

INFORMAL INQUIRY ON H14 ATTRIBUTION AND MIRROR ENTRIES

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Country, member state	Sweden
Organization (Ministry, Agency, University, Company, í)	ÄSvenska EnergiAskor AB (Swedish Branch Organisation for utilisation of ashes)
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Field of expertise (waste management, ecotoxicity, regulation, standardization, other (specify) <i>Many choices possible</i>	Recycling, ash utilisation applications, environment and health protection, regulation, geochemistry and mineralogy, combustion and incineration, standardisation
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Regulatory attribution of Hazard criteria	
Do you have in your country (member state) a regulation setting criteria for the attribution of the 14 hazard criteria (Directive 91/689) ?	Yes, for H14, see below
Reference ?	Avfallsförordningen SFS 2001:1063
Is this regulation applicable for the delisting of hazardous waste or the upgrading of non hazardous waste ?	Both
Is this regulation applicable for the choice between the hazardous and the non hazardous among mirror entries ? ?	Yes
In this regulation for which criteria do you have limit values ?	H1 ó H13

H14	
For H14, could you qualify the method recommended (physico-chemical analysis, bio-assays, other, í ?)	None
If bioassays are recommended could you list them ? or give indication on their nature (level of effect (acute, chronic), aquatic or terrestrial organisms,í)	-

H14	
Do you have limit values for these bioassays ? (please specify the unit (LC50, EC20í)	no

<p>If there is no official regulatory requirement for this criterion, is there a working group preparing a draft ?</p> <p>If yes, could you explain very briefly the nature of the project and the tendency in term of experimental assessment ?</p>	<p>No</p>
<p>If there is no project in this field in your country how could you qualify the position of your national authority on this subject ? Favourable to the development of a H14 methodology based on bioassays ? Indifferent ? Against</p>	<p>There is international co-operation with other EU countries on the part of the Swedish EPA. It is expected that the Round Robin (ring) tests on ecotoxicity will provide basis for regulation. They are to be completed by the end of 2007.</p>
<p>If åagainstö, could you express why ?</p>	<p>-</p>
<p>What is your opinion ? <i>(feel free to use another page if necessary)</i></p>	<p>It is not for us to have opinions about our Competent Authorities.</p> <p>See below for the rationale for what we do.</p>

Firstly, we would like to thank you for your excellent initiative to compile the existing situation on classification of waste with regard to the issue of ecotoxic properties. We have sought international contacts on this in several ways including publishing the following articles (see enclosure):

- É Sjöblom R, Tham G, Haglund J-E and Sjöö C
Environmental qualification of ash from wood-based recycled fuels for utilization in covers for landfills. Kalmar ECO-TECH05 and the Second Baltic Symposium on Environmental Chemistry. Kalmar, Sweden, November 28-29, 2005.
- É Sjöblom R, Tham G, Haglund J-E and Ribbing C
Classification of waste according to the European Union Directive 91/689/EEC on hazardous waste from a Swedish application perspective. CIWM Conference 12-16 June 2006, Paignton, Torbay, United Kingdom.

Our regulation in Sweden is Avfallsförordningen (ordinance of waste) SFS 2001:1063. It states closely the same things as the EU Directive 91/689/EEC but has some statements in addition. The most important one is that waste that is to be classified as non-hazardous must not be ecotoxic. There is no guidance provided, however, as to how this might be assessed.

Before addressing H14 specifically, please allow us to illuminate some other difficulties with the regulations and how we have addressed them. For most of the properties H1-H13 (and for mirror entries in the EWC) reference is made to the legislation on the labelling of chemical products. The limits are similar but simpler and somewhat less strict as compared to labelling of a product as hazardous.

For ashes, this methodology is impossible to apply without interpretation since direct testing would imply enormous work on the highly variable ashes leading in practice to classification of everything as hazardous, and computation using known hazards of the constituents is

unfeasible. The latter is the case because the chemical form is very complex and the actual species do not appear in the existing data bases for hazards of various substances.

Since the Ash branch is anxious to comply with all legislation and also act in accordance with all its intents, considerable work has been geared into finding a methodology that in a cautious but practicable way makes it possible to comply with both the requirement of protection of health and environment and that of conservation, both of which exist in the basic legislation in Sweden. The report describing the methodology is in Swedish, but the above mentioned papers are in English and describe the methodologies in general.

For ecotoxicity, we have concluded that it would be inappropriate if we were to attempt to assume the role of the Legislators and Competent Authorities and issue or recommend limits. However, it is appropriate that we grab whatever guidance is given and also to compare with other regulations such that what we put forward is at least not unreasonable in such a perspective. Consequently, one of the conclusions is that since labelling with symbols of hazard for chemical products is never (in practice) less strict than what constitutes hazardous waste for the quantified criteria, it would be appropriate to apply the same approach for ecotoxic hazards, as a voluntary measure.

Unfortunately, our EPA has repudiated this approach on ecotoxic properties, not formally, but as an expression of their opinion in a special case.

It is being explained to us that hopes are nourished as to the effect that once the Round Robin tests are completed by the end of the year 2007, a basis might exist for testing by living organisms.

We too have great hopes for what may result from such work, and we are convinced that they must somehow form the basis for assessment of ecotoxicity. However, it is important that the complexity of the undertaking is not underestimated¹, and we fear that there may be yet at least another several years before new legislation might be in force. Moreover, in order for legislation to serve its purpose, it must be possible to implement in practice. It is difficult to see how this can be achieved without a combination of biological testing and chemical analyses where some of the biological testing should be generic in nature.

In the meantime, one million tonnes of ash is generated annually in Sweden alone. It is imperative that immediate action is taken on both the short and the long term classification issues.

¹ As we are confident that you are well aware, there are a number of pitfalls and treacherous circumstances that will have to be managed and resolved. Living organisms have specific requirements on their habitats, not to be confused with ecotoxicity. E.g ordinary salts of hydrochloric, sulphuric and carbonic e t c acids are not ecotoxic by any standard but can nonetheless have a catastrophic effect on those species who prefer fresh water type of conditions. Moreover, the composition of soluble non-ecotoxic species - including the lack of them - may have a profound influence on the effect of the ones that are actually toxic. Any methodology that is intended to be used for the differentiation between ecotoxic and non-ecotoxic recycled material must therefore address any such issues, or else it becomes impossible to comply with the simultaneous requirements on health and safety as well as conservation. Furthermore, it is essential that the differences be addressed between aged and initial conditions as well as between *in vitro* and *in situ* conditions. Examples of the significance of such differences can be found in: Lennart Lindeström: *The Environmental History of the Falun Mine*. Stiftelsen Stora Kopparberget 2002, printed in 2003. ISBN 91-631-3536-1.