, T.R.48/23/24/25 (does not include Xn. R2: (does not include Carc. Cat. 3, Xn.R40, Repr. Cat. 3, Xn.R62, Xn.R63)	not include R33, R67, Xi; R3: mutagenic Muta. Cat. 1, Muta	7, Xn;R4820/21 Cat. 2, Muta. C	/22, Xn;R68/20/21/22) cat. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?  REFERENCES	No			
OECD SIDS (2002) Calcium chloride ECHA C&L database	http://webnet.oecd.org/Hpv/L http://echa.europa.eu/informa	Whandler.axd?i ation-on-chemic	t=cb4247c6-7f28-4ca5-bff als/cl-inventory-database/-	69-115269556681 discidental-61013

				And 14 (44 (44 (44 (44 (44 (44 (44 (44 (44
		1:	ited data was overilable fo	Citric acid monohydrate (CAS: 5949-29-1)  v citric acid monohydrate and have therefore used information for the anhydrous form is citric acid (CAS: 77,92.0)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			r citric acid monohydrate and have therefore used information for the anhydrous form ie citric acid (CAS: 77-92-9)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence  Present ready kindercadation test	V		SIDS (2001)/EU	A number of studies were reported which indicated ready biodegradation with some studies noting 98% and 97% degradation. It is noted as readily
Passes ready biodegradation test	Yes		(2016)	biodegradable in the EU (2014) assessment report
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent	Yes		SIDS (2001)/EU (2016)	A number of studies were reported which indicated ready biodegradation.
If answer to either questions is NO, additional data on half life is required				
Half life marine water 2.60 davs Half life fresh or estuarine water 2.40 davs Half life marine sediment 2.180 days Half life marine sediment 2.180 days Half life fresh or estuarine sediment 2.120 days Half life in 501 2.120 days	See comment			No specific information was obtained on degradation half lives however as noted above the available data indicated ready biodegradation
If answer to any question is YES, substance is persistent If answer to all questions is NO. substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation  Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?  # answer to either question is YES, substance is bioaccumulative	No	0.000127	EU (2016)	No measured BCF data were located. An estimated BCF of 0.000127 was reported in the EU assessment based on a calculation using the log Kow of 3.76
If no BCF data, is log Kow ≥ 4.5?	No	-3.76	EU(2016)	This log Kow indicates it does not meet the criteria. This value is supported by a log Kow of -1.72 reported in the SIDS (2001) document.
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not considered due to			
Diese the weight of evidence from the following creen indicate ploaccumulation unititiety/epi c fortonically non-toxic in mammals  Molecular size 2 4.3 mm  Molecular size 3 4.3 mm  Cotland solubility 5.0002mm/ll  Feeling for the following following the control of the solubility 6.0002mm/ll  Feeling for evidence indicates be inaccumulation unlikely (i.e. YES answers)	not considered due to the above information			
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), DCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms \$ 0.01mg/l	No		SIDS (2001)	No chronic data was located. The lowest acute effect concentration was a 3d ECSO of 1.9mg/I noted in the EU/2016) assessment for the biocides directive. The later also notes that the effect of circ action p his one of the key effects on aquabilitie. An acute effect on investebrates of 3.4mg/I and of fish of 440mg/I were noted in the EU assessment. This is supported by acute toxicity data for invertebrates and fish in the range of 440-1535mg/I in the SIDS (2001) report. The available data indicate it is not expected to meet the criteria for chronic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database and SIDS (2001)	additive and also occurs naturally in plants and animals
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database and SIDS (2001)	An EU harmonised classification is not available for citric acid. A proposed classification noted in the EU (2016) assessment indicates that it does not meet these criteria. This is supported by available data in the EU assessment as well as the SIDS (2001) report. Citric acid is approved for use as a food additive and also occurs naturally in plants and animals
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days	No		SIDS (2001)/EU (2016)	No specific information was obtained on degradation half lives however the available data indicated ready biodegradation
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	0.000127	EU (2016)	No measured BCF data were located. An estimated BCF of $0.000127$ was reported in the EU assessment based on a calculation using the log Kow of $3.76$
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Do $\ge$ 5% of groundwater samples show levels of the substance greater than the LOQ? Do $\ge$ 15% of sites have at least one sample where the substance is detected	Not assessed			
above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database and SIDS (2001)	An EU harmonised classification is not available for ciriric acid. A proposed classification noted in the EU (2016) assessment indicates that it does not meet these criteria. This is supported by available data in the EU assessment as well as the SIDS (2001) report. Citric acid is approved for use as a food additive and also occurs naturally in plants and animals
If answer to any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?	No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
e cuivalent risk phrases: TR2024/25, Tx-R2027/26 (does not include X.n.f.) ** colorisation tick phrases TR2023/24/26, Tx-R2627/26, Tx-R462/27/26/26, Tx-R462/27/26, Tx-R462	s not include R33. R67. Xi: R:	37. Xn:R4820/21/ a. Cat. 2, Muta. C	22. Xn:R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60, R61
REFERENCES SIDS (2001) - Citric acid EU (2016) - Evaluation of active substances - Assessment Report	http://webnet.oecd.org/Hpv/ http://dissemination.echa.er	Ul/handler.axd?id uropa.eu/Biocides	=ff78c453-36c1-430d-90 /ActiveSubstances/1271-	(34-63e15899d24b) 02/1271-02. Assessment. Report pdf

				Citatio poid (CAS, 77.03.0)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Citric acid (CAS: 77-92-9)  Comments
Is substance persistent, bioaccumulative and toxic?	Coounie yes of No?			
Persistence Passes ready biodegradation test	Yes		SIDS (2001)/EU (2016)	A number of studies were reported which indicated ready biodegradation with some studies noting 98% and 97% degradation. It is noted as readily biodegradable in the EU (2014) assessment report
Passes inherent biodegradation test	Yes		SIDS (2001)/EU (2016)	A number of studies were reported which indicated ready biodegradation.
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required			(2010)	
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine adeliment ≥ 180 days Half life marine adeliment ≥ 180 days Half life in soil ≥ 120 days Half life in soil ≥ 120 days ### farswer for any question at VES, substance is pensistent	See comment			No specific information was obtained on degradation half lives however as noted above the available data indicated ready biodegradation
If answer to all questions is NO, substance is not persistent  Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?  ## answer to either question is YES, substance is bioaccumulative	No	0.000127	EU (2016)	No measured BCF data were located. An estimated BCF of 0.000127 was reported in the EU assessment based on a calculation using the log Kow of 3.76
If no BCF data, is log Kow ≥ 4.5?	No	-3.76	EU(2016)	This log Kow indicates it does not meet the criteria. This value is supported by a log Kow of -1.72 reported in the SIDS (2001) document.
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?  Substance is chronically non-toxic in mammals  Molecular size 2 4.3mm  Molecular size 2 4.3mm  Molecular weight 3 - 1000-brind  Colland subsidies 3 - 1000-brind  If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)  autobatrice is not bioaccumulative	Not considered due to the above information			
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No		SIDS (2001)	No chronic data was located. The lowest acute effect concentration was a 3d ECS0 of 1.9mg1 noted in the EU(2016) assessment for the biocides directive. The latter also notes that the effect of ciric acid on pH is one of the key effects on aqualic life. An acute effect on invertebrates of 34mg1 and of into 444mg1 were noted in the EU assessment. This is supported by acute toxicity data for invertebrates and fish in the range of 440-1535mg1 in the SDS (2001) report. The available data indicate it is not expected to meet the criteria for chronic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database and SIDS (2001)	An EU harmonised classification is not available for citric acid. A proposed classification noted in the EU (2016) assessment indicates that it does not meet these criteria. This is supported by available data in the EU assessment as well as the SIDS (2001) report. Citric acid is approved for use as a food additive and also occurs naturally in plants and animals
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database and SIDS (2001)	An EU harmonised classification is not available for citric acid. A proposed classification noted in the EU (2016) assessment indicates that it does not meet these criteria. This is supported by available data in the EU assessment as well as the SIDS (2001) report. Citric acid is approved for use as a food additive and also occurs naturally in plants and animals
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No		SIDS (2001)/EU (2016)	No specific information was obtained on degradation half lives however the available data indicated ready biodegradation
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	0.000127	EU (2016)	No measured BCF data were located. An estimated BCF of 0.000127 was reported in the EU assessment based on a calculation using the log Kow of 3.76
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater armonitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?  Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed Not assessed Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic,				
Substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				An EU harmonised classification is not available for citric acid. A proposed classification noted in the EU (2016) assessment indicates that it does not
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous	No		ECHA C&L database and SIDS (2001)	An EU namonised dissistance in and available for ortic and. A proposed classification noted in the EU (2016) assessment indicates that it does not meet these orients. This is supported by available data in the EU assessment as well as the SIOS (2001) report. Citric acid is approved for use as a food additive and also occurs naturally in plants and animals
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T.R23/24/25, T+R26/27/28 (does not include Xn. R2* equivalent risk phrases T.R39/23/24/25, T+R26/27/28, T.R48/23/24/25 (does not include Carc. Cat. 3, Xn.R40, Repr. Cat. 3, Xn.R62, Xn.R63) (does not include Carc. Cat. 3, Xn.R40, Repr. Cat. 3, Xn.R62, Xn.R63)	not include R33, R67, Xi; R3	37, Xn;R4820/21/ a. Cat. 2, Muta. C	22, <i>Xn;R68/20/21/22</i> ) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES SIDS (2001) - Citric acid	http://webnet.oecd.org/Hpv/	Ul/handler.axd?id	=ff78c453-36c1-430d-90	34-53e15899424b
EU (2016) - Evaluation of active substances - Assessment Report	http://dissemination.echa.eu	ropa.eu/Biocides	/ActiveSubstances/1271-	00 to

				Crystalline quartz, silica (CAS: 14808-60-7)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegradation test	See comment			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below).
Passes inherent biodegradation test  If answer to either auestion is YES, substance is not persistent  If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days	See comment			
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days				The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below).
Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	Yes		Environment Canada (2013)	The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Metals and inorganics such as crystalline quartz, silica are inherently persistent. An assessment by Environment Canada noted that crystalline quartz, silica is persistent.
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (see comment)		Environment Canada (2013)	BCF studies are not directly relevant to inorganic substancees such as crystallkine quartz. No BCF data was located. Environment Canada (2013) noted that it is not expected to bioaccumulate in aquatic organisms as it has limited potential for uptake, eg through gills or the gut.
Does field data show evidence for biomagnification? If answer to either question is YES, substance is bioaccumulative				
	Log Kow values are not		Environment Canada	
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	applicable to inorganics		(2013)	Environment Canada (2013) notes that the log Kow is not applicable for crystalline quartz, silica
The answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not considered due to			
unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm	the above data			
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative if weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),				
BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes No			
Toxicity				
			Environment Canada	No aquatic toxicity data was located however the Environment Canada assessment noted that it was not inherently toxic to aquatic organisms. Data for a
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No		(2013)	similar compound was reported which showed very low acute toxicity with effect concentrations of >10000mg/l being reported. This acute data supports the indication that it is not expected to be of high chronic toxicity. Limited uptake due to its crystalline nature and low solubility also supports the fact it is likely to be of low chronic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database, Environment Canada,	RET and REZ. These proposed classifications however are in relation to effects on lungs following inmatation rather than impacts ansing as a result of
,			NICNAS, CICADS	oral consumption. The adverse effects as a result of inhalation are documented in a number of reviews including that by Environment Canada, NICNAS and CICADS
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		Environment Canada,	Crystalline quartz, silica has not been formally classified under C&L however information has been submitted to the C&L database. This indicates Carc 1A/Carc 2. These proposed classifications relate to effects on lungs following inhalation rather than impacts arising as a result of oral consumption. The adverse effects as a result of inhalation are documented in a number of reviews including that by Environment Canada, NICNAS and CICADS
If answer to any question is YES, substance is toxic				•
If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?	<u> </u>			
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days Half life in marine, fresh or estuarine sediment ≥ 180 days	No		Environment Canada (2013)	The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Metals and inorganics such as crystalline quartz, silica are inherently persistent. An assessment by Environment Canada noted that crystalline quartz, silica is persistent.
Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent			(2013)	эсил во музивше цианд, эши а е инивенну резізмент. Эт возвознент бу Етічтингент Санада пиед шат сузивше цианд, эши во резізмент.
			Environment Canada	BCF studies are not directly relevant to inorganic substancees such as crystallkine quartz. No BCF data was located. Environment Canada (2013) noted
Is bioconcentration factor ≥ 5000	No data		(2013)	that it is not expected to bioaccumulate in aquatic organisms as it has limited potential for uptake, eg through gills or the gut.
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?	No			
Does aroundwater monitorina data show half life in aroundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed  Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous				
Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?			50W	
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		Environment Canada,	Crystalline quartz, silice has not been formally classified under CLP however information has been submitted to the CLP database. This indicates Carc 1.A/Carc 2 however this was in relation to effects on lungs following inhalation rather than impacts arising as a result of oral consumption. Mutagenic effects have not been reported in reviews that have been undertaken by Environment Canada, NICNAS and CICADS.
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?	No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T.R23/24/25, T+R26/27/28 (does not include Xn: R2* equivalent risk phrases :TR39/23/24/25, T+R26/27/28, T;R48/23/24/25 (does not include Carc. Cat. 1, Carc. Cat. 2, T;R48/23/24/25 (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R42, Xn;R63, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63, Xn;R64, Xn;	not include R33, R67, Xi; R3	7, Xn;R4820/21 a. Cat. 2, Muta. (	/22, Xn;R68/20/21/22) Cat. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2., R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA CLP database Environment Coando (2012)	https://echa.europa.eu/infon	nation-on-chem	cals/cl-inventory-database	0/-/dischi/details/54394
Environment Canada (2013) NICNAS CICAD (2000)	http://webnet.oecd.org/Hpv/ https://www.nicnas.gov.au/o http://www.who.int/ipcs/publ	hemical-informa	tion/imap-assessments/ima	lat-9b1351924e57 ap-group-assessment-report?assessment_id=1120
. "				

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Diammonium peroxidisulphate (CAS: 7727-54-0)
COMMENT HORFIPZARDOUS	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test  Passes inherent biodegradation test				The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below).
If answer to either question is YES, substance is not persistent				
If answer to both questions is NO, additional data on half life is required  Half life marine water ≥ 60 davs				
				The available information indicates that hydrolysis is the key degradation route for diammonium peroxidisulphate. Hydrolysis half lives in the order of 20-
Half life fresh or estuarine water ≥ 40 days	No	20-210hours	SIDS (2005)	210hours has been reported at different pH. In water it will primarily be in the form of the ions, ie ammonium and sulphate ions following hydrolysis.
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days If answer to any question is YES, substance is persistent If answer to all auestions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
				The persistence criteria are not directly applicable to metals /inorganics such as diammonium peroxidisulphate and were developed
Is substance persistent?	No			principally for organic substances. The available data indicates that it will hydrolyse to form ammonium and sulphate ions . Ammonium ions will mineralise to nitrite.
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (See comment)		SIDS (2005)	BCF data are not directly applicable to inorganic substances such as diammonium peroxidisulphate. No BCF information was available however based on the nature of the substance and it will form ions in water it is not anticipated to bioaccumulate (SIDS 2005)
Does field data show evidence for biomagnification?  If answer to either auestion is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	See comment			As this is an inorqunic substance a log Kow is not applicable
Does the weight of evidence from the following criteria indicate bioaccumulation	Not considered due to			
unlikelv? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm	the above data			
Molecular size ≥ 4.3mm Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No		SIDS (2005)	No chronic NOEC data was located however the acute toxicity data for fish, invertebrates and fish indicate low toxicity with acute effects to fish in the range of 76-323mg/l, invertebrates 120-391mg/l and algae 84mg/l. This indicates not expected to meet criteria for toxicity
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA CLP database	A harmonised classification shows that it does not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for	No			A harmonised classification shows that it does not meet these criteria
reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic	NO		ECHA CLF database	A narmonised classification shows that it does not meet these citienal
If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
		00.040	OIDO (OOOF)	The available information indicates that hydrolysis is the key degradation route for diammonium peroxidisulphate. Hydrolysis half lives in the order of 20-
Half life in marine, fresh or estuarine water ≥ 60 days	No	20-210hours	SIDS (2005)	210hours has been reported at different pH. In water it will primarily be in the form of the ions, ie ammonium and sulphate ions following hydrolysis.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No		SIDS (2005)	BCF data are not directly applicable to inorganic substances such as diammonium peroxidisulphate. No BCF information was available however based on the nature of the substance and it will form ions in water it is not anticipated to bioaccumulate (SIDS 2005)
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ?  Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed Not assessed			
above the LOQ?  If answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?	Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic,	INUI GOSESSEU			
Substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	A harmonised classification shows that it does not meet the criteria for mutagenicity
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No	_		
Dees substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product)	No			
# equivalent risk phrases: T.R.23/24/25, T+R.26/27/28 (does not include Xn; R2* equivalent risk phrases T.R.39/23/24/25, T+R.26/27/28, T.R.48/23/24/25 (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63) (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33 R67 Yi-R	37, Xn;R4820/21/2 a. Cat. 2, Muta. Ca	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
REFERENCES SIDS (2005)	http://webnet.oecd.org/Hpv.	Ul/handler.axd?id:	=0040c6d0-05b7-4769-9 als/cl-inventory-database	W71-12ade872183b 4-45e0ikletnish 91227
CHA CLP database	mpo./cond.cd/opd.cd/mio			

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			D-limonene (CAS: 5989-27-5)
Samuel Control of the	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	Yes		CICAD/ECHA-CHEM	A study was reported in the CICAD report which indicated 41-98% degradation in 14days in aerobic environment (OECD 301C). A study in ECHA CHEM noted 80% degradation after 28days.
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent				
If answer to both questions is NO. additional data on half life is required				
Half life marine water ≥ 60 days	No data (see comment)			No degradation half life data was located however as noted above several studies were reported as showing ready biodegradability
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days				
Half life fresh or estuarine sediment ≥ 120 davs Half life in soil ≥ 120 davs				
If answer to any question is YES, substance is persistent if answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	246-262	CICAD	No experimental BCF data was located. A BCF of 246 - 262, estimated based on the Log Kow data, was noted in the CICAD report. ECHA-CHEM noted
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				BCF of 377 and 908 based on QSAR.
If no BCF data, is log Kow ≥ 4.5?	No	4.23	CICAD	A calculated log Kow of 4.23 was noted in the CICAD report
If answer is YES, substance is bioaccumulative				
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?	Not assessed due to the above data			
Substance is chronically non-toxic in mammals  Molecular size ≥ 4.3nm				
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			No measured BCF data was available however estimated values, ranging from 246 - 908 indicated that it did not meet the criteria.
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	0.15mg/l	NICNAS	A modelled chronic value of 0.15mg/l was noted for the invertebrate Daphnia magna. A measured NOEC of 0.08mg/l was noted on ECHA CHEM for the invertebrate Daphnia magna
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	A harmonised CLP classification is available for d-limonene. This indicates that it does not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	A harmonised CLP classification is available for d-limonene. This indicates that it does not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No (see comment)		CICAD/ECHA CHEM	No degradation half life data was located however as noted above several studies were reported as showing ready biodegradability
Half life in marine, fresh or estuarine water ≥ 00 days	No (see confinent)		CICAD/ECHA-CHEW	Two degraduation half life data was located nowever as noted above several studies were reported as showing ready blodegraduality
Half life in soil ≥ 180 davs If answer to any question is YES, substance is very persistent				
		040.000	01040	No experimental BCF data was located. A BCF of 246 - 262 was noted in the CICAD report which had been estimated based on the log Kow data.
Is bioconcentration factor ≥ 5000  If answer is ves. substance is very bioaccumulative	No	246-262	CICAD	ECHA-CHEM noted BCF of 377 and 908 based on QSAR.
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed			
above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, binaccumulative AND trying	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	A harmonised CLP classification is available for d-limonene. This indicates that it does not meet these criteria
If answer to any question is YES, substance is very toxic and hazardous	<u> </u>			
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T:R23/24/25, T+:R26/27/28 (does not include Xn: R2 equivalent risk phrases T:R39/23/24/25, T+:R26/27/28, T:R48/23/24/25 (does not include Xn: R2 equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T;R45, T;R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33, R67, Xi; R3	37, Xn;R4820/21/ a. Cat. 2, Muta. C	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R80, R61
Does substance have breakdown products of concern?	No			
REFERENCES CICAD CICAD	http://www.who.int/ipcs/publ			The state of the s
ECHA-CHEM EU C&L database NICNAS (2001)	https://echa.europa.eu/regis https://echa.europa.eu/inforn https://www.nicnas.gov.au/	mation-on-chemi	cals/cl-inventory-database	/-/discli/details/66519
	mys//www.nlcilds.gov.au/	uatarasSBtS/W0	a addition (34020) FEU2	- IIIInana na

				Isopropanol (CAS: 67-63-0)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value	Reference	Comments
	assume yes or no?	value	Keterence	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence	Ven		EU (2015)	Isopropanol was noted to be readily biodegradable based on an OECD 301C study. This is supported by data in the SIDS report which also indicated
Passes ready biodegradation test	Yes		EU (2015)	readily biodegraded with 72-78% degradation noted over 20days.
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent				
If answer to both auestions is NO. additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days	Not considered due to the above			
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days If answer to any question is YES, substance is persistent				
If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes No			
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	No	1	SIDS	A BCF of 1 was estimated based on a log Kow of 0.05. This indicates that it does not meet the criteria for accumulation
If no BCF data, is log Kow ≥ 4.5?	No	0.05	SIDS/ EU(2015)	A log Kow of 0.05 was calculated which indicates the criteria for bioaccumulation are not met
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not considered due to			
unlikely? Substance is chronically non-toxic in mammals	the above			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	30mg/l	SIDS/EU 2015	A chronic budy was reported for Dephila mappa which gave a 21day NOEC of 30mg). This indicates it does not meet the criteria for chronic buildity. No other chronic data was boated however the results of vivories acute sufficies indicates acute effects to algae, invertebrates and fish in the range of 1400 > 910000mg). This supports the chronic data in indicating it does not meet the criteria.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised C&L classification is available for isopropanol. The classification shows the criteria are not met
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised C&L classification is available for isopropanol. The classification shows the criteria are not met
If answer to any question is YES. substance is toxic If answer to all questions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?	No			
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No		EU (2015)	Half life degradation data is not available however reports of ready biodegradability studies indicate that isopropanol is readily biodegradable
Half life in marine. fresh or estuarine sediment ≥ 180 davs Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	1	SIDS	A BCF of 1 was estimated based on a log Kow of 0.05. This indicates that it does not meet the criteria for accumulation
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Does froundwater monitoring data show hair life in groundwater ≥ 1 year Do≥5% of groundwater samples show levels of the substance greater than the LOQ?	Not assessed Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed			
If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic,				
substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	An EU harmonised C&L classification is available for isopropanol. The classification shows the criteria are not met
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic)  Is substance very toxic?	Yes No			
	NU			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T.R23/24/25. T+.R26/27/28 (does not include Xn: R2* equivalent risk phrases T:R39/23/24/25, T+.R26/27/28, T;R48/23/24/25 (does Aequivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T;R45, T;R49, (does not include Carc. Cat. 3, Xn:R40, Repr. Cat. 3, Xn:R62, Xn:R63)	not include R33 R67 Xi: R3	7, Xn;R4820/21. . Cat. 2, Muta. (	/22, Xn;R68/20/21/22) Cat. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database SIDS	http://echa.europa.eu/informa	ation-on-chemic	:als/cl-inventory-database/-	/disclidetails/22308
SIDS ECHA-CHEM EU Assessment report (2015)	http://webnet.oecd.org/Hpv/L https://echa.europa.eu/brief-r			M23*181 10000030
				01/1355-01 Assessment Report odf
EU Biocides	http://dissemination.echa.eur	ropa.eu/Biocides	s/ActiveSubstances/1355-0	01/1355-01 Assessment Report.pdf nices?p.p.lid=echarevbiocides WAR echarevbiocidesportiet&p.p.lifecycle=1&p.p.state=normal&p.p.mode=view&p.p.col.id=column-

1			Maltadaytrin (CAS, 0050 30 C)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent		Maltodextrin (CAS: 9050-36-6)
	data / Borderline / assume yes or no?	Value Reference	Comments
Is substance persistent, bioaccumulative and toxic?			
Persistence			
Passes ready biodegradation test	No data (see summary comment)		
Passes inherent biodegradation test			
If answer to either question is YES, substance is not persistent If answer to both auestions is NO. additional data on half life is required			
Half life marine water ≥ 60 days	No data (see summary		
Half life fresh or estuarine water ≥ 40 days	comment)		
Half life fresh or estuarine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days			
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent			
Is sufficient data available? (if not assume substance is persistent)	Yes		
Is substance persistent?	No (See comment)		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes
			that degradation data was not provided but was not required.
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (see summary comment)		No specific BCF data was located for this substance.
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	comment)		
	No data (see summary		No. of the Control of
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	comment)		No specific log Kow data was located for this substance
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed		
unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm			
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l			
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative			
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained			
Is sufficient data available? (if not assume substance bioaccumulates)	Yes		No. 200 information was bound on the black completion of making in the contract of the contrac
Is substance bioaccumulative?	No		No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Toxicity			No chronic aquatic toxicity data was located. The industry submissions to the C&L database indicate it does not meet the criteria for aquatic toxicity.
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No (see comment)	ECHA C&L database	dquatic toxicity data was noted as not required for the EFSA assessment
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No (see comment)	ECHA C&L database	A formal CLP classification has not been undertaken. The industry data submissions indicate it does not meet the criteria. It is individued as a food additive and in comertical supplementations and only with the comment of the properties of the meet the criterial and additive and in comercial supplementations and comercial supplementations and commentation of the commentation of the criteria supplementation of
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No (see comment)	ECHA C&L database	
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic			
Is sufficient data available? (if not assume substance is toxic)	Yes		
Is substance toxic?	No		Data to assess against the specified criteria are limited. However available data and its widespread use as a food additive indicates unlikely to meet criteria for toxicity. In addition a review by EFSA noted that based on its widespread use in food products etc it was considered to be
is substance to let			of low toxicological concern. In addition a SIDS OECD assessment indicated that further consideration was not required due to the intrinsic properties of the substance indicating a low hazard
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No		Limited data is available on the persistence, pooccumulation and toxicity or manicoextrin nowever the weight or evidence supports the fact if would not meet the criteria for PBT. It has been considered by the OECD in the SIDS report but has been deemed to be of low priority further consideration due to its intrinsic properties noting it is of low hazard (SIDS 2009). The EFSA assessment also noted it was considered to be low toxicological concern. This is also supported by its widespread use as a food additive. Maltodextrin is listed on Annex IV of REACH. The latter identifies substances exempted from REACH as they are considered to cause minimum risk because of their intrinsic
Does substance pose an equivalent level of concern?			neanestic.
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?			
	No (See comment)		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradatio in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No (See comment)		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for
Very persistent and very bloaccumulative? Half life in marine, fresh or estuarine water ≥ 60 days	No (See comment)		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed file fate in the environment. The EFSA report notes that degradation data was not provided but was not reported by the was not provided by the w
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent	No data (see summary		Mahodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for mahodextrin. It is noted to be biodegradable in the EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of mahodextrin. The weight of evidence however indicates that mahodextrin is untilitiely to
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days	,		Mallodestrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for mallodestrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative	No data (see summary		Mahodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for mahodextrin. It is noted to be biodegradable in the EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of mahodextrin. The weight of evidence however indicates that mahodextrin is untilitiely to
Very persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine. fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bloconcentration factor ≥ 5000	No data (see summary comment)		Malkodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malkodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of malkodextrin. The weight of evidence however indicates that malkodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soi ≥ 180 days  Half life in soi ≥ 180 days  if answer in yes, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Its substance very persistent and very bioaccumulative?  Does groundwater persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Doe 5% of groundwater samples have levels of the substance greater than the	No data (see summary comment)  No  No		Malkodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malkodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of malkodextrin. The weight of evidence however indicates that malkodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does soundwater monitoring data show half life in groundwater ≥ 1 year  Doe 5 % of groundwater samples show levels of the substance greater than the  LOQ?	No data (see summary comment)		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradatio in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # fanswer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Doe 3 15% of signs have all least one sample where the substance is detected above the LOQ?  # answer to any question is YES, substance is persistent in groundwater	No data (see summary comment)  No  Not assessed  Not assessed  Not assessed		Malkodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malkodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of malkodextrin. The weight of evidence however indicates that malkodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does does undwater moritoring data show half life in groundwater ≥ 1 year  Doe 2 5% of groundwater samples show levels of the substance greater than the  Doe 3 15% of sits have at least one sample where the substance is detected showe the LOO?  # answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?	No data (see summary comment)  No  No  Not assessed  Not assessed		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradatio in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # fanswer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Doe 3 15% of signs have all least one sample where the substance is detected above the LOQ?  # answer to any question is YES, substance is persistent in groundwater	No data (see summary comment)  No  Not assessed  Not assessed  Not assessed		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradatio in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in in sai ≥ 180 days  Half life in sai ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Doe ≥ 5% of groundwater samples show levels of the substance greater than the  LOQ?  Do ≥ 15% of sites have at least one sample where the substance is detected  shove the LOQ?  # substance is persistent in groundwater, bioaccumulative AND toxic,  substance is persistent in groundwater, bioaccumulative AND toxic,  substance is parsistent in groundwater, bioaccumulative AND toxic,	No data (see summary comment)  No  No  Not assessed  Not assessed  Not assessed  Not assessed		Maltodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for maltodextrin. It is noted to be biodegradatio in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the  Do ≥ 5% of groundwater samples show levels of the substance data show the LOO?  # answer to any question is YES, substance is persistent in groundwater is substance in persistent in groundwater?  # substance is persistent in groundwater, bioaccumulative AND toxic, substance so hazardous  Does substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance hutgerio (Muta 1A, 18.2) or have no determinable threshold for	No data (see summary comment)  No  No  Not assessed  Not assessed  Not assessed  Not assessed	ECHA C&L database/EFSA	Malbodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malbodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that malbodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for malbodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicily to human health as indicated by its use as a food additive, in cosmetics and medicinal
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is ves, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 year  Doe 5% of groundwater samples show levels of the substance greater than the LOQ?  So = 5% of Signovater samples show levels of the substance is detected  Answer to any question is YES, substance is persistent in groundwater lies substance persistent in groundwater?  If substance is parsistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?	No data (see summary comment)  No  No  Not assessed  Not assessed  Not assessed  Not assessed		Mallodestrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for mallodestrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodestrin. The weight of evidence however indicates that maltodestrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for maltodestrin. The industry submissions to the database indicate it would not meet the criteria. This is
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer is ves. substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves. substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does sroundwater monitoring data show half life in groundwater ≥ 1 year  Doe 5 % of groundwater samples show levels of the substance greater than the LOQ?  # answer is any question is YES, substance is persistent in groundwater is substance persistent in groundwater is substance persistent in groundwater is substance persistent in groundwater  Is substance persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance en pose a specific risk to groundwater?  Is substance en pose a specific risk to groundwater?  Is substance wrut position if YES, substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic)	No data (see summary comment)  No  No  Not assessed  Not assessed  Not assessed  Not assessed	database/EFSA	Mallodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for mallodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summany comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summany comment).  See above comments  A tornal CLP classification is not available for maltodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicity to human health as indicated by its use as a food additive, in cosmetics and medicinal products.
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days  It answer to a yeustonic № VES, substance is very persistent  Its bioconcentration factor ≥ 5000  If answer is ves, substance is very bioaccumulative  Its substance every persistent and very bioaccumulative?  Does sroundwater monitoring data show half life in groundwater ≥ 1 year  Does zoundwater monitoring data show half life in groundwater ≥ 1 year  Does Sy for disting have at least one sample where the substance is detected  A marwer to any question is VES, substance is persistent in groundwater  If substance is paraidous  Does substance pose a specific risk to groundwater?  Its substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse fields on human health  If answer to any question is YES, substance is very toxic and hazardous	No data (see summary comment)  No  No  Not assessed  Not assessed  Not assessed  Not assessed	database/EFSA	Malbodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malbodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that malbodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for malbodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicily to human health as indicated by its use as a food additive, in cosmetics and medicinal
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days I answer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does coundwater monitoring data show half life in groundwater ≥ 1 year Doe 25% of groundwater samples show levels of the substance greater than the LOQ?  For the LOQ?  If answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater is substance persistent in groundwater?  Is substance is presistent in groundwater?  Is substance persistent in groundwater?  Is substance is persistent in groundwater?  Is substance en pose a specific risk to groundwater?  Is substance with groundwater in the groundwater?  Is substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (If not assume substance is very toxic and hazardous is sufficient data available? (If not assume substance is very toxic)	No data (see summary comment)  No  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed	database/EFSA	Malbodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malbodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment).  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for malbodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicity to human health as indicated by its use as a lood additive, in cosmetics and medicinal produces.
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does sroundwater monitioring data show half life in groundwater ≥ 1 year Doe ≥ 5% of groundwater samples show half life in groundwater ≥ 1 year Doe ≥ 5% of sites have at least one sample where the substance is detected above the LOQ?  If answer in any question is YES, substance is persistent in groundwater is aubstance persistent in groundwater?  If answer any question is YES, substance is persistent in groundwater is aubstance persistent in groundwater.  Is substance persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific frisk to groundwater?  Is substance persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Is substance multispenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous is substance very toxic?	No data (see summary comment)  No  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed	database/EFSA	Malbodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malbodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment).  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that malbodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for malbodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicity to human health as indicated by its use as a lood additive, in cosmetics and medicinal produces.
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days I answer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  It substance is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does arubatinace poses a specific risk to groundwater?  Does arubatinace poses a specific risk to groundwater?  Does arubatinace poses a specific risk to groundwater? ≥ 1 year Doe ≥ 5% of groundwater samples show levels of the substance greater than the LOO? Doe 5 substance persistent in groundwater?  If substance is persistent in groundwater?  If substance is persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic, substance life hazardous Does substance very toxic?  Is substance nutsgenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous Is substance wery toxic?  Is substance wery toxic?  Is substance hazardous, if so, state on what basis  ### substance hazardous, if so, state on what basis  ##################################	No data (see summary comment)  No  No  Not assessed  Not assessed	database/EFSA (2013)	Malbodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malbodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment).  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for maltodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicity to human health as indicated by its use as a lood additive, in cosmetics and medicinal products.  Industry submissions to the CLP database database do not indicate it will meet the criteria for mutagenicity. In addition the weight of evidence that maltodextrin is of low hazard suspects it does not meet the criteria for mutagenicity (see comments in final summary section).  Limited specific data is available to assess maltodextrin against the specified criteria. Maltodextrin however is listed on Annex IV of REACH. These are substances exempted from REACH as they are considered to cause minimum risk because of their intrinsic properties. In addition a SUS assessment on maltodextrin concluded that it is of low priority due to its intrinsic properties indicating low hazard. The weight of evidence therefore indicates that it would not be determined as flazardous.
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is ves, substance is very bioaccumulative  Is substance pose a specific risk to groundwater?  Does sroundwater monitoring data show half life in groundwater ≥ 1 year  Doe ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?  Does substance pose a specific risk to groundwater ≥ 1 year  Doe ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  Is substance persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.  Is substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  Is substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  Is substance hazardous  Is substance was pecific risk to groundwater?  Is substance was persistent in groundwater in the persistent in groundwater?  Is substance was persistent in groundwater?  Is substance hazardous to groundwater?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  ### equivalent risk phrases: TR 23/24/25, TR 28/27/28 (foxes not include Xix; RZ;  #### equivalent risk phrases: TR 23/24/25, TR 28/27/28, TR 48/23/24/25 (foxes	No data (see summary comment)  No  No  Not assessed  Not assessed	database/EFSA (2013)	Malbodextrin is a polysaccharide that is produced as a result of the degradation of starch. No specific degradation half life data was located for malbodextrin. It is noted to be biodegradable in the EFSA report (2013) which reviewed its fate in the environment. The EFSA report notes that degradation data was not provided but was not required. The weight of evidence indicates it has been identified as low hazard overall (See overall summary comment below)  No specific information was located on the bioaccumulation of maltodextrin. The weight of evidence however indicates that maltodextrin is unlikely to meet these criteria based on the fact it is considered low hazard (see final summary comment).  See above comments  A formal CLP classification is not available for maltodextrin. The industry submissions to the database indicate it would not meet the criteria. This is supported by statements in the EFSA report that it is of low toxicity to human health as indicated by its use as a tood additive, in cosmetics and medicinal products.  Industry submissions to the CLP database database do not indicate it will meet the criteria for mutagenicity. In addition the weight of evidence that maltodextrin is of low hazard suspects it does not meet the criteria for mutagenicity (see comments in final summary section)  Limited specific data is available to assess maltodextrin against the specified criteria. Maltodextrin however is listed on Annex IV of REACH. These are substances exempted from REACH as they are considered to cause minimum risk because of their intrinsic properties. In addition a SUS assessment on maltodextrin concluded that it is of low priority due to its intrinsic properties indicating low hazard. The weight of evidence therefore indicates that it would not be determined as Hazardous.

EFSA (2013) http://www.efsa.europa.eu/sites/default/files/ncientific\_output/files/main\_documents/0007.edf
100909 http://webnet.oed.org/he/Uthandler.ast/76/55/57/82/2as4-46/2-809-06458156/20
ECHA C&L database
100908 http://webnet.oed.org/he/Uthandler.ast/76/55/57/82/2as4-46/2-809-06458156/20
ECHA C&L database

				Methanol (CAS: 67-56-1)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?	assume yes or no?			
Persistence				
Passes ready biodegradation test	Yes	95% degradation over 20days	SIDS (2004)	The available data indicate that methanol is readily biodegradable. A study reported 95% degradation over 20days and 76-82% degradation after 5 days
Passes inherent biodegradation test				
If answer to either question is YES, substance is not persistent If answer to both auestions is NO. additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine ediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days If answer to any question is VES, substance is persistent If answer to languestion is IN Os. substance is not persistent If answer to all questions is NO, substance is not persistent	No data (See comment)			No data was located on degradation half lives however the data on ready biodegradability indicated that it was readily biodegradable.
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes No			
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?  If answer to either auestion is YES. substance is bioaccumulative	No	<10	SIDS (2004)	BCF values for two fish species, ie Leuciscus idus and Cyprinus carpio indicated that the BCF was below 10.
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	No	-0.82	SIDS (2004)	The log Kow for methanol was reported to be in the range of -0.82 to 0.64
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals Molecular size 2 4-3 mm Molecular size 2 4-3 mm Molecular size 1 100 mm Octano solubility 5 0.002 mm Octano solubility 5 0.002 mm Weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative Weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),	Not assessed due to the above data			
BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No (see comment)		SIDS (2004)	No chronic toxicity data was located however acute data for algae, invertebrate and fish indicated low acute toxicity to the species studied with effect concentrations in the range of 20100mg/l>10000mg/l. This low acute toxicity indicates it is not likely to meet the criteria for chronic toxicity
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		EU C&L database	An EU harmonised classification is available for methanol which indicates that it does not meet the criteria for long term toxicity
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		EU C&L database	An EU harmonised classification is available for methanol which indicates that it does not meet the criteria for CMR
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No data (See comment)		SIDS (2004)	No data was located on degradation half lives however the data on ready biodegradability indicated that it was readily biodegradable.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent			(,	
Is bioconcentration factor ≥ 5000  If answer is ves. substance is very bioaccumulative	No	<10	SIDS (2004)	BCF values for two fish species, ie Leuciscus idus and Cyprinus carpio indicated that the BCF was below 10.
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic,				
substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic? Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		EU C&L database	An EU harmonised classification is available for methanol which indicates that it does not meet the criteria
If answer to any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic)  Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product)				
# equivalent risk phrases: T.R.23/24/25, T.+R.26/27/26 (does not include Xnr. & *equivalent risk phrases : T.R.32/24/25, TR.26/27/26, T.R.26/24/26 (does not include that should be considered to the constraint of the constrai	not include R33, R67, Xi; F	R37, Xn;R4820/21/22 tta. Cat. 2, Muta. Cat.	. Xn;R68/20/21/22) 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
REFERENCES EU C&L database OECD SIDS (2004)	https://echa.europa.eu/info http://webnet.oecd.org/Hpv	ormation-on-chemical v/UVSIDS_Details.asp	s/cl-inventory-database px?id=39B5D34A-2F5I	0.4053-8000-E4078-33EE89

				Debries 4.0 others dist) a both or body of the control of the cont
			F	Poly(oxy-1,2-ethanediyl), a-butyl-w-hydroxy (CAS: 9004-77-7) Polyethylene glycol monobutyl ether
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Polyethylene glycol monobutyl ether
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence		68 - 76%		Three studies were reported in the ECHA-CHEM dataset. These indicated 68 - 76% degradation after 28days exposure which indicates ready
Passes ready biodegradation test	Yes	biodegradation	ECHA-CHEM	biodegradability
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent				
If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days	See comment			Degradation half life data was not located for this substance. However data noted in the SDS report for a substance stated to have similar properties indicated that it was biodegradable although no degradation half lives were noted. Other similar compounds in the SIDS report were noted as readily biodegraded.
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			-
Is substance persistent?	No			The available data indicated it is readily biodegradable. In addition weight of evidence for similar substances indicate it does not meet the criteria for persistence.
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	No data (see comment)		ECHA-CHEM	No BCF data was located for this substance
If no BCF data, is log Kow ≥ 4.5?	No	0.436	ECHA-CHEM	A log Kow was noted for tetraethylene glycol butyl ether (TetraBE) in the SIDS report. This was noted to have similar properties to the substance being assessed. The low Kow was -0.26 which indicates it does not bioaccumulate.
If answer is YES, substance is bioaccumulative				addeddd. The off for the date of the date of the debug date.
Does the weight of evidence from the following criteria indicate bioaccumulation unlikelv?  Substance is chronically non-toxic in mammals  Molecular wise ≥ 4.3mm  Molecular wise 1 × 1100µmol	Not assessed due to the above data			
Octanol solubility s 0.002mmol/l if weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative if weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained.				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			Limited data is available on the potential for this substance to bioaccumulate. The limited data available indicate that it does not meet the
Is substance bioaccumulative?	No			Limited data is available on the potential for this substance to bioaccumulate. The limited data available indicate that it does not meet the criteria for bioaccumulation.
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No (see comment)		ECHA CHEM/SIDS 2002	No chronic aquatic toxicity data was located for this substance. The available acute toxicity data indicated that it was of low acute boxicity to the species studied with effect concentrations reported in the range of 310 - >2000mgf for the aligae, inventorize and first species studied (ECHA-CHEM). Although no chronic data is available the acute toxicity data indicates unlikely to meet the criteria for toxicity. This low toxicity was supported by data in the SIDS 2002 report.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No (see comment)		ECHA CLP database	A harmonised classification is not available for this substance. Industry data submissions indicate that it does not meet these criteria. In addition data included in the SIDS 2002 report indicate it would not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No (see comment)		ECHA CLP database	A harmonised classification is not available for this substance. Industry data submissions indicate that it does not meet these criteria. In addition data included in the SIDS 2002 report indicate it would not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No (see comment)			Limited data is available on the toxicity of this substance however based on the weight of evidence from the data located it is not expected to meet the criteria for Toxicity
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No (see comment)			The available data indicated it is readily biodegradable. In addition weight of evidence for similar substances indicate it does not meet the criteria for persistence. The limited data available indicated that it did not meet the criteria for P which indicates it will not meet the criteria for vP
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No (see comment)			No BCF or log Kow data was located for this substance. A log Kow was noted for a similar substance, ie tetraethylene glycol butyl ether (TetraEE) in the SDS report. The low Kow was -0.26. The limited data available indicated that it did not meet the criteria for B which indicates it will not meet the criteria for V8
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic,				
substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No (see comment)		ECHA CLP database	A harmonised classification is not available for this substance. Industry data submissions indicate that it does not meet these criteria. The data reviewed in the SIDS 2002 report indicate it did not meet the criteria
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is verv toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product)	No			
# equivalent risk phrases: T.R23/24/25, T+R26/27/28 (does not include Xn; R2* * equivalent risk phrases T:R39/23/24/25, T+R26/27/28, T;R48/23/24/25 (does * A equivalent risk phrases carinogenic Carc. Cat. 1, Carc. Cat. 2, T*R45, T*R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33, R67, Xi; R	137, Xn;R4820/21/2 ta. Cat. 2, Muta. Ca	22, <i>Xn;R68/20/21/22)</i> at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60, R61
REFERENCES ECHA CLP database ECHA CHEM SIDS report on high boiling ethylene glycol ethers (2002)	https://echa.europa.eu/info https://echa.europa.eu/regi http://www.inchem.org/doc	stration-dossier/-/re	egistered-dossier/14425	4-ktischidetails77479
	p.,, ****w.monetti.urg/000	orna/arua/81U8/80		

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Sodium carbonate (CAS: 497-19-8)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegredation test	See comment			
				The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below(
Passes inherent biodegredation test  If answer to either auestion is YES, substance is not persistent	See comment			
If answer to entire duestion is 125, substance is not betsistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days	See comment See comment			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below).
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days	See comment See comment			тте реговление инена ате пи инсклу аррикале то пеказаннограниза аки чене чеченорей ризпорану по случани заизматись (вее солители регом).
Half life in soil ≥ 120 days  If answer to any question is YES, substance is persistent  If answer to all questions is NO substance is not persistent	See comment			
If answer to all questions is IVO, substance is not persistent  Is sufficient data available? (if not assume substance is persistent)	Yes			
is sufficient data available? (if not assume substance is persistent)	res			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Sodium
Is substance persistent?	Yes (see comment)			carbonate will dissociate in the water environment to form sodium and carbonate ions. The latter will transform to bicarbonate ions. The ions will persist in the environment. As a result have noted as persistent for the purposes of this assessment.
Biogrammulation				
Bioaccumulation  Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (see comment)		SIDS (2002)	BCF studies are not directl relevant to inorganic substances such as sodium carbonate. Sodium carbonate will dissociate in the water environment to
Does field data show evidence for biomagnification?	No data (see comment)	·	3103 (2002)	form sodium and carbonate ions. Neither of these ions are considered to accumulate in the tissues of organisms (OECD SIDS, 2002)
If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	Log Kow values are not applicable to			Log Kow are not considered reliable estimates of the potential for bioaccumulation of inorganic substances such as sodium carbonate
If answer is YES, substance is bioaccumulative	metals/inorganics			
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm	above information			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			Although neither BCF or log Kow data is available for this substance the available information for this compound indicates that it will not bioaccumulate.
Toxicity				
				No chronic data was located for sodium carbonate. The limited acute aquatic toxicity data located indicated low toxicity to the species studied with effect
Is the lowest chronic NOEC for freshwater or marine organisms $\leq 0.01$ mg/l	No data (see comment)	:	SIDS (2002)	concentrations for algae, invertebrates and fish reported in the range of 67 - 740mgl. This suggests that it is unlikely to meet the criteria for chronic toxicity of <0.00 mg/l. The main impact of sodium carbonate on equation companies is due to the effect of the carbonate in on the pH of the aquatic environment. It is alkalian in nature and can therefore result in an increase in the pH of the surrounding water depending on the concentrations present and other parameters in the receiving water which buffer the effect of PL.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No	ECH	A CRI database	An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for				
reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic	No	ECH	A C&L database	An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.
If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	Yes (See comment)			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Sodium carbonate will
Half life in marine, fresh or estuarine sediment ≥ 180 days	Yes (See comment)			dissociate in the water environment to form sodium and carbonate ions. The latter will transform to bicarbonate ions. The ions will persist in the environment. As a result have noted as persistent for the purposes of this assessment.
Half life in soil ≥ 180 davs If answer to any question is YES, substance is very persistent	Yes (See comment)			
Is bioconcentration factor ≥ 5000	No	:	SIDS (2002)	BCF studies are not directl relevant to inorganic substances such as sodium carbonate. Sodium carbonate will dissociate in the water environment to form sodium and carbonate ions. Neither of these ions are considered to accumulate in the tissues of organisms (OECD SIDS, 2002)
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected	NOI dosesseu			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous				
substance is hazardous Does substance pose a specific risk to groundwater?	Not assessed			
substance is hazardous	Not assessed No	ЕСН	A C&L database	An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.
substance is hazardous Does substance pose a specific risk to groundwater?  Is substance very toxic? Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health		ЕСН	A C&L database	An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.
substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous	No	ЕСН	A C&L database	An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.
substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health  If answer to any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic)	No Yes	ЕСН	A C&L database	An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.
substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic? Is substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health if arrawer to any question is YES, substance is very toxic and hazardous Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	No Yes	ЕСН		An EU harmonised classification is available for sodium carbonate. The classification indicates it does not meet these criteria.  Sodium carbonate will dissociate to sodium and carbonate ions in the aquatic environment. Both of these ions are found widely in the environment naturally. Consideration of the available information indicates that it does not meet the criteria for assessment as Hazardous
substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic? Is substance mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health if answer to any question is VES, substance is very toxic and hazardous Is sufficient data available? (In not assume substance is very toxic)  Is substance very toxic?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  ### sequivalent risk phrases: TR30/3/24/25, Tx-R26/37/28, T548/32/34/25 (does not include Xn, Rife aquivalent risk phrases actinogenic Carc. Cat. 17, EA, Carc. Cat. 2, T84, S7, F84, (does not include Carc. Cat. 3, Xn, R62, Xn, R63)	No  Yes  No  No  No  20, Xn:R21, Xn:R22)  s not include R33, R67, Xi: R3 mutagenic Muta. Cat. 1, Muta	7, Xn:R482021/22, Xn:R	68/20/21/22)	Sodium carbonate will dissociate to sodium and carbonate ions in the aquatic environment. Both of these ions are found widely in the environment naturally. Consideration of the available information indicates that it does
substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic? Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health if answer to any question is VES, substance is very toxic and hazardous Is sufficient data available? (In not assume substance is very toxic)  Is substance very toxic?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  s equivalent risk phrases. TR23/24/25, T+R26/27/28, T548/23/24/25 (Advess not include Xrt, Ri.** acquivalent risk phrases acrinogenic Carc. Cat. 1, T64, Cred. 2, T784, Prases acrinogenic Carc. Cat. 2, T64, Cred. 2, T784, Prases acrinogenic Carc. Cat. 2, T64, Cred. 2, T784, Prases acrinogenic Carc. Cat. 2, T64, Cred. 2, T784, Prases acrinogenic Carc. Cat. 2, T64, Cred. 2, T784, Prases acrinogenic Carc. Cat. 2, T64, Cred. 2, T784, Prases acrinogenic Carc. Cat. 2, T64, Cred. 2, T784, Cred.	No Yes No No No and No	7, Xn:R482021/22, Xn:R	68/20/21/22)	Sodium carbonate will dissociate to sodium and carbonate ions in the aquatic environment. Both of these ions are found widely in the environment naturally. Consideration of the available information indicates that it does
substance is hazardous  Dees substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance mutagenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health.  ### ### ### ### ### ### ### ### ### #	No  Yes  No  No  No  20, Xn:R21, Xn:R22)  s not include R33, R67, Xi: R3 mutagenic Muta. Cat. 1, Muta	7, Xn:R462021/22, Xn:R4 Cat. 2, Muta. Cat. 3, 7; F ation-on-chemicals/d-inv	168/20/2/1/22) 446, T;R68, toxic fi	Sodium carbonate will dissociate to sodium and carbonate ions in the aquatic environment. Both of these ions are found widely in the environment naturally. Consideration of the available information indicates that it does not meet the criteria for assessment as Hazardous for reproduction Repr. Cat. 1, Repr. Cat. 2, R60, R61

			Sodium carboxymethyl cellulose (9004-32-4)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value Reference	Comments
Is substance persistent, bioaccumulative and toxic?	assume yes or no?	value Reference	Coliments
Persistence			
Passes ready biodegredation test Passes inherent biodegredation test	No data(See comment)	OSPAR (2013)	No specific data was located on the degradation rate of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.
Passes innerent blooegredation test If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required			
Half life marine water ≥ 60 days	No data (See summary		
Half life fresh or estuarine water ≥ 40 days	comment)		
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days			
If answer to any question is YES, substance is persistent If answer to all questions is NO. substance is not persistent			
Is sufficient data available? (if not assume substance is persistent)	Yes		
			No specific data was located on the degradation rate of sodium carboxymethyl cellulose. It is a cellulose derivative and therefore
Is substance persistent?	No	OSPAR (2013)	biodegradation is expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.
Bioaccumulation			
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No data (See comment)		No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is BCF <100
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative			
If no BCF data, is log Kow ≥ 4.5?	No data (See comment)		No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is loo Kow <3
If answer is YES, substance is bioaccumulative			indicates it would not meet the chiteria to indecomination as the PLONOR Chiteria is too Now <3
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?	Not assessed due to the above information		
Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm			
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l			
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),			
BCF data should be obtained			
Is sufficient data available? (if not assume substance bioaccumulates)	Yes		
Is substance bioaccumulative?	No	OSPAR (2013)	No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100
Toxicity			
			No chronic toxicity data was located for this substance. The limited acute data indicate moderate to low acute toxicity to the species of invertebrate and
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	Ecotox	fish studied with effect concentrations reported as 87mg/l for the invertebrate Ceriodaphnia dubia and >20000mg/l for the fish Carassius carassius.  Based on the available data then it is unlikely that it will meet the criteria for chronic toxicity
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No	EU CLP database	Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye
is there substantial evidence of long term toxicity (STOT RET of STOT REZ)	NO	EU CLP database	drops etc and also many food products and it is an approved food additive (EFSA). An assessment by the FDA concluded that it was not considered a hazard to the public (FDA, 2015). Weight of evidence indicates does not meet criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for	No	EU CLP database	Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye
reproduction (Repr 1A, 1B, 2)	NO	EU CLP database	drops etc and also many food products and it is an approved food additive (EFSA). An assessment by the FDA concluded that it was not considered a hazard to the public (FDA, 2015). Weight of evidence indicates does not meet crteria
If answer to any question is YES, substance is toxic			
If answer to all questions is NO, substance is not toxic			
	Vee		
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	Yes No		
Is substance toxic?	No		
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?			
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?	No		
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No		No excelle data user located on the description rate of radium enhancemental delictors. Bit is radial and excellent and therefore biodentration in
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?	No	OSPAR (2013)	No specific data was located on the degradation rate of sodium carbonymethyl cellulose. It is a cellulose derivative and therefore biodegradation is expected. However information on rates of degradation was not available. Sodium carbonymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is ready biodegradation.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?	No No	OSPAR (2013)	No specific data was located on the degradation rate of sodium carbonymethyl cellulose. It is a cellulose derivative and therefore biodegradation is expected. However information on rates of degradation was not available. Sodium carbonymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No No	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No No	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No No	OSPAR (2013) OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent	No No		expected. However information on raise of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000	No No		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bloaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  if answer to any question is VES, substance is very persistent  Is bioconcentration factor ≥ 5000  if answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?	No No No No		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in oil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does groundwater manifesting data show half life in groundwater ≥ 1 year  Does groundwater manifesting data show half life in groundwater ≥ 1 year  Does groundwater samples show levels of the substance greater than the	No No No		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  to substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance of groundwater sumples show levels of the substance greater than the LOO?  Doe 15% of lest have at least one sample where the substance greater than the LOO?	No N		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  ### answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  #### answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does quotaviewer emolitoring data show half life in groundwater?  Does groundwater emolitoring data show half life in groundwater?  Does groundwater emolitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the  LOO?	No Notassessed Notassessed		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in oil ≥ 180 days  If answer to any question is YES, substance is very persistent  is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does aroundwater monitoring data show half life in groundwater ≥ 1 year  Doe 5% of groundwater samples show half life in groundwater ≥ 1 year  Doe 5% of groundwater samples show levels of the substance greater than the  LOQ?  The substance is year years in groundwater is year years in groundwater and years in years in groundwater is the substance is persistent in groundwater in groundwater in groundwater in groundwater in groundwater in groundwater.	No Not assessed Not assessed Not assessed		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine ≥ 180 days  Half life in marine, fresh or estuarine	No Not assessed Not assessed Not assessed		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 190 days  Half life in soil ≥ 190 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance bronkind factor ≥ 5000  Does groundwater monitoring data show half life in proundwater?  Does substance bronkind factor ≥ 5000  Do ≥ 15% of groundwater samples show levels of the substance greater than the LOQ?  Jo ≥ 15% of sites have all least one sample where the substance is detected above the LOQ?  If answer to any question is YES, substance is persistent in groundwater  # substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater.	No Not assessed Not assessed Not assessed		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 80 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does of groundwater monitoring data show half life in groundwater ≥ 1 year  LOQ?  Doe 15% of she have at least one sample where the substance is detected above the LOQ?  # answer for any question is YES, substance is persistent in groundwater is substance persistent in groundwater is substance or persistent in groundwater is substance is represented in groundwater.  # substance is hexardous  Does substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?	No No No No No No No No Not assessed Not assessed Not assessed Not assessed	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Is bioconcentration factor ≥ 5000  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  Does substance very persistent and very bioaccumulative  Is substance very persistent and solve half life in condwater ≥ 1 year  Doe Sy for groundwater samples show levels of the substance greater than the  LOC?  Doe 150 of sites have at least one sample where the substance is detected above the LOC?  # answer to any question is YES, substance is persistent in groundwater!  # substance is persistent in groundwater,  # substance is persistent in groundwater,  Does substance is parsistent in groundwater,  Boes substance is parsistent in groundwater,  Boes substance is parsistent in groundwater,  Does substance is parsistent in groundwater,  Boes days  Boes and Toxic All Tox	No Not assessed Not assessed Not assessed		expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, ever drops est and also many food products and it is an approved food additive (PSSA). An assessment by the FDA concluded that it was not considered a
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  Is substance fresh or estuarine sediment ≥ 180 days  Is substance fresh or estuarine sediment ≥ 180 days  Is substance life sed in SYES, substance is very persistent  Is substance very persistent and very bioaccumulative  Is substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance specific risk to groundwater ≥ 1 vear  Do ≥ 51% of groundwater samples show levels of the substance greater than the  LOQ?  Jo ≥ 15% of sites have all least one sample where the substance is detected above the LOQ?  # substance is persistent in groundwater,  # substance is persistent in groundwater,  # substance is parsistent in groundwater,  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance were the substance is persistent in groundwater,  Is substance were the substance is persistent in groundwater.	No No No No No No No No Not assessed Not assessed Not assessed Not assessed	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil = 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 vear  Do ≥ 5% of groundwater samples show levels of the substance greater than the  Do ≥ 5% of groundwater samples show levels of the substance is detected show the LOQ?  # substance is persistent in groundwater?  # substance is persistent in groundwater?  Is substance is persistent in groundwater, bioaccumulative AND toxic, substance pose a specific risk to groundwater?  Is substance or to toxic?	No No No No No No No No Not assessed Not assessed Not assessed Not assessed	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye drops et and ralso many food products and it is an approved food additive (FSRA). An assessment by the FDA concluded that it was not considered a
Is substance toxic?  Is SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in marine, fesh or estuarine sediment ≥ 180	No N	OSPAR (2013)	expected. However information on raise of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, ever drops est and also many food products and it is an approved food additive (PSSA). An assessment by the FDA concluded that it was not considered a
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater ≥ 1 vear  Do ≥ 5% of groundwater samples show levels of the substance greater than the  LOC?  Jo ≥ 15% of sites have at least one sample where the substance is detected above the LOC?  If answer to any question is YES, substance is persistent in groundwater!  # substance is persistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance wery toxic?  Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic and hazardous	No No No No No No No No Not assessed Not assessed Not assessed Not assessed	OSPAR (2013)	expected. However information on raise of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, ever drops est and also many food products and it is an approved food additive (PSSA). An assessment by the FDA concluded that it was not considered a
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil = 180 days  # answer to any question is YES, substance is very persistent  is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 vear  Do ≥ 5% of groundwater samples show levels of the substance pretent than the  Do ≥ 15% of stesh have all least one sample where the substance is detected show the LOQ?  # substance is persistent in groundwater?  # substance is persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance provided in YES, substance is persistent in groundwater is substance pose a specific risk to groundwater?  Is substance every toxic?  Is substance wery toxic?  Is substance is persistent in groundwater is substance is persistent in groundwater.  # answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic) is substance very toxic?	No N	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is with used as a hickening agent in a range of products including toothpaste, paints, eye drops et and also many tood products and it is an approved for additive (EFSA). An assessment by the FDA concluded that it was not considered a hazard to the public (FDA, 2015). Weight of evidence indicates it does not meet the criteria
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 100 days  Half life in soil ≥ 100 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  # Substance is persistent in groundwater in the persistent in groundwater.  # substance is persistent in groundwater.  # substance is persistent in groundwater.  Is substance pose a specific risk to groundwater.  # substance is persistent in groundwater.  # substance is persistent in groundwater.  Is substance pose a specific risk to groundwater.  Is substance water in groundwater.  Is substance is persistent in groundwater.  Is substance pose a specific risk to groundwater?  Is substance water in groundwater.	No No No No No No No No Not assessed Not assessed Not assessed Not assessed	OSPAR (2013)	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is wide placed as a bickening agent in a range of products including toothpasts, paints, eye criteria would be met. Sodium carboxymethyle cellulose is widey used as a bickening agent in a range of products including toothpasts, paints, eye criteria would be met. Sodium carboxymethyle cellulose is widey leved as a bickening agent in a range of products including toothpasts, paints, eye criteria would be met. Sodium carboxymethyle cellulose is widey ESSAL, an assessment by the FDA concluded that it was not considered a
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil = 180 days  # answer to any question is YES, substance is very persistent  is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 vear  Do ≥ 5% of groundwater samples show levels of the substance pretent than the  Do ≥ 15% of stesh have all least one sample where the substance is detected show the LOQ?  # substance is persistent in groundwater?  # substance is persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance pose a specific risk to groundwater?  Is substance provided in YES, substance is persistent in groundwater is substance pose a specific risk to groundwater?  Is substance every toxic?  Is substance wery toxic?  Is substance is persistent in groundwater is substance is persistent in groundwater.  # answer to any question is YES, substance is very toxic and hazardous is sufficient data available? (if not assume substance is very toxic) is substance very toxic?	No Not assessed Not assessed Not assessed Not assessed Not assessed No assessed No assessed No assessed No assessed	OSPAR (2013)  EU CLP database	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickneing agent in a range of products including toothpasts, paints, eye drops et can also many food products and it is an approved food additive (EFSA). An assessment by the FDA concluded that it was not considered a hazard to the public (FDA 2015). Weight of evidence indicates it does not meet the criteria  Limited data is available on this substance however the weight of evidence indicates it does not meet the criteria for Hazardous
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil = 180 days  # answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the 100-15% of shes have at least one sample where the substance is detected show the LOQ?  # substance is persistent in groundwater?  # substance is persistent in groundwater?  Is substance pose a specific risk to groundwater is substance in Pazzrdous  Does substance pose a specific risk to groundwater is substance in Pazzrdous  Does substance pose a specific risk to groundwater?  Is substance hazardous  Does substance pose a specific risk to groundwater?  Is substance wery toxic?  Is substance wery toxic?  Is substance wery toxic?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  # equivalent risk phrases T.R.23/24/25, T.R.R.26/27/28, T.R.46/23/24/25 (does not include Xn. R.2 * equivalent risk phrases caringged Care. Cat. 1, 16.2. Cat. 2, 17.6.1. T.R.4.  # equivalent risk phrases acringed Care. Cat. 2, 17.6.1. Cat. 2, 17.6.1. T.R.4.  Does substance hazardous, if so, state on what basis	No Not assessed Not assessed Not assessed Not assessed Not assessed No assessed No assessed No assessed No assessed	OSPAR (2013)  EU CLP database	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickneing agent in a range of products including toothpasts, paints, eye drops et can also many food products and it is an approved food additive (EFSA). An assessment by the FDA concluded that it was not considered a hazard to the public (FDA 2015). Weight of evidence indicates it does not meet the criteria  Limited data is available on this substance however the weight of evidence indicates it does not meet the criteria for Hazardous
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 160 days  ### Answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  ### answer is yes, substance is very bioaccumulative?  Does substance opee a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Doe 50 of groundwater samples show levels of the substance greater than the LOQ?  ### Answer to any question is YES, substance is persistent in groundwater is substance is persistent in groundwater?  ### substance is persistent in groundwater?  ### substance is persistent in groundwater, bioaccumulative AND toxic, aubstance is persistent in groundwater.  ### substance pose a specific risk to groundwater?  ### substance pose is specific risk to groundwater?  ### substance is persistent in groundwater.  ### substance pose a specific risk to groundwater?  ### substance wery toxic?  ### Is substance hazardous, if so, state on what basis  ### ouivialent risk phrases Tr.829/24/25, Tr.R262/7/28, Tr.R48/23/24/25 (does not include Xnr.R2 * ouivialent risk phrases Cariongen Care. Cat. 1, Ta.R4.7 (does not include Care. Cat. 3, Xnr.R40, Repr. Cat. 3, Xnr.R40, Repr. Cat. 3, Xnr.R40,	No N	OSPAR (2013)  EU CLP database  EU CLP database  77. Xn.R482021/22, Xn.R68/20/21/22)  16. Cat. 2, Muta. Cat. 3, T.R46, T.R68, toxid	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye hazard to the public (FDA, 2015). Weight of evidence indicates it does not meet the criteria  Limited data is available on this substance however the weight of evidence indicates it does not meet the criteria for Hazardous
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  Half life in soil ≥ 180 days  ### answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  ### answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does anoundwater monitoring data show half life in groundwater ≥ 1 year  Doe ≥ 5% of groundwater samples show hell file in groundwater ≥ 1 year  Doe ≥ 5% of groundwater samples show hells of the substance greater than the LOQ?  Does substance pose a specific risk to groundwater?  ### substance in persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  ### substance is parsistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater?  ### substance is parsistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater?  ### substance is parsistent in groundwater?  Is substance on hazardous  Is substance wery toxic?  Is substance wery toxic?  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  #### acquivalent risk phrases carinogenic Carc. Cat. 1, 74.8.7.8.7.8.9.8.8.8.8.8.8.8.8.8.8.8.8.8.8	No  No  No  No  No  No  No  No  No  Not assessed  No  No  No  No  No  No  No  No  No  N	OSPAR (2013)  EU CLP database  EU CLP database  77, Xn.R482021/22, Xn.R68/2021/22)  Gat. 2, Muta. Cat. 3, T.R46, T.R68, toxidition of the control of the con	expected. However information on rates of degradation was not available. Sodium carboxymethyl cellulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye hazard to the public (FDA, 2015). Weight of evidence indicates it does not meet the criteria  Limited data is available on this substance however the weight of evidence indicates it does not meet the criteria for Hazardous
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?  Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in soil ≥ 150 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater?  Does substance pose a specific risk to groundwater? ≥ 1 year  Does 25% of groundwater anaptics show levels of the substance is detected above the LOC?  Does 15% of sites have at least one sample where the substance is detected above the LOC?  Be a substance pose a specific risk to groundwater is substance is a presistent in groundwater.  Is substance persistent in groundwater, bioaccumulative AND toxic, Does substance persistent in groundwater.  Is substance persistent in groundwater, bioaccumulative AND toxic, Does substance wery toxic?  Is substance bazardous  Is sufficient data available? (If not assume substance is very toxic and hazardous is substance hazardous, if so, state on what basis  If answer to any question is YES, substance is very toxic and hazardous is substance hazardous, if so, state on what basis  If answer to any question is YES, substance is very toxic and hazardous is substance hazardous, if so, state on what basis	No N	OSPAR (2013)  EU CLP database  EU CLP database  77, Xn.R48202122, Xn.R68202122)  Gat. 2, Muta. Cat. 3, T.R46, T.R68, toxidition of the control of the contro	expected. However information on rates of degradation was not available. Sodium carboxymethyl collulose has been classified as PLONOR by OSPAR which indicates that it is readily biodegradable as one of the PLONOR criteria is ready biodegradability.  No specific data was located on the bioaccumulation potential of sodium carboxymethyl cellulose. It has been classified as PLONOR by OSPAR which indicates it would not meet the criteria for bioaccumulation as the PLONOR criteria is log Kow <3 and BCF <100  Sodium carboxymethyl cellulose has not been formally assessed under CLP. Industry data submissions to the CLP database do not indicate that these criteria would be met. Sodium carboxymethyl cellulose is widely used as a thickening agent in a range of products including toothpaste, paints, eye ortops eta and also many food products and it is an approved food additive (ESA). An assessment by the FDA concluded that it was not considered a hazard to the public (FDA, 2015). Weight of evidence indicates it does not meet the criteria  Limited data is available on this substance however the weight of evidence indicates it does not meet the criteria for Hazardous  Stucm261244 htm

				Sodium gluconate (CAS: 527-07-1)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Passes ready biodegradation test	Yes	100% (28days)	SIDS (2004)	Ready biodegradability study reported 100% degradation over 28days.
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent  If answer to both questions is NO. additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life fresh of ≥ 120 days	No data (See comment)			No degradation half life data was located for water, sediment and soil however information is available on a ready biodegradability study (see above)
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes No			No degradation half life data was located for water, sediment and soil however information is available on a ready biodegradability study which indicates it meets the criteria for ready biodegradability.
Bioaccumulation				No BCF data was located for sodium gluconate. The SIDS report noted that no bioaccumulation effects were expected and the substance has been
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	No data (see comment)		SIDS (2004)	No DCP data was located in 3 soluting ignoralises. The Stock rejoint indicat use no blocker on the stocker of an an expected and the substance has been found to be readily metabolised which would reduce the potential to bioaccumulate.
If no BCF data. is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	No	-5.99	SIDS (2004)	An estimated log Kow of -5.99 was reported for sodium gluconate
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?  Substance is chronically non-toxic in mammals  Molecular size 2 4.3nm	Not assessed due to the above data			
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/I If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative if weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			Although limited data is available the weight of evidence indicates that sodium gluconate is not expected to meet the criteria for bioaccumulation
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	560mg/l	SIDS (2004)	Chronic data was limited to two species of aligne, ie a 72th NOEC for Selenastrum capricorrutum of 560mg1 and a 72th NOEC of > 100mg1 for the align Desmodesmus subspiciatus. Acute data for Daphnia magna which gave a near acute NOEC of > 100mg1 also supports the indication that sodium gluconate is unlikely to meet the criteria for chronic toxicity. Acute study on fish noted an LC0 of > 100mg1.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		EU C&L database/SIDS(2004)	An EU harmonised C&L classification is not available for sodium gluconate. Industry submissions to the C&L database indicates that it does not meet the criteria for long term toxicity. This is supported by data in the SIDS report which noted that studies on repeated dosing did not indicate significant busc effects.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		EU C&L database/SIDS(2004)	An EU harmonised C&L classification is not available for sodium gluconate. Industry submissions to the C&L database indicates that it does not meet the criteria for CMR. This is supported by data in the SIDS report which noted that studies did not indicate it was mutagenic or reproductive toxicity.
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)  Is substance toxic?	Yes No			The available data indicates it does not meet the criteria for toxicity
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine. fresh or estuarine sediment ≥ 180 davs  Half life in soil ≥ 180 davs	No data (see comment)		SIDS (2004)	No degradation half life data was located for water, sediment and soil however information is available on a ready biodegradability study which indicates it is readily biodegradable (see above)
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000  If answer is ves. substance is very bioaccumulative	No data (see comment)		SIDS (2004)	No BCF data was located for sodium gluconate. The SIDS report noted that no bioaccumulation effects were expected and the substance has been found to be readily metabolised which would reduce the potential to bioaccumulate.
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
Do $\geq 5\%$ of groundwater samples show levels of the substance greater than the LOQ?	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?  Is substance very toxic?	Not assessed			
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		EU C&L database/SIDS(2004)	An EU harmonised C&L classification is not available for softun gluconate. Industry submissions to the C&L database indicates that it does not meet the criteria for mutagenicity. This is supported by data in the SIDS report which noted that studies did not indicate it was mutagenic.
If answer to any question is YES, substance is very toxic and hazardous  Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			The available data indicate it does not meet the criteria for Hazardous. In addition in support of this sodium gluconate is listed on Annex IV of REACH. These are substances exempted from REACH as they are considered to cause minimum risk because of their intrinsic properties.
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product)	No			
# equivalent risk phrases: T.R.23/24/25, T.+R.26/27/28 (does not include Xn: R2 * equivalent risk phrases T.R.39/23/24/25, T.+R.26/27/28, T.R.48/23/24/25 (does * equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T.R.45, T.R.49, (does not include Carc. Cat. 3, Xn:R40, Repr. Cat. 3, Xn:R62, Xn:R63)	not include R33, R67, Xi; R:	37, Xn;R4820/21/2 a. Cat. 2, Muta. Ca	2, <i>Xn;R68/20/21/22)</i> tt. 3, T;R46, T;R68, toxic t	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
REFERENCES OECD SIDS (2004) Gluconic acid and its derivatives OECD SIDS (2004) Gluconic acid and its derivatives EU Q&L database	http://webnet.oecd.org/Hpv. http://webnet.oecd.org/Hpv. https://echa.europa.eu/infor	/Ul/handler.axd?id=	-b94cc5f7-de5c-4417-b6	ic2-f1eb4ffcdb72
		and the second		

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Sodium hydroxide (CAS: 1310-73-2)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegredation test	See comment			
Passes inherent biodegredation test	See comment			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below)
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 days				The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below)
Half life fresh or estuarine water ≥ 40 days	See comment			тто реголого столи и от столу фрикало о полишиновущию или пого вогорой риторый на сущно обосностою (сос остигать вогон)
Half life marine sediment ≥ 180 days  Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	Yes		SIDS (2002)	The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Sodium hydroxide will not degrade but will dissociate in water to sodium and hydroxide ions neither of which will biodegrade. Based on the latter have noted the worst case of persistent.
Bioaccumulation				
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	See comment		EU RAR (2007)	BCF studies are not directly relevant to inorganic substances such as sodium hydroxide. No BCF data was available for sodium hydroxide. The EU Risk Assessment report notes that bioaccumulation is not relevant for sodium hydroxide
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	See comment			Log Kow values are not considered reliable estimates of the bioaccumulation potential of inorganic substances such as sodium hydroxide.
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikelv?  Substance is chronically non-toxic in mammals  Molecular size ≥ 4.3nm  Molecular weight ≥ 1100g/mol	above information			
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)				
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No		SIDS (2002) EU RAR (2007)	No specific data was available for BCFs and is not considered relevant for sodium hydroxide. Log Kow values are not considered relevant for inorganic substances. Sodium hydroxide is not considered to bioaccumulate as it will be present in the form of the sodium and hydroxide ions.
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	25mg/l	EU RAR (2007)	Very little chronic data was available on sodium hydroxide. The results of a 3 generation study on the guppy indicated no chronic effects at a concentration of 25mgh. The man potential effects of sodium hydroxide on aquatic lite relate to its effect on pH due to the alkaline nature of the hydroxide ion. Acute effects on inventibrates and fish were noted in the range of 20 40mgh.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised C&L classification is available. It indicates sodium hydroxide does not meet these criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for	No		FCHA C&I database	An EU harmonised C&L classification is available. It indicates sodium hydroxide does not meet these criteria
reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
If answer to all questions is NO, substance is not toxic  Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	Yes		SIDS (2002)	The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Sodium hydroxide will not degrade but will dissociate in water to sodium and hydroxide ions neither of which will biodegrade. Based on the latter have noted the worst case of persistent
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No		EU RAR (2007)	No BCF data was available for sodium hydroxide however the EU Risk Assessment report notes that bioaccumulation is not relevant for sodium hydroxide
If answer is ves. substance is verv bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year	Not assessed			
$Do \ge 5\%$ of groundwater samples show levels of the substance greater than the LOQ?	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  ## answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous				
Does substance pose a specific risk to groundwater?  Is substance very toxic?	Not assessed			
Is substance very toxic? Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	An EU harmonised C&L classification is available. It indicates sodium hydroxide does not meet these criteria
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes <b>No</b>			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T:R23/24/25, T+:R26/27/28 (does not include Xr; R2 * equivalent risk phrases T:R39/23/24/25, T+:R26/27/28, T:R48/23/24/25 (does	s not include R33, R67, Xi; R3	7, Xn;R4820/2	1/22, Xn;R68/20/21/22)	transfer Day Co. A Day Co. A Dec. Dec.
^ equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T;R45, T;R49, (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	, mutagenic muta. Cat. 1, Muta	. cat. 2, Muta.	ual. 3, 1;К46, 1;К68, toxic	ил нерговования керл. Cat. 1, Керл. Cat. 2., Кой , Кол
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database SIDS (2002) - SIDS initial assessment report - sodium hydroxide EU RAR (2007) - EU risk assessment report - sodium hydroxide	https://echa.europa.eu/inforr http://www.inchem.org/docur http://echa.europa.eu/docur	nents/sids/sids	/nahvdrox.pdf	

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Sodium lauryl ether sulphate (CAS: 3088-31-1)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence				
Passes ready biodegradation test	Yes		ECHA CHEM	The limited data available indicates that it is readily biodegradable with 71% degradation noted over 28days.
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent				
If answer to both questions is NO. additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days	No		ECHA CHEM	A degradation half life of 38days is reported for water. This is an estimated rather than measured result.
Half life fresh or estuarine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days	No		ECHA CHEM	A degradation half life of 75days is reported for soil. This is an estimated rather than measured result.
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			Limited data is available on the persistence of sodium lauryl ether sulphate in the aquatic environment. Much of the data is estimated rather than measured. The weight of evidence indicates that it does not meet the criteria for persistence
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	71	ECHA CHEM	No measured BCF data were located. An estimated BCF of 71 was noted in ECHA CHEM dossier. It is noted however that there is uncertainty in the assessment of the bioaccumulation of surfactants and therefore degree of uncertainty associated with this result.
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				account of the proceduration of distributions and the contract degree of direct tarity accounted that this fedure
				A log Kow of -0.6 has been estimated however it is noted that determination of log Kow for surfactants is not straight forward and therefore an element of
If no BCF data, is log Kow ≥ 4.5?	No	-0.6	ECHA CHEM	uncertainty associated with this result.
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals	above			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
Octanol solubility \$ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			There is limited data available on the potential for this substance to bioaccumulate. There is uncertainty associated with the data located as it is estimated data and also there is difficulty in interpreting accumulation of surfactants.
-				
Toxicity			ECHA CHEM/	Limited data is available on the toxicity of sodium lauryl ether sulphate to aquatic life. No chronic toxicity data was located. Acute data on fish indicated
ls the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No		Caracciolo et al (2017)	effects in the range of 7.4 - 13.6mg/l, and to invertebrates in the range of 24 - 39mg/l. Algal effects were observed at concentrations as low as 0.5mg/l.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised classification is not available for this substance. Industry submissions to the database indicate it does not meet the criteria.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised classification is not available for this substance. Industry submissions to the database indicate it does not meet the criteria.
If answer to any question is YES, substance is toxic If answer to all questions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)				
Is substance toxic?	No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			This is based on limited data with much of the data being estimated rather than measured, eg for persistence and bioaccumulation. Based on the weight of evidence and also consideration of data for other anionic surfactants it is not expected to meet the criteria for PBT.
				the frequency of the class construction of data for other unions surfaceance it is not expected to meet the other in our 151.
Does substance pose an equivalent level of concern?				
Wary pareietant and yary bioaccumulative?				
Very persistent and very bioaccumulative?  Half life in marine, fresh or estuarine water ≥ 60 days	No		ECHA CHEM	A degradation half life of 38days is reported for water. This is an estimated rather than measured result.
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days	No		ECHA CHEM	A degradation half life of 38days is reported for water. I his is an estimated rather than measured result.
Half life in marine, fresh or estuarine water ≥ 60 days	No No		ECHA CHEM	A degradation half life of 36days is reported for water. This is an estimated rather than measured result.  A degradation half life of 75days is reported for soil. This is an estimated rather than measured result.
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine. fresh or estuarine sediment ≥ 180 davs  Half life in soil ≥ 180 days		71		A decradation half life of 75days is reported for soil. This is an estimated rather than measured result.  No measured BCF data were located. An estimated BCF of 71 was noted in ECHA CHEM dossier. It is noted however that there is uncertainty in the
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent	No	71	ECHA CHEM	A degradation half life of 75days is reported for soil. This is an estimated rather than measured result.
Half life in marine, fresh or estuarine water ≥ 60 days Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil = 180 days If answer to any question is YES, substance is very persistent Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative	No No	71	ECHA CHEM	A decradation half life of 75days is reported for soil. This is an estimated rather than measured result.  No measured BCF data were located. An estimated BCF of 71 was noted in ECHA CHEM dossier. It is noted however that there is uncertainty in the assessment of the bioaccumulation of surfactants and therefore degree of uncertainty associated with this result.
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine. fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  If answer to any question is YES, substance is very persistent  Is bioconcentration factor ≥ 5000	No	71	ECHA CHEM	A decradation half life of 75days is reported for soil. This is an estimated rather than measured result.  No measured BCF data were located. An estimated BCF of 71 was noted in ECHA CHEM dossier. It is noted however that there is uncertainty in the
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Half life in marine, fresh or estuarine water 2 60 days Half life in marine, fresh or estuarine sediment 2 180 days Half life in oai 180 days If answer to any question is YES, substance is very persistent Is bioconcentration factor 2 5000 If answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data short half life in proundwater 2 1 very 100 control of the substance greater than the 100?  Does 15% of groundwater samples show levels of the substance greater than the 100?  If answer to any question is YES, substance is persistent in groundwater is substance in persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  If substance pose a specific risk to groundwater?  Is substance provided in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater?  Is substance pose a specific risk to groundwater?  Is substance wery toxic?  Is substance is persistent in groundwater, bioaccumulative AND toxic, substance of the persistent in groundwater?  Is substance very toxic?  Is substance bare mutagenic (Muta 1A, 18.2) or have no determinable threshold for adverse effects on human health  If answer to ary question is YES, substance is very toxic and hazardous  sit substance very toxic?  Is substance hazardous, if so, state on what basis  Does substance have known breakdown products will be undertaken if every breakdown products  If anyoner to ary question is YES, substance is very toxic and hazardous to groundwater?  Is substance hazardous, if so, state on what basis  Does substance hazardous, if so, state on what basis  Does substance hazardous, if so, state on what basis  Does substance hazardous, if so, state on what basis  Does substance hazardous for so, state on what basis  Does substance hazardous for so, state on what basis  Does sub	No No No No No No Not assessed Not assessed Not assessed Not assessed No	7, Xm:R4820021 Cat. 2, Muta. C	ECHA CHEM  ECHA CHEM  ECHA CAL database  ECHA CAL database  22, Xn.R683202 1/22) at. 3, T.R46, T.R68, toxic	A degradation half life of 75days is reported for soil. This is an estimated rather than measured result.  No measured BCF data were located. An estimated BCF of 71 was noted in ECHA CHEM dossier. It is noted however that there is uncertainty in the assessment of the bioaccumulation of surfactants and therefore degree of uncertainty associated with this result.  This is based on limited data with much of the data being estimated rather than measured, ag for persistence and bioaccumulation. Based on the weight of evidence and also consideration of data for other anionic surfactants it is not expected to meet the criteria for PBT.  An EU harmonised classification is not available for this substance. Industry submissions to the database indicate it does not meet the criteria.
Half life in marine, fresh or estuarine water 2 60 days Half life in marine, fresh or estuarine sediment 2 180 days Half life in soil : 180 days # answer to any question is YES, substance is very persistent Is bioconcentration factor 2 5000 # answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative  Does sroundwater monitoring data show half life in groundwater ? Does groundwater monitoring data show half life in groundwater 2 1 year Does Sy of groundwater samples show half life in groundwater 2 1 year Does Sy of groundwater samples show half life in groundwater 2 1 year Does Sy of groundwater samples show half life in groundwater 2 1 year Does Sy of groundwater samples show levels of the substance greater than the Doe 2 5% of groundwater samples show levels of the substance life than the substance is substance in the substance is persistent in groundwater? # substance is persistent in groundwater, bioaccumulative AND toxic, substance pose a specific risk to groundwater? Is substance very toxic? Is substance very toxic? Is substance very toxic? Is substance is nazardous Does substance is persistent in groundwater is very toxic and hazardous Is audicant data available? (if not assume substance is very toxic and hazardous Is substance hazardous, if so, state on what basis  Does substance have known breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product. # equivalent risk phrases: TR23/24/25, T+R26/27/26, Tr48/23/24/25, fides does not include Carc. Cat. 3, Xn,R40, Repc. Cat. 3, Xn,R60, Xn,R63).	No  No  No  No  No  Not assessed  Not assessed  Not assessed  Not assessed  Not assessed  No  No  No  No  No  No  No  No  No  N	7. Xr.R482021 i. Cat. 2. Muta. (	ECHA CHEM  ECHA CHEM  ECHA CAL database  ECHA C&L database  22. Xn.R682002 1/22) at. 3, T,R46, T,R68, toxic	A degradation half life of 75days is reported for soil. This is an estimated rather than measured result.  No measured BCF data were located. An estimated BCF of 71 was noted in ECHA CHEM dossier. It is noted however that there is uncertainty in the assessment of the bioaccumulation of surfactants and therefore degree of uncertainty associated with this result.  This is based on limited data with much of the data being estimated rather than measured, eg for persistence and bioaccumulation. Based on the weight of evidence and also consideration of data for other anionic surfactants it is not expected to meet the criteria for PBT.  An EU harmonised classification is not available for this substance. Industry submissions to the database indicate it does not meet the criteria.

				Sodium nitrite (CAS: 7632-00-0)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Passes ready biodegradation test	(See comment)			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below)
Passes inherent biodegradation test	(See comment)			, , , , , , , , , , , , , , , , , , , ,
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 davs Half life fresh or estuarine water ≥ 40 davs Half life marine sediment ≥ 180 davs Half life marine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days ### granswor to any question is YES, substance is persistent	See comment See comment See comment See comment See comment			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances (see comment below)
If answer to all questions is NO. substance is not persistent  Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No			The persistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Metals and inorganics such as sodium nitritie are inherently persistent and subject to transformation rather than degradation. In water sodium nitritie will rapidly dissociate to sodium and nitritie ions. The latter are converted to nitrates in the presence of bacteria in the environment.
Bioaccumulation				
Bicconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	3.162	SIDS (2005)	Sodium nitritle is an inorganic compound and therefore the calculation of BCF is not directly relevant. An estimated BCF value is reported in the SIDS assessment and this value is 3.162. The SIDS report notes that fish are known to metabolise sodium nitritle which reduces the opportunity to bioaccumulation.
Does field data show evidence for biomagnification? If answer to either question is YES, substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?	No	-3.7	SIDS (2005)	Log Kow values are not considered a reliable assessment of bioaccumulation for inorganic substances. However a log Kow is noted in the SIDS assessment. The value reported indicates that it does not meet the criteria. (Value noted as unreliable in the ECHA CHEM dossier)
If answer is YES, substance is bioaccumulative  Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals Molecular size 2 4 3.mm Molecular size 1100g/mol Octano solubility 5 000g/mol Weight of evidence indicates bioaccumulation unlikely (i.e. YES answers)	above			
substance is not bioaccumulative If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers). BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No		SIDS (2005)	The limited chronic toxicity data located noted chronic NOECs in the range of 1 - 100mg/l. The lowest chronic NOEC was 1mg/l which was a 29d NOEC for Cyprinus cargino. A 1d NOEC for Icalizarus punctatus was 6.816mg/l and for Penaeus monodon an 80d NOEC of 2mg/l was reported. For the alga Desmodesmus subspiciatus a 3d NOEC of 100mg/l was noted.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA CLP database	A harmonised EU CLP classification indicates sodium nitrite does not meet the criteria.  A harmonised EU CLP classification indicates sodium nitrite does not meet the criteria. The SIDS report indicates that there is some evidence of
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA CLP database	potential mutagenic effects in vitro with some evidence for in vivo effects however CLP classification does not indicate mutagenicity. Sodium nitrite is widely used as a food preservative.
If answer to any question is YES, substance is toxic If answer to all questions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days	(See comment)			The pensistence criteria are not directly applicable to metals/inorganics and were developed principally for organic substances. Metals and inorganics such as sodium nitritier are inherently pensistent and subject to transformation rather than degradation. In water sodium nitritie will rapidly dissociate to sodium and nitritie ions. The latter are converted to nitrates in the presence of bacteria in the environment.
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000  If answer is yes, substance is very bioaccumulative	No	3.162	SIDS (2005)	Sodium nitrite is an inorganic compound and therefore the calculation of BCF is not directly relevant. An estimated BCF value is reported in the SIDS assessment and this value is 3.162. The SIDS report notes that fish are known to metabolise sodium nitrite which reduces the opportunity to bioaccumulate.
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?	Not assessed Not assessed			
Do≥ 15% of sites have at least one sample where the substance is detected above the LOQ?  If answer to any question is YES, substance is persistent in groundwater	Not assessed			
Is substance persistent in groundwater?  If substance is persistent in groundwater, bioaccumulative AND toxic,	Not assessed			
If substance is persistent in groundwater, bloaccumulative AIVID toxic, substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic? Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health ### Answer to any ouestion is YES, substance is very toxic and hazardous	No		ECHA CLP database	A harmonised EU CLP classification indicates sodium nitrite does not meet the criteria.
If answer to any question is YES, substance is very toxic and nazardous  Is sufficient data available? (if not assume substance is very toxic)	Yes			
Is substance very toxic?	No			
Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis	No			
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if				
known. It is acknowledged in the methodology that it is not possible to assess every breakdown product)				
# eouivalent risk ohrases: T.R232/425. T.+R282/7/28 (does not include Xr. R. eouivalent risk ohrases: T.R323/24/25. TR282/7/28. T.R482/24/25 (does not include Xr. R. eouivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T.R45, T.R49 (does not include Carc. Cat. 3, Xr,R40, Repr. Cat. 3, Xr,R62, Xr,R63)	s not include R33, R67, Xi; R3	7. Xn:R4820/21 . Cat. 2, Muta. 0	/22. Xn:R68/20/21/22) Cat. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
REFERENCES ECHA CLP database SIDS assessment (Sodium nitrite) (2005)	https://echa.europa.eu/inforr http://www.inchem.org/docur	nation-on-chem nents/sids/sids/	icals/cl-inventory-database 7632000.pdf	V-disclidetails 62648

				0.11/1/010 50 70 ()
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Sorbitol (CAS: 50-70-4)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegradation test	No data (see below)			
Passes inherent biodegradation test	No data (see below)			
If answer to either question is YES, substance is not persistent If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 davs	No	81% of theorectical	HSDB	Very little information was located on the fate of sorbitol. A study reported on HSDB indicated 81% of theoretical BOD was observed after 2 weeks in a
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days		BOD in 14days		Japanese MITI test. No degradation half life data was located.
Half life fresh or estuarine sediment ≥ 120 days Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)	Yes			
Is substance persistent?	No (see comment)			Limited data is available on the degradation half lives of sorbitol. One study was located which indicated it did not meet the criteria for persistence.
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	1 and 3	HSDB	Estimated BCF values of 1 and 3 are reported on HSDB.
Does field data show evidence for biomagnification?  If answer to either auestion is YES. substance is bioaccumulative				
If no BCF data, is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	No	-2.2	HSDB	
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals	above information			
Molecular size ≥ 4.3nm Molecular weight ≥ 1100g/mol				
Octanol solubility s 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
substance is not bloaccumulative. If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained.				
Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No (see comment)			Limited data is available on the potential for scribtol to bioaccumulate. The log Kow and BCF data located indicate it does not meet the criteria.
				Cirefid.
Toxicity  Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No data (see summary			No aquatic toxicity data was located
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	comment) No		EU C&L database	A harmonised CLP classification is not available for sorbitol. The industry submissions to the database indicates that it does not meet the criteria
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No			A harmonised CLP classification is not available for sorbitol. The industry submissions to the database indicates that it does not meet the criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO. substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
				Very litle information was located on the toxicity of sorbitol. No aquatic toxicity data was located. Industry submissions to the C&L database indicate it is
Is substance toxic?	No (see comment)			not of high toxicity to aquatic life. Industry submissions to the CLP database do not indicate it will meet the criteria for human health toxicity.
				Limited data is available on the persistence, bioaccumulation and toxicity of sorbitol in the aquatic environment. The data located indicates it does not meet the criteria for these properties. The limited data is supported by the following. Sorbitol is one of the substances on Annex IV under REACH which
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			means it is exempt from the need for registration under REACH as it is considered to cause minimum risk due to its intrinsic properties. A SIDS initial assessment report concluded it is considered to be of low priority for further consideration as its intrinsic properties indicate low hazard.
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No	81% of theorectical BOD in 14days	HSDB	Very little information was located on the fate of sorbitol. A study reported on HSDB indicated 81% of theoretical BOD was observed after 2 weeks in a Japanese MITI test. No degradation half life data was located.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	1 and 3	HSDB	The estimated BCF values are much lower than the criteria and therefore indicate it does not meet the criteria for bioaccumulation.
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No (see comment)			Limited data is available on the degradation half lives of sorbitol. One study was located which indicated it did not meet the criteria for persistence.
is substance very persistent and very bloaccumulative?	No (see comment)			Limited data is available on the potential for scribtol to bioaccumulate. The log Kow and BCF data located indicate it does not meet the criteria.
Does substance pose a specific risk to groundwater?				
Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic,				
substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No			A harmonised CLP classification is not available for sorbitol. The industry submissions to the database indicates that it does not meet the criteria
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic)	Yes			Very little information was located on the toxicity of sorbitol. Industry submissions to the CLP database database do not indicate it will meet the criteria for
Is substance very toxic?	No			mutagenicity. In addition the weight of evidence that sorbitol is of low hazard suggests it does not meet the criteria for mutagenicity (see comments in final summary section)
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			Limited data is available on the persistence, bioaccumulation and toxicity of sorbitol in the aquatic environment. The data located indicates it does not meet the criteria for these properties. The limited data is supported by the following. Sorbitol is one of the substances on Annex IV under REACH which
				means it is exempt from the need for registration under REACH as it is considered to cause minimum risk due to its intrinsic properties. A SIDS initial assessment report concluded it is considered to be of low priority for further consideration as its intrinsic properties indicate low hazard.
# equivalent risk phrases: T:R23/24/25, T+:R26/27/28 (does not include Xr; 72: equivalent risk phrases T:R39/23/24/25, T+:R26/27/28, T:R48/23/24/25 (does ^ equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T:R45, T:R49,	not include R33, R67, Xi;	R37, Xn;R4820/21/22,	Xn;R68/20/21/22)	for reproduction Repr. Cat. 1. Repr. Cat. 2. R60. R61
(does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)			., .,o, 1,1.00, IUXIC	
Does substance have breakdown products of concern?	No	No		
REFERENCES EU CLP database	https://echa.europa.eu/inl	formation-on-chemicals	/cl-inventory-database	6/-/dischi/detais/87746
SIDS (2009) HSDB	http://webnet.oecd.org/Hp https://toxnet.nlm.nih.gov	ov/Ul/handler.axd?id=1 /cgi-bin/sis/search2/r?d	78e1e24-4eb2-490f-8 dbs+hsdb:@term+@n	150-67/8(4104/239 a+D-Sorbitol

				Sucrose (CAS: 57-50-1)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegradation test	Yes		EU	Noted to be readily biodegradable based on modelling studies
Passes inherent biodegradation test  If answer to either question is YES, substance is not persistent  If answer to both questions is NO, additional data on half life is required				
Half life marine water ≥ 60 davs Half life fresh or estuarine water ≥ 40 days	No data			
Half life marine sediment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days				
Half life in soil ≥ 120 days If answer to any question is YES, substance is persistent If answer to all auestions is NO. substance is not persistent				
Is sufficient data available? (if not assume substance is persistent) Is substance persistent?	Yes No (see concluding comments)			Limited data indicates it is readily biodegradable. (See concluding comments for further information on weight of evidence)
Bioaccumulation	No	3.162	EU	An estimated RCF value of 3.162 indicates it does not meet the criteria
Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000  Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	NO	3.162	EU	An estimated BLF value of 3.162 indicates it does not meet the criteria
If no BCF data, is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	No	-3.7	HSDB	The reported log Kow for sucrose indicates that it does not meet the criteria
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely?	Not considered due to the above information			
Substance is chronically non-toxic in mammals  Molecular size ≥ 4.3nm  Molecular weight ≥ 1100g/mol				
Octanol solubility ≤ 0.002mmol/l If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No (see concluding comments)			Limited data indicates it does not bioaccumulate (See concluding comments for further information on weight of evidence)
Toxicity	commency			
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	456000mg/l	EU	Limited aquatic toxicity data was located for sucrose. A predicted chronic endpoint of 456000mg/l was estimated for a 16d Daphnia magna study. A 30d fish predicted endpoint of 932000mg/l also indicated that sucrose did not meet the criteria for chronic aquatic toxicity.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised C&L classification is not available for sucrose. The industry submissions to the C&L database do not indicate that it meets the criteria. Sucrose is widely consumed in food products and is a component of many medicines
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for	No		ECHA C&L database	An EU harmonised C&L classification is not available for sucrose. The industry submissions to the C&L database do not indicate that it meets the criteria. Sucrose is widely consumed in food products and is a component of various medicines. Available data in HSDB indicate it did not meet the
reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic				criteria for carcinogenicity and mutagenicity
If answer to all questions is NO, substance is not toxic  Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?	No (see concluding comments)			Limited data indicates it does not meet the criteria for toxicity (See concluding comments for further information on weight of evidence)
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			Limited data is available to assess sucrose against the specified criteria. Sucrose however is listed on Annex IV of REACH. These are substances exempted from REACH as they are considered to cause minimum risk because of their intrinsic properties. In addition a SIDS assessment on sucrose concluded that it is of low priority due to its intrinsic properties indicating low hazard. The weight of evidence therefore indicates that it would not be determined as Hazardous.
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative? Half life in marine, fresh or estuarine water ≥ 60 days	No		EU	The limited data available indicated ready biodegradability based on modelling
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	3.162	EU	An estimated BCF value of 3.162 indicates it does not meet the criteria
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No (see concluding comments)			The limited data indicates it does not meet the criteria for vPvB (See concluding comments for further information on weight of evidence)
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ?	Not assessed Not assessed			
if answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?				
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous	Not assessed			
Does substance pose a specific risk to groundwater?  Is substance very toxic?	INUL BSSESSED			
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health  # answer to any question is YES, substance is very toxic and hazardous	No		ECHA C&L database	An EU harmonised C&L classification is not available for sucrose. The industry submissions to the C&L database do not indicate that it meets the criteria. Sucrose is widely consumed in tood products.
Is sufficient data available? (if not assume substance is very toxic)	Yes No (see concluding			
Is substance very toxic?	comments)			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			Limited data is available to assess sucrose against the specified criteria. Sucrose however is listed on Annex IV of REACH. These are substances exempted from REACH at shy are considered to cause minimum risk because of their intrinsic properties. In addition a SIDS assessment on sucrose concluded that it is of low priority due to its intrinsic properties indicating low hazard. The weight of evidence therefore indicates that it would not be determined as Hazardous.
# equivalent risk phrases: T-R23/24/25, T+R26/27/28 (does not include Xr; R2 * equivalent risk phrases T-R39/23/24/25, T+R26/27/28, T-R48/23/24/25 (does * equivalent risk phrases carcinogenic Carc. Cat. 1, Carc. Cat. 2, T-R45, T-R49, (does not include Carc. Cat. 3, X/R64, X/R763)	not include R33, R67, Xi; R3	37, Xn;R4820/21/2 a. Cat. 2, Muta. Ca	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
Does substance have breakdown products of concern?	No			
REFERENCES ECHA C&L database EU (Evaluation of existing entries Annex IV) HSDB	http://echa.europa.eu/inform http://ec.europa.eu/environr http://toxnet.nlm.nih.gov/cgi	ment/chemicals/rea i-bin/sis/search2/r3	ach/pdf/6b_appendix_2.p ?dbs+hsdb:@term+@na-	<u>df</u> SUCROSE
SIDS (2009)	http://webnet.oecd.org/Hpv/	u/handler.axd?id	=e43ab242-6e55-4bad-8	ats-aon/ouarautz

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent			Tetraethylene glycol (CAS: 112-60-7)
	data / Borderline / assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?				
Persistence Passes ready biodegradation test				
Passes inherent biodegradation test	Yes		SIDS	The SIDS report noted two studies which indicated inherent biodegradation with 22% reported after 20days in one study and 40% after 28days in another
If answer to either question is YES, substance is not persistent If answer to both auestions is NO. additional data on half life is required				
Half life marine water ≥ 60 days				
Half life fresh or estuarine water ≥ 40 days Half life marine sediment ≥ 180 days	No		SIDS	No specific degradation half life data was located. As noted above the SIDS report noted two studies which indicated inherent biodegradation with 22% reported after 20days in one study and 40% after 28days in another
Half life fresh or estuarine sediment ≥ 120 davs Half life in soil ≥ 120 days				
If answer to any question is YES, substance is persistent If answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)				Limited data was located on the degradation of tetraethylene glycol with no half life data being located. The data available indicated inherent
Is substance persistent?	No		SIDS	biodegradation. The fact it does not meet the criteria for persistence is supported by data for other similar glycol compounds, eg triethylene glycol (SIDS).
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000	No	3.2	SIDS	A calculated BCF of 3.2 was reported
Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative				
If no BCF data. is log Kow ≥ 4.5?  If answer is YES, substance is bioaccumulative	No	-2	SIDS	An estimated loa Kow of -2 was reported
Does the weight of evidence from the following criteria indicate bioaccumulation	Not assessed due to the			
unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3nm	above data			
Molecular weight ≥ 1100g/mol Octanol solubility ≤ 0.002mmol/l				
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative				
If weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates)  Is substance bioaccumulative?	Yes No			
Toxicity				
				No specific chronic toxicity data was noted in the SIDS report for tetraethylene glycol. Acute data indicated low acute toxicity to the species of algae,
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	>1000mg/l	SIDS	invertexrate and fish studied with effect concentrations noted in the range of 7800 -> 10000mgl. Chronic data was located for a miniar substance, is trichlyinge dypc.1. A 280 NDEC of > 10000mgl was responded for the invertexrent hybridopsis binsi a lange with a 280 NDEC of > 10000mgl was responded for the invertexrent hybridopsis binsi a lange with a 280 NDEC of > 10000mgl was responded for the invertexrent hybridopsis binsi a lange with a 280 NDEC of > 10000mgl was responded for the invertexrent hybridopsis binsi a lange with a 280 NDEC of > 10000mgl was reported for the first hybridopsis of the 10000mgl was reported by the 100000mgl was reporte
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		SIDS/ECHA CHEM	An EU harmonised C&L classification is not available for this substance. Industry submissions to the C&L database indicate that it does not meet the criteria. Data in the SIDG assessment indicates it does not meet the criteria. Data in the SIDG assessment indicates it does not meet the criteria.
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		SIDS/ECHA CHEM	An EU harmonised C&L classification is not available for this substance. Industry submissions to the C&L database indicate that it does not meet the criteria. Data in the SIDS assessment indicates at does not meet the criteria for carcinogenicity, mutagericity and reproductive toxicity.
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic)	Yes			
Is substance toxic?  IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days	No		SIDS	Limited data was located on the degradation of tetraethylene glycol with no half life data being located. The data available indicated inherent biodegradation. The fact it does not meet the criteria for persistence is supported by data for other similar glycol compounds, eg triethylene glycol (SIDS).
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days				
If answer to any question is YES, substance is very persistent				
Is bioconcentration factor ≥ 5000	No	3.2	SIDS	A calculated BCF of 3.2 was reported
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 year  Do ≥ 5% of groundwater samples show levels of the substance greater than the	Not assessed			
LOQ? Do ≥ 15% of sites have at least one sample where the substance is detected	Not assessed  Not assessed			
above the LOQ? If answer to any question is YES, substance is persistent in groundwater Is substance persistent in groundwater?	Not assessed  Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic,	INUL GOODSSEU			
substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?				
Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		SIDS/ECHA CHEM	An EU harmonised C&L classification is not available for this substance. Industry submissions to the C&L database indicate that it does not meet the criteria. Data in the SIDS assessment indicates it does not meet the criteria for mutagenicity.
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
Does substance have known breakdown products of concern? (Determinations on known key breakdown products will be undertaken if known. It is acknowledged in the methodology that it is not possible to assess every breakdown product).	No			
# equivalent risk phrases: T.R23/24/25, T+R26/27/29 (does not include Xn; R2* equivalent risk phrases T;R39/23/24/25, T+R26/27/28, T;R48/23/24/25 (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63) (does not include Carc. Cat. 3, Xn;R40, Repr. Cat. 3, Xn;R62, Xn;R63)	not include R33, R67, Xi; R3	87, Xn;R4820/21/2 a. Cat. 2, Muta. Ca	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2, R60 , R61
REFERENCES OECD SIDS (2004) ECHA C&L database ECHA-CHEM	http://webnet.oecd.org/Hpv// https://echa.europa.eu/inforr https://echa.europa.eu/regis	mation-on-chemic	als/cl-inventory-database	/-/discli/details/1816
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			т.	extranationalism attributant diaming tetranapateta (CAS, EDGA 2E 2)
SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline /	Value	Reference	etrapotassium ethylenediamine tetraacetate (CAS: 5964-35-2)  Comments
	assume yes or no?	Value	Reference	Comments
Is substance persistent, bioaccumulative and toxic?  Persistence				
Passes ready biodegradation test	No		EU ESR (2004)	No specific data was available for tetrapotassium ethylenediamine tetraacetate. Data was available for tetrasodium ethylenediamine tetraacetate. This is a very similar substance and therefore the data is considered as relevant. Data for tetrasodium ethylenediamine indicates it is not readily biodegraded with
Passes inherent biodegradation test				degradation of 0-10% being reported.
If answer to either question is YES, substance is not persistent If answer to both questions is NO. additional data on half life is required				
Half life marine water ≥ 60 days	No data (see comment)		EU ESR (2004)	No specific information was available on tetrapotassium ethylenediamine tetrapotate. Data for tetrapodum ethylenediamine etraceate was therefore used to assess the potassium form. An EU risk assessment was undertaken for the sodium based substance. No half life data was reported for tetrapodum ethylenediamine tetrapotate. Predicted half life data for vatier was noted to be for the iron complex and to be based on data for photolysis. These half lives were noted to be in the order of 20days. However it is noted on all forms will undergo photolysis with some being stable. The predicted half lives for sediment were noted as 200-30days. In the absence of data it is therefore proposed that EDTA would meet the criteria for persistence.
Half life fresh or estuarine water ≥ 40 davs Half life marine sediment ≥ 180 davs Half life fresh or estuarine sediment ≥ 120 days Half life fresh of ≥ 120 days				
If answer to any question is YES, substance is persistent if answer to all questions is NO, substance is not persistent				
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes Yes			
	res			
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification?  If answer to either question is YES, substance is bioaccumulative	No	1.8	EU ESR (2004)	No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1 for the fish Lepomis macrochirus
If no BCF data. is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	No data located			
Does the weight of evidence from the following criteria indicate bioaccumulation	Not considered due to			
unlikely? Substance is chronically non-toxic in mammals Molecular size ≥ 4.3mm Molecular wisioht ≥ 1100a/mol Octanol solubility ≤ 0.002mmol/I	the above information			
If weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative if weight of evidence indicates bioaccumulation a possibility (i.e. NO answers), BCF data should be obtained				
Is sufficient data available? (if not assume substance bioaccumulates) Is substance bioaccumulative?	Yes			
	No			
Toxicity		05	FOUL OUT	No specific data was available for tetrapotassium ethylenediamine tetracetate. Available data for the sodium compound. A 21d NOEC of 25mg/l was
Is the lowest chronic NOEC for freshwater or marine organisms $\leq 0.01$ mg/l	No	25mg/l	ECHA CHEM	reported for the invertebrate Dephnia magna. Chronic data was also available for algae and fish with a 3d NOEC of 78mg/l reported for the alga Pseudokirchmeritia subcapitate and ANCE of 3-78mg reported for the fish Deair orien. This Pseudokirchmeritia subcapitate and ANCE of 3-78mg reported for the fish Deair orien. This Pseudokirchmeritia subcapitate and ANCE of 3-78mg reported for the fish Deair orien. This Pseudokirchmeritia subcapitate and ANCE of 3-78mg reported for the fish Deair orien. This Pseudokirchmeritia subcapitate and an ANCE of 3-78mg reported for the fish Deair orientation of the ANCE of 3-78mg reported for the fish Deair orientation of the ANCE of 3-78mg reported for the fish Deair orientation of the ANCE of 3-78mg reported for the fish Deair orientation of the ANCE of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the algae and fish with a 3d NOEC of 3-78mg reported for the 4-78mg reported for the 3d NOEC of 3-78mg reported for the 4-78mg rep
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA CLP database	An EU harmonised C&L classification is available for tetrasodium ethylenediamine tetraacetate which indicates it does not meet the criteria for long term toxicity
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)  If answer to any question is YES, substance is toxic	No		ECHA CLP database	An EU harmonised CLP classification is not available for this substance. Inclustry submissions to the database indicate that it does not meet the criteria.  An EU harmonised C&L classification is available for tetrasodium ethylenediamine tetrasoatate which indicates it does not meet the criteria for CMR
If answer to all questions is NO, substance is not toxic  Is sufficient data available? (if not assume substance is toxic)	Yes			
is sumicient data available? (if not assume substance is toxic) is substance toxic?	No No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?				
Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≿ 60 days	No data (see comment)		ESR	No specific information was available on tetrapotassium ethylenediamine tetracetate. However data was available for the similar substance tetrasodium ethylenediamine tetracetate and therefore this has been used to assess the potassium form. No half life data was reported. However results reported in ECHA-CHEM noted a range of degradation rates wis now inclinating 0-10% degradation or 70days. In addition in the ESR the degradation rate are noted to be used in modelling was noted to be infinity. Although the degradation data reports a range of degradation rates the weight of evidence indicates that it any meet the criteria for persistence and has therefore been noted as pensistent for this assessment.
				modulos titul ti may mode tro orienta tel persistente arta mas steretare occir neces as persistent to sino assessment
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days If answer to any question is VES, substance is very persistent				indicated that it may most the criticals for productions and made production became the state decountered.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days	No	1.8	ECHA-CHEM, ESR	No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days ### granter for any question is VES, substance is very persistent Is bioconcentration factor ≥ 5000	No <b>No</b>	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer to any question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 If answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?	No	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer to any question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 If answer is ves, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 year Does groundwater monitoring data show half life in groundwater ≥ 1 year Does Syb of groundwater samples show levels of the substance greater than the	No Not assessed	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days # answer in you question is YES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does sroundwater monitoring data show half life in groundwater ≥ 1 year Does croundwater monitoring data show half life in groundwater ≥ 1 year Does Stown of the standard provided in sales to the standard provided in the top of the standard provided in sales to the sales to the substance greater than the DOE Doe S 15% of sites have at least one sample where the substance is detected above the LOG?	No Not assessed	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer to any question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 If answer is ves, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does groundwater monitoring data show half life in groundwater ≥ 1 vear Does froundwater monitoring data show half life in groundwater ≥ 1 vear Doe S 5% of groundwater samples show levels of the substance greater than the LOQ?	No Not assessed Not assessed	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days # answer far you question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is ves, substance is very bioaccumulative Is substance very persistent and very bioaccumulative  los substance pose a specific risk to groundwater?  Does roundwater monitoring data show half life in prundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the LOQ?  Do ≥ 15% of sites have at least one sample where the substance is detected above the LOQ? # answer to any question is VES, substance is persistent in groundwater # substance is persistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, bioaccumulative AND toxic,	Not assessed Not assessed Not assessed Not assessed	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer far you question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 If answer is ves, substance is very bioaccumulative Is substance very persistent and very bioaccumulative Is substance very persistent and very bioaccumulative?  Does obstance pose a specific risk to groundwater?  Does or soundwater monitoring data show half life in proundwater ≥ 1 year Doe 55% of groundwater samples show levels of the substance greater than the LOQ?  Doe 15% of siles have at least one sample where the substance is detected above the LOQ? If answer to any question is YES, substance is persistent in groundwater?  If substance is persistent in groundwater?  If substance is persistent in groundwater?  If substance is paraidous  Does substance pose a specific risk to groundwater?	No Not assessed Not assessed Not assessed	1.8	ECHA-CHEM, ESR	
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer to any question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 If answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater monitoring data show half life in groundwater ≥ 1 vear Do ≥ 5% of groundwater samples show levels of the substance greater than the LOG?  Do≥ 15% of sites have at least one sample where the substance is detected above the LOG? If answer to any question is VES, substance is persistent in groundwater If substance is persistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, Is substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance is threshold for	Not assessed Not assessed Not assessed Not assessed	1.8		
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer far yeaston is YES, substance is very persistent Is bioconcentration factor ≥ 5000  # answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does sroundwater monitoring data show half life in groundwater ≥ 1 year Does sroundwater monitoring data show half life in groundwater ≥ 1 year Doe ≥ 5% of groundwater samples show levels of the substance greater than the Do≥ 15% of sites have at least one sample where the substance is detected showe the LOO? # answer to any question is YES, substance is persistent in groundwater? # substance is persistent in groundwater, bioaccumulative AND toxic, substance is para groundwater Is substance pose a specific risk to groundwater? Is substance pose a specific risk to groundwater?	No Not assessed Not assessed Not assessed Not assessed Not assessed	1.8		No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days If answer far youeston is VES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does substance poses a specific risk to groundwater?  Does designative monitoring data show half life in groundwater ≥ 1 vear Do≥ 5% of groundwater samples show levels of the substance greater than the DO?  Do≥ 15% of siles have at least one sample where the substance is defected above the LOQ? # answer to any question is VES, substance is persistent in groundwater # substance persistent in groundwater? # substance is persistent in groundwater? # substance persone a specific risk to groundwater? # substance persone a specific risk to groundwater? # substance pose a specific risk to groundwater? # substance very toxic?	No Not assessed Not assessed Not assessed Not assessed Not assessed	1.8		No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days ### grawer for any question is YES, substance is very persistent ### grawer for any question is YES, substance is very persistent ### lis bioconcentration factor ≥ 5000 ### answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does caroundwater monitoring data show half life in groundwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the DOP = 15% of sites have at least one sample where the substance is detected showe the LOQ? ####################################	No Not assessed Not assessed Not assessed Not assessed Not assessed Not assessed	1.8		No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days # farawer to any question is YES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does groundwater emolitoring data show half life in condwater ≥ 1 year Do ≥ 5% of groundwater samples show levels of the substance greater than the LOC? Do≥ 15% of sites have at least one sample where the substance is detected above the LOC? # farawer to any question is YES, substance is persistent in groundwater # substance is persistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, Is substance very toxic?  Is substance very toxic? # answer to any question is YES, substance is every toxic and hazardous # answer to any question is YES, substance is very toxic and hazardous # answer to any question is YES, substance is very toxic and hazardous # answer to any question is YES, substance is very toxic and hazardous # answer to any question is YES, substance is very toxic and hazardous # answer to any question is YES, substance is very toxic or toxic and hazardous # answer to any question is YES, substance is very toxic? # Is substance very toxic?	No Not assessed Not assessed Not assessed Not assessed Not assessed Not assessed	1.8		No data was located for tetrapotasisium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria. An EU harmonised C&L classification is available for tetrasodium ethylenediamine tetraacetate which indicates it does not meet these criteria.  No specific information was located for tetrapotassium ethylenediamine tetraacetate. However data was available for the sodium form and it is considered a similar compound and therefore the data can be used to undertake the assessment for the potassium form. The data
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days # answer far you question is VES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is ves, substance is very bioaccumulative Is substance very persistent and very bioaccumulative Is substance very persistent and very bioaccumulative?  Does stubstance pose a specific risk to groundwater?  Does groundwater amplies show levels of the substance greater than the LOG?  Doe 15% of sites have at least one sample where the substance is detected above the LOG? # answer to any question is VES, substance is persistent in groundwater # substance is persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater, Is substance pose a specific risk to groundwater?  Is substance very toxic?  Is substance is persistent in groundwater, bioaccumulative AND toxic, substance effects on human health # answer to any question is VES, substance is very toxic and hazardous  B substance hazardous (if that 1A, 1B,2) or have no determinable threshold for adverse effects on human health # answer to any question is VES, substance is very toxic and hazardous  Is substance hazardous to groundwater?  Is substance hazardous, if so, state on what basis  Does substance hazardous, if so, state on what basis  Does substance hazardous, if so, state on what basis  Does substance hazardous on known key breakdown products will be undertaken if known. It is acknowledged in the methodocky that it is not possible to assess	No Not assessed No No No No	1.8		No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria. An EU harmonised C&L classification is available for tetrasodium ethylenediamine tetracetate which indicates it does not meet these criteria.  No specific information was located for tetrapotassium ethylenediamine tetracetate. However data was available for the sodium form and it.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days Half life in soil ≥ 180 days # answer is youeston is YES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is yes, substance is very bioaccumulative  Is substance very persistent and very bioaccumulative?  Does quoundwater monitoring data show half life in groundwater ≥ 1 vear Doe 5% of grannowater samples show levels of the substance greater than the DO? Doe 15% of sites have at least one sample where the substance is defected above the LOQ? # answer to any question is YES, substance is persistent in groundwater # substance presistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater, # substance is persistent in groundwater, Does substance pose a specific risk to groundwater?  Is substance wery toxic?  Is substance wery toxic?  Is substance very toxic?  Is substance very toxic?  Is substance very toxic?  Is substance have did not sesume substance is very toxic and hazardous Is sufficient data available? (if not assume substance is very toxic) Is substance hazardous, if so, state on what basis  Does substance hazardous, if so, state on what basis	No Not assessed Not assessed Not assessed Not assessed Not assessed No assessed No	1.8  7. Xn:R482021. Cat. 2, Muta. C	ECHA CLP database	No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria. An EU harmonised CAL classification is available for tetrascolum ethylenediamne tetrascotate which indicates it does not meet the criteria.  No specific information was located for tetrapotassium ethylenediamine tetrascotate. However data was available for the sodium form and it is considered a similar compound and therefore the data can be used to undertake the assessment for the potassium form. The data indicates it does not meet the criteria.
Half life in marine, fresh or estuarine sediment ≥ 180 days Half life in soil ≥ 190 days Hanswer to any question is YES, substance is very persistent Is bioconcentration factor ≥ 5000 # answer is yes, substance is very bioaccumulative Is substance very persistent and very bioaccumulative?  Does substance pose a specific risk to groundwater?  Does caroundwater emolitoring data show half life in proundwater ≥ 1 year Do ≥ 510 of groundwater samples show levels of the substance greater than the CO2? Do ≥ 150 of groundwater samples show levels of the substance greater than the CO2? Do ≥ 150 of soils have at least one sample where the substance is detected shows the CO2? Is substance persistent in groundwater, bioaccumulative AND toxic, substance is persistent in groundwater, bioaccumulative AND toxic, substance is parsistent in groundwater, bioaccumulative AND toxic, substance persistent in groundwater, bioaccumulative AND toxic, substance very toxic?  Is substance nutsgenic (Muta 1A, 18,2) or have no determinable threshold for adverse effects on human health # answer to any question is YES, substance is very toxic and hazardous is substance wery toxic?  Is substance hazardous, if so, state on what basis  Does substance have known breakdown products will be undertaken if known. It is acknowledged in the methodology that is no prossible to assess overy breakdown products by the products of concern? **Celebrating and the products of concern?** **Celebrating and the products of concern?** **Celebrating and the products of concern?* **Celebrating and the products of concern?* **Celebrating and the products of concern?* **Celebrating and the products of c	No Not assessed Not assessed Not assessed Not assessed Not assessed No assessed No	. Cat. 2, Muta. C	ECHA CLP database  22. Xn:R682002122) at. 3, T.R46, T.R68, toolc	No data was located for tetrapotassium ethylenediamine tetracetate however data was available for the sodium form. Two BCF values were located. One reported at BCF of 1.8 and the other 1.1  An EU harmonised CLP classification is not available for this substance. Industry submissions to the database indicate that it does not meet the criteria. An EU harmonised C&L classification is available for tetrasodium ethylenediamine tetrascetate which indicates it does not meet these criteria.  No specific information was located for tetrapotassium ethylenediamine tetrascetate. However data was available for the sodium form and it is considered a similar compound and therefore the data can be used to undertake the assessment for the potassium form. The data indicates it does not meet the criteria.

SUMMARY: NON-HAZARDOUS	Yes / No / Insufficent data / Borderline / assume yes or no?	Value	Reference	Tetrasodium ethylenediamine tetraacetate (CAS: 64-02-8)  Comments
Is substance persistent, bioaccumulative and toxic?	assume yes or no.			
Persistence Passes ready biodegradation test	No		EU ESR (2004)	The available data reported that tetrasodium ethylenediamine tetrascetate is not readily biodegraded with degradation of 0-10% being reported
Passes inherent biodegradation test If answer to either question is YES, substance is not persistent If answer to both duestions is NO. additional data on half life is required				
Half life marine water ≥ 60 days Half life fresh or estuarine water ≥ 40 days Half life marine addiment ≥ 180 days Half life fresh or estuarine sediment ≥ 120 days Half life fresh or estuarine sediment ≥ 120 days Half life in 501 ≥ 120 days # answer to any question is YES, substance is persistent # answer to all question is NO, substance is not persistent # answer to all questions is NO, substance is not persistent	No data		EU ESR (2004)	Degradation half life data for water was not available. Predictions have been made as part of the risk assessment. The predicted half life data for water was noted to be for the iron complex and to be based on data for photolysis. These half lives were not to be in the order of 20days. However it is noted not all forms will undergo photolysis with some being stable. The predicted half lives for sediment were noted as 200-300days. In the absence of data it is therefore proposed that EDTA would meet the criteria for persistence.
Is sufficient data available? (if not assume substance is persistent)  Is substance persistent?	Yes			
Bioaccumulation Bioconcentration factor (BCF) for aquatic species (wet weight) ≥ 2000 Does field data show evidence for biomagnification? ## answer to either question is *VES, substance is bioaccumulative*	No	1.8	EU ESR (2004)	Two BCF values were located. One reported at BCF of 1.8 and the other 1.1 - both for the fish Lapomis macrochirus
If no BCF data, is log Kow ≥ 4.5? If answer is YES, substance is bioaccumulative	No data located			
Does the weight of evidence from the following criteria indicate bioaccumulation unlikely? Substance is chronically non-toxic in mammals Molecular size 2 4.3mm Molecular weight 1:100g/mol Octanol solubility 5.0002mmol/l # weight of evidence indicates bioaccumulation unlikely (i.e. YES answers) substance is not bioaccumulative # weight of evidence indicates bioaccumulation a possibility (i.e. NO answers),	Not considered due to the above information			
BCF data should be obtained  Is sufficient data available? (if not assume substance bioaccumulates)	Yes			
Is substance bioaccumulative?	No			
Toxicity				
Is the lowest chronic NOEC for freshwater or marine organisms ≤ 0.01mg/l	No	25mg/l	EU ESR (2004)	A 21d NOEC of 25mg/l was reported for the invertebrate Daphnia magna. Chronic data was also available for algae and fish with a 3d NOEC of 79mg/l reported for the alga Pseudokirchneriella subcapitata and a NOEC of x37mg/l reported for the fish Danio rerio. This chronic data indicates the criteria is not met.
Is there substantial evidence of long term toxicity (STOT RE1 or STOT RE2)	No		ECHA C&L database	An EU harmonised C&L classification is available which indicates it does not meet the criteria for long term toxicity
Is substance carcinogenic (Carc 1A,1B), mutagenic (Muta 1A, 1B) or toxic for reproduction (Repr 1A, 1B, 2)	No		ECHA C&L database	An EU harmonised C&L classification is available which indicates it does not meet these criteria
If answer to any question is YES, substance is toxic If answer to all questions is NO, substance is not toxic				
Is sufficient data available? (if not assume substance is toxic) Is substance toxic?	Yes No			
IS SUBSTANCE PERSISTENT, BIOACCUMULATIVE AND TOXIC?	No			
Does substance pose an equivalent level of concern?  Very persistent and very bioaccumulative?				
Half life in marine, fresh or estuarine water ≥ 60 days  Half life in marine, fresh or estuarine sediment ≥ 180 days  Half life in soil ≥ 180 days  if answer to any question is YES, substance is very persistent	No		EU ESR (2004)	Degradation half life data for water was not available. Predictions have been made as part of the risk assessment. The predicted half life data for water was noted to be for the iron complex and to be based on data for photolysis. These half lives were not to be in the order of 20ys. However it is noted not all forms will undergo photolysis with some being stable. The predicted half lives for sediment were noted as 200-300days. In the absence of data it is therefore proposed that EDTA would meet the criteria for persistence.
Is bioconcentration factor ≥ 5000	No	1.8	EU ESR (2004)	Two BCF values were located. One reported at BCF of 1.8 and the other 1.1
If answer is yes, substance is very bioaccumulative				
Is substance very persistent and very bioaccumulative?	No			
Does substance pose a specific risk to groundwater?  Does croundwater monitorino data show half life in croundwater ≥ 1 vear  Do ≥ 5% of groundwater samples show levels of the substance greater than the  LOC?	Not assessed Not assessed			
Doc 15% of sites have at least one sample where the substance is detected above the LOQ?  ### answer to any question is YES, substance is persistent in groundwater is substance persistent in groundwater?	Not assessed			
If substance is persistent in groundwater, bioaccumulative AND toxic, substance is hazardous  Does substance pose a specific risk to groundwater?	Not assessed			
Is substance very toxic?  Is substance mutagenic (Muta 1A, 1B,2) or have no determinable threshold for adverse effects on human health	No		ECHA C&L database	An EU harmonised C&L classification is available which indicates it does not meet these criteria
If answer to any question is YES, substance is very toxic and hazardous				
Is sufficient data available? (if not assume substance is very toxic) Is substance very toxic?	Yes No			
Is substance hazardous to groundwater?				
Is substance hazardous, if so, state on what basis	No			
# equivalent risk phrases: T;R23/24/25, T+;R26/27/28 (does not include Xr; R24* equivalent risk phrases T;R39/23/24/25, T+;R26/27/28, T;R48/23/24/25 (does Aequivalent risk phrases caricopanic Carc. Cat. 1, Carc. Cat. 2, T;R45, T;R49, (does not include Carc. Cat. 3, Xr;R40, Repr. Cat. 3, Xr;R62, Xr;R63)	not include R33, R67, Xi; R3	7, Xn;R4820/21/ . Cat. 2, Muta. C	22, Xn;R68/20/21/22) at. 3, T;R46, T;R68, toxic	for reproduction Repr. Cat. 1, Repr. Cat. 2., R60 , R61
Does substance have breakdown products of concern?  REFERENCES	No			
ECHA C&L database ECHA-CHEM EU ESR (2004)	http://echa.europa.eu/inform http://echa.europa.eu/registr http://echa.europa.eu/docun	ation-dossier/-/re ents/10162/415	gistered-dossier/15231 :121b-12cd-40a2-bd56-8	12c57c303ce
OECD SIDS (2004)	http://webnet.oecd.org/Hpv/	Jl/handler.axd?id	=ba21a7be-abf5-4d11-a5	58b-ebb9687cf75d