

12 June 2012

Dear Mrs. Forbes,

Proposed EQS for Water Framework Directive Annex VIII substances: cyanide (free) (For consultation)

The Cyanides Sector Group of CEFIC thank the UK Environment Agency for the opportunity to comment on the proposed Environmental Quality Standards (EQS) for cyanide (free).

In terms of process we recognise that this report was commissioned as an update of the proposed EQSs for Water Directive Annex VIII substances: Cyanide (free)¹ produced in 2007 as part of a programme of work commissioned by the UK Technical Advisory Group (UKTAG) but respectfully request clarification as to how this proposal should be viewed in context of the recent and on-going review of Cyanides under the Water Framework Directive at EU level.

Since we only became aware of this UK activity very recently we have not had the opportunity to fully review the proposal but have for the sake of expediency relied extensively on comments submitted on behalf of CEFIC Cyanides sector group, CONCAWE, EUROMINES, EUROFER and SVEMIN to Helen Clayton of the EU WFD COM in late November of last year.

We note that in order to derive an EQS for Cyanide (free) the UKTAG had not performed a more recent literature review and based upon the studies identified for the 2007 report concluded that approximately 50 freshwater data points, and a similar number of data points were located for marine organisms, were available for cyanide. Furthermore, that the UKTAG had concluded that the existing data values (pre-2007) were unsuitable for use since they were subject to excessive uncertainty and that consequently an ecotoxicity study on the alga *Pseudokirchneriella subcapitata* (Environment Agency, 2008) was commissioned.

In regard to completeness of the database on cyanides we would like to bring to your attention the availability of the ECETOC Joint Assessment of Commodity Chemicals (JACC) report on Cyanides dated 2007¹ which contained an extensive review of ecotoxicity studies on Cyanides performed by Dr Hommen of the Fraunhofer Institute. This review contains numerous reliable (Klimisch rated 2 and above) studies not identified in the UKTAG literature search. Further to this we also point out the conclusion of the EU WFD COM in 2011 that the database on cyanides already contained reliable data representing 8 different major taxonomic groups but that according to REACH and WFD technical guidance data representative of a further two taxonomic groups, namely macrophytes and midges, were required before a Species Sensitivity Distribution (SSD) approach could be applied. In this regard we bring to your

¹ Cyanides of Hydrogen, Sodium and Potassium, and Acetone Cyanohydrin (CAS No. 74-90-8, 143-33-9, 151-50-8 and 75-86-5) JACC No. 53, (September 2007). ISSN-0773-6339-53. European Centre for Ecotoxicology and Toxicology of Chemicals, 4 Avenue E. Van Nieuwenhuysse (Bte 6), B-1160 Brussels, Belgium

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attention the fact that OECD guideline studies were completed on the macrophyte *Lemna gibba* and the midge *Chironomus riparius* by the CEPIC Cyanide Sector Group in agreement with the EU WFD COM in 2011. Lastly, we would like to bring to your attention newly identified studies on crustaceans that have been conducted in the USA under the US EPA Water Quality Standard process specifically to address the prior apparent high sensitivity of this taxonomic group.

It is our opinion that the database identified for the 2007 UKTAG report, even with the ecotoxicity study on the alga *Pseudokirchneriella subcapitata*, are lacking and the above mentioned data are critical to the evaluation and better address the inadequacies of the database identified by UKTAG.

These additional studies enable a much preferred SSD analysis to be performed according EU technical guidance. Such an analysis has been performed (Hommen, 2011) and submitted to the EU WFD COM in November 2011.

In terms of the technical proposal presented we firmly believe that it is preferable to establish an EQS for Cyanide based upon a SSD approach taking into account all the available data rather than an approach that relies on an incomplete dataset. In this respect we attach the report titled "Position paper on a refined SSD approach to derive EQS values for free cyanides" by the Fraunhofer Institute, 2011.

Since we were not aware of UKTAG's commissioning of an acute study on *Pseudokirchneriella subcapitata* we would be willing to update the analysis to take this study into account if a copy of the study report could be provided.

As we do not believe that a most sensitive species study approach is appropriate for cyanides and that the EU WFD COM is intending to establish an EQS for cyanide based upon a SSD approach we consider it inappropriate and unnecessary for us to provide exhaustive comment on the individual proposals and the assessment factors used at this stage. If the UKTAG intend to continue down this pathway we would kindly request the opportunity to submit specific technical comments in this regard.

In terms of the values currently being proposed by UKTAG we would kindly refer you to the table below and trust that you appreciate that since cyanide is naturally occurring in the environment with background levels occurring well above those being proposed by UKTAG, combined with technical limitations in the limit of detection/quantification and problems with distinguishing bound from free cyanide, that it is extremely important to develop water quality standards that are meaningful.

Receiving medium/exposure scenario	UKTAG Proposed PNEC ($\mu\text{g l}^{-1}$ HCN)	Hommen, 2011 proposed QS ($\mu\text{g l}^{-1}$ HCN)
Freshwater/long-term	0.26	1 (AA-QS)
Freshwater/short-term	2.8	3.2 (MAC-QS)
Saltwater/long-term	0.052	0.2 (AA-QS)
Saltwater/short-term	0.42	3.2 (MAC-QS)

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Finally, The UKTAG proposal mentions that the feasibility of implementing these proposed PNECs as EQSs has not been considered at this stage and that this would be an essential step before a regulatory EQS can be recommended. In this regard we would wish to bring to your attention our understanding that the CMEP subgroup of WG E, “chemical monitoring and emerging pollutants” has received a task from the EU WFD COM to look into monitoring of cyanides.

References:

Position paper on a refined SSD approach to derive EQS values for cyanides. 2011. Dr. U. Hommen, Fraunhofer-Institute for Molecular Biology and Applied Ecology (IME), 57377 Schmallenberg, Germany

Yours faithfully,
(No signature, sent electronically)

The Cefic Cyanide Sector group

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