

Revision of the List of Waste

Practical implications of the application of CLP concentration limits on the hazardous properties of waste

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HP4 “Irritant” and HP8 “corrosive”

- ▶ Some main facts:
 - ▶ Present Article 2 LOW deviates significantly from current chemicals legislation (concerning concentration limits and addition of concentrations)
 - ▶ CLP distinguishes reversible and irreversible effects and the affected organ (eye, skin)
 - ▶ Identified skin effects contribute to the classification of eye effects
 - ▶ pH is included as a classification criterion



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HP4 “Irritant” and HP8 “corrosive”

- ▶ Proposals of definitions for an alignment of waste legislation with chemicals legislation:
 - ▶ Proposal of a definition based on the differentiation criterion of the reversibility of the effects between irritant/eye dam. Cat 2 and Corr. Cat 1/Eye dam. Cat 1:

HP 4 “Irritant” : Waste which on application can cause reversible damage to the skin or to the eye.

HP 8 “Corrosive” : Waste which on application can cause irreversible damage to the skin or to the eye.

- ▶ Alternative proposal based on “old” approach to classify “R41: Risk of serious damage to eyes” as an irritating effect (Xi) and therefore keep it in HP 4 “Irritant”

HP 4 “Irritant” : Wastes which on application can cause reversible or irreversible damage to the to the eye, or reversible damage to the skin.

HP 8 “Corrosive” : Wastes which on application can cause irreversible damage to the skin

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HP4 “Irritant” and HP8 “corrosive”

- ▶ Classification criteria (intended to be included in Article 2):
- ▶ HP 4 “Irritant”

<i>CLP Category</i>	<i>CLP H-statements (other criteria)</i>	<i>Concentration limit</i>	<i>Cut off Limits</i>	<i>Further comments</i>
Skin Irrit. 2	H 315	10%	1.0 %	$10 \times (\sum cH314 + \sum cH318) + \sum cH319 \geq 10\%$ (Note: substances classified H315 will be considered H319 by definition)
Eye Irrit. 2	H 319		1.0 %	
Skin Corr. 1A	H 314		1.0 %	
Skin Corr. 1B				
Skin Corr. 1C				
Eye Dam. 1	H 318	1.0 %		

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- ▶ HP 8 “Corrosive”

<i>CLP Category</i>	<i>CLP H-statements (other criteria)</i>	<i>Concentration limit</i>	<i>Cut off Limits</i>	<i>Further comments</i>
Skin Corr. 1A Skin Corr. 1B Skin Corr. 1C	H 314	3%	1%	$(\sum c H314 + \sum c H318) \geq 3\%$
Eye Dam. 1	H 318		1%	
Acid pH ≤ 2	-	1%	1%	-
Base pH $\geq 11,5$	-	1%	1%	-

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HP4 “Irritant” and HP8 “corrosive”

- ▶ Open issues in the discussion:
 - ▶ Impacts of an stricter of concentration limits (currently concentration limits of Article 2 LOW already deviate from old chemical legislation)
 - impacts of such an approach cannot be anticipated
 - ▶ Summation of substance concentrations across hazard categories is not implemented in Article 2 of LOW (would in fact also lead to stricter concentration limits)
 - impacts of such an approach cannot be anticipated
 - ▶ introduction of pH is seen as critical (at least high pH) as high pH is considered favourable in waste as it decreases leaching
 - ▶ Consequences of other provisions from CLP are unclear (concentration limits for substances for which the additivity principle does not apply → impacts of such an approach cannot be anticipated, no example of such a case known)

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HP13 “Sensitizing”

- ▶ *HP 13 “Sensitising” Waste which contains a substance known to cause sensitising effects to the skin or the respiratory organs”*
- ▶ Criterion is seen as not suited for waste → COM: questionable whether deletion of HPs from Annex III WFD is covered by the mandate of the current WG process
- ▶ MS interpret note 1 of WFD in a way that sensitising is not addressed therefore no alignment with CLP is mandatory
 - ▶ ⇒ proposal of concentration limit for classification of waste of 10 %
 - ▶ ⇒ alternative proposal 1 %

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HP14 “Ecotoxic”,

- ▶ *HP14 “Ecotoxic”: Wastes which present or may present immediate or delayed risks for one or more sectors of the environment.*
- ▶ Adaption to CLP intended:
 - ▶ Ozone depleting substances will be covered by a concentration limit of 0.1 %
 - ▶ Toxicity via the aquatic environment is intended to be covered by using calculation methods of the CLP
 - ▶ $(M \times 100 \times \text{Chronic 1}) + (10 \times \text{Chronic 2}) + \text{Chronic 3} \geq 25 \%$
 - ▶ $\text{Chronic 1} + \text{Chronic 2} + \text{Chronic 3} + \text{Chronic 4} \geq 25 \%$
 - ▶ Controversial: application of the M-factor principle
- ▶ Toxicity according to a fixed test battery (including test on terrestrial organisms) are intended to be included → Aim: overruling the result from calculation (negative testing would lead to no classification)
 - ▶ Not CLP!

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HP6 “Toxic”

- ▶ *HP6 “Acute toxicity”*: Wastes that contain one or more substances in such quantities that they can cause severe acute toxic effects following oral or dermal administration or inhalation exposure
- ▶ Definition is agreed on among the WG members
- ▶ Covers only acute toxic effects 1 – 4 from CLP (STOT and aspiration will be covered by HP5)
- ▶ Controversial: summation methods across hazard categories (Article 2 LOW at the moment sets isolated concentration limits for toxic, very toxic and harmful but very toxic substances do not contribute to the classification of toxic or harmful, neither does toxic contribute to harmful either)

HP6 “Toxic”


- ▶ Proposal for an assessment of waste:

CLP Category	CLP H-statements (other criteria)	Cut off Limits	Concentration limit	Further comments
Acute Tox. 1, Acute Tox. 2	H 300, H 310, H 330	0.1%	25% (oral) 55% (dermal) 22.5% (inhalation gas) 55% (inhalation, vapor) 30% (inhalation, dust/mist)	Additivity needs to be considered by one of the following formulae for the various pathways: Acute Tox. Oral = $\sum c \text{ cat } 1 \times 1000 + \sum c \text{ cat } 2 \times 100 + \sum c \text{ cat } 3 \times 5 + \sum c \text{ cat } 4 \times 1 \leq 25.0\%$ Acute Tox. Dermal = $\sum c \text{ cat } 1 \times 220 + \sum c \text{ cat } 2 \times 22 + \sum c \text{ cat } 3 \times 3.67 + \sum c \text{ cat } 4 \times 1 \leq 55.0\%$ Acute Tox. Gases = $\sum c \text{ cat } 1 \times 450 + \sum c \text{ cat } 2 \times 45 + \sum c \text{ cat } 3 \times 6.43 + \sum c \text{ cat } 4 \times 1 \leq 22.5\%$ Acute Tox. Vapour = $\sum c \text{ cat } 1 \times 220 + \sum c \text{ cat } 2 \times 22 + \sum c \text{ cat } 3 \times 3.67 + \sum c \text{ cat } 4 \times 1 \leq 55.0\%$ Acute Tox. Dust/Mist = $\sum c \text{ cat } 1 \times 300 + \sum c \text{ cat } 2 \times 30 + \sum c \text{ cat } 3 \times 3 + \sum c \text{ cat } 4 \times 1 \leq 30.0\%$
Acute Tox. 3	H 301, H 311, H 331	0.1%		
Acute Tox. 4	H 302, H 312, H 332	1%		

H15
Chris Hall (UK)
(slightly amended)

by any means whatsoever –
any type of reaction no matter
how odd and over lots of steps?

**“waste capable
by any means
after
disposal of yielding
another substance e.g. a leachate
which possesses any of the characteristics
listed above”**

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H15


- ▶ High degree of uncertainty
- ▶ Diverging interpretation in Member States
- ▶ Implemented and actively applied in 7 Member States

HP15

- ▶ Proposal
- ▶ **“waste capable of exhibiting a hazardous property listed above [during storage or treatment] not directly displayed by the original waste”**
- ▶ Article 2 of LoW link to substances with specified EUHXXX hazard statements only.

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Back UP – derivation of equations for HP 6 assessment

- ATE estimates are different categories could serve as factors for the classification of wastes. ATE estimate for oral toxicity are

	Factor			
	Cat 1 (0.5)	Cat 2 (5)	Cat 3 (100)	Cat 4 (500)
Cat 1 (0.5)	1	-	-	-
Cat 2 (5)	10	1	-	-
Cat 3 (100)	200	20	1	-
Cat 4 (500)	1000	100	5	1

- These would result in the following equations (Oral pathway):
 - Cat 1 = $\sum c \text{ cat } 1 \times 1 \leq 0.1\%$
 - Cat 2 = $\sum c \text{ cat } 1 \times 10 + \sum c \text{ cat } 2 \times 1 \leq 0.25\%$
 - Cat 3 = $\sum c \text{ cat } 1 \times 200 + \sum c \text{ cat } 2 \times 20 + \sum c \text{ cat } 3 \times 1 \leq 5\%$
 - Cat 4 = $\sum c \text{ cat } 1 \times 1000 + \sum c \text{ cat } 2 \times 100 + \sum c \text{ cat } 3 \times 5 + \sum c \text{ cat } 4 \times 1 \leq 25\%$
- similar to this calculations have to be applied to the other pathways and physical states

Exposure routes	Classification category or experimentally obtained acute toxicity range estimate	Converted acute toxicity point estimate (see Tab 1)
Oral (mg/kg bodyweight)	0 < Category 1 ≤ 5	0.5
	5 < Category 2 ≤ 50	5
	50 < Category 3 ≤ 300	100
	300 < Category 4 ≤ 2000	500
Dermal (mg/kg bodyweight)	0 < Category 1 ≤ 40	5
	50 < Category 2 ≤ 200	50
	200 < Category 3 ≤ 1000	300
Gases (ppmV)	1000 < Category 4 ≤ 2000	1100
	0 < Category 1 ≤ 100	10
	100 < Category 2 ≤ 500	100
	500 < Category 3 ≤ 2500	700
Vapours (mg/l)	2500 < Category 4 ≤ 20000	4500
	0 < Category 1 ≤ 0.5	0.05
	0.5 < Category 2 ≤ 2	0.5
Dust/mist (mg/l)	2.0 < Category 3 ≤ 10.0	3
	10.0 < Category 4 ≤ 20.0	11
	0 < Category 1 ≤ 0.05	0.005
	0.05 < Category 2 ≤ 0.5	0.05
	0.5 < Category 3 ≤ 1.0	0.5
	1.0 < Category 4 ≤ 5.0	1.5

Note 1: These values are designed to be used in the calculation of the ATE for classification of a mixture based on its components and do not represent test results.