UN/SCETDG/46/INF.22
UN/SCEGHS/28/INF.14

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

14 November 2014

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-sixth session

Geneva, 1– 9 December 2014

Item 8 (i) of the provisional agenda

Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals: Miscellaneous

Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals

Twenty-eight session

Geneva, 10 – 12 (morning) December 2014

Item 2 (h) of the provisional agenda

Classification criteria and related hazard communication: Miscellaneous

Updating of references to OECD guidelines

Transmitted by the Organisation for Economic Cooperation and Development (OECD)

Introduction

1. The following proposed changes reflect the evolution of OECD Test Guidelines since the adoption of the GHS in 2002. A number of draft Test Guidelines and guidance documents that were in preparation at that time have been published; other OECD Test Guidelines have been deleted. Therefore a systematic review of the text of the GHS was performed to identify paragraphs and references that required an update.

2. As a general remark, dated versions of OECD Test Guidelines should be avoided. Therefore, whenever possible, the date should be removed from the reference to specific Test Guidelines.

3. Most of the updates concern OECD Tests Guidelines referenced only in the GHS. However, one of the updates to the Tests Guidelines for determining the potential for bioaccumulation applies also to transport regulations, since the provisions for environmentally hazardous substances in Chapter 2.9 of the Model Regulations are taken from Chapter 4.1 in the GHS. The proposed amendment to the Model Regulations is listed as a consequential amendment to chapter 4.1, paragraph 4.1.1.5 of the GHS.

Proposal

4. Remove the date from the references to specific Test Guidelines whenever they appear in the GHS. This instruction does not apply to the list of references in the relevant appendices to annexes 9 and 10 where the date may still be indicated.

Rationale: This action would avoid the text of the GHS to make reference to an older version of a Test Guideline, when a newer version becomes available.

5. Amend the references to OECD Test Guidelines as indicated hereafter:

Chapter 3.3

Note (d) under Figure 3.3.1, amend as follows:

> "(d) Evidence from studies using validated protocols with isolated human/animal tissues or other non-tissue-based, validated protocols should be assessed. Examples of internationally accepted, validated test methods for identifying eye corrosives and severe irritants (i.e., Serious Eye Damage) include OECD Test Guideline 437 (Bovine Corneal Opacity and Permeability (BCOP)), ~~and~~ 438 (Isolated Chicken Eye (ICE)), **and 460 (Fluorescein leakage (FL))**. ~~Presently there are no validated and internationally accepted in vitro test methods for identifying eye irritation. A positive test result from a validated in vitro test on skin corrosion would lead to the conclusion to classify as causing serious eye damage~~;"

The attention of the Sub-Committee is brought to the fact that OECD Test Guidelines 437 and 438 now enable the identification of chemicals not requiring classification (version updated in 2013). Therefore the tiered evaluation in Figure 3.3.1 should be updated accordingly. This could be the subject of a more profound review of Chapter 3.3 in future.

Chapter 3.5

3.5.2.6 follows : Delete the reference to OECD 484 and amend the related footnote, as

> "3.5.2.6 Examples of *in vivo* somatic cell mutagenicity tests are[1] : Mammalian bone marrow chromosome aberration test (OECD 475) ~~Mouse spot test (OECD 484),~~ Mammalian erythrocytre micronucleus test (OECD 474)"
>
> Replace the footnote related to OECD 484 by the following:
>
> "[1] ~~This Test Guideline has been cancelled but may continue to be used until 2 April 2014.~~ OECD Test Guideline 484 (Mouse spot test) has been cancelled. Data obtained following this test guideline can still be used an are covered by the Mutual Acceptance of Data but no new test using this test guideline should be initiated.".
>
> **Rationale**: OECD TG 484 has been deleted and is not replaced as such.

Chapter 3.7

3.7.2.5.1 follows : Insert a reference to OECD Test Guideline 443 at the end of the paragraph as

> "3.7.2.5.1 A number of internationally accepted test methods are available; these include methods for developmental toxicity testing (e.g. OECD Test Guideline 414, ICH Guideline S5A, 1993), methods for peri- and post-natal toxicity testing (e.g. ICH S5B, 1995) and methods for one or two-generation toxicity testing (e.g. OECD Test Guidelines 415, 416**, 443**)".

Chapter 4.1

4.1.1.5 Insert a reference to OECD Test Guideline 123 at the end of the first sentence as follows:

"4.1.1.5 Bioaccumulation potential

The potential for bioaccumulation would normally be determined by using the octanol/water partition coefficient, usually reported as a log Kow determined by OECD Test Guidelines 107 ~~or~~**,** 117 **or 123**. "

Rationale: The OECD Test Guideline 123 (slow-stirring method) was adopted in 2006 for determining the octanol/water partition coefficient of substances with a high partition coefficient (i.e. up to 8.2).

Consequential amendment to the Model Regulations

Chapter 2.9, paragraph 2.9.3.2.5:

Insert a reference to OECD Test Guideline 123 at the end of the second paragraph as follows:

" 2.9.3.2.5 *Bioaccumulation* means [….]

The potential for bioaccumulation shall normally be determined by using the octanol/water partition coefficient, usually reported as a log K_{ow} determined according to OECD Test Guideline**s** 107**,** ~~or~~ 117 **or 123**."

Annex 9

A9.3.5.1 Amend as follows:

"A9.3.5.1 Valid aquatic toxicity tests require the dissolution of the test substance in the water media under the test conditions recommended by the guideline. In addition, a bioavailable exposure concentration should be maintained for the duration of the test. Some substances are difficult to test in aquatic systems and guidance has been developed to assist in testing these materials (DoE 1996; ECETOC 1996; and US EPA 1996). The OECD ~~is in the process of finalizing a~~ Guidance Document on Aquatic Toxicity testing of Difficult Substances and Mixtures (OECD, 2000)~~. This latter document.~~ is a good source of information on the types of substances that are difficult to test and the steps needed to ensure valid conclusions from tests with these materials."

Rationale: The Guidance Document was published in 2000 as a Monograph in the Series on Testing and Assessment, No. 23.

A9.5.2.4.2 Amend as follows:

"A9.5.2.4.2 Experimental determination of Kow

For experimental determination of Kow values, several different methods, Shake-flask, and HPLC, are described in standard guidelines, e.g. OECD Test Guideline 107 (1995); OECD Test Guideline 117 (1989); EEC A.8. (1992); EPA-OTS (1982); EPA-FIFRA (1982); ASTM (1993); ~~the pH metric method (OECD Test Guideline in preparation)~~. [……..].

With the slow-stirring method (OECD Test Guideline **123** ~~in preparation~~) a precise and accurate determination of Kow of compounds with log Kow of up to 8.2 is allowed ~~(OECD draft Guideline, 1998)~~."

Rationale: The pH-metric method was never finalised. The slow-stirring method was adopted in 20016 as OECD TG 123.

A9.5.3.2.1 Amend as follows:

"A9.5.3.2.1 Some substances are difficult to test in aquatic systems and guidance has been developed to assist in testing these materials (DoE, 1996; ECETOC 1996; ~~and~~ US EPA 1996; **OECD, 2000**). ~~OECD is in the process of finalizing a guidance document for the aquatic testing of difficult substances (OECD, 2000). This latter document~~ **The OECD Guidance Document on Aquatic Toxicity Testing of Difficult Substances and Mixtures (OECD, 2000), is also** a good source of information for bioconcentration studies, **in relation to** the types of substances that are difficult to test and the steps needed to ensure valid conclusions from tests with these substances. Difficult to test substances may be poorly soluble, volatile, or subject to rapid degradation due to such processes as phototransformation, hydrolysis, oxidation, or biotic degradation."

Appendix I, section 2.4.1, amend as follows:

"2.4.1 ~~At present, there is no OECD guideline on aqueous photodegradation, but a guidance document, concerning aquatic direct photolysis, is available (OECD, 1997). The Guidance Document is supposed to form the basis for a schedule guideline.~~ According to the definitions set out in **the** ~~this~~ Guidance Document **(OECD, 1997)**, phototransformation of compounds in water can be in the form of primary or secondary transformation, where the primary transformation (photolysis) can be divided further into direct and indirect photolysis. (….)".

Appendix I, section 2.4.2, amend as follows:

2.4.2 The currently available guidelines on phototransformation of chemicals in water are therefore OPPTS 835.2210 Direct photolysis rate in water by sunlight and **OECD Guideline 316 *Phototransformation of chemicals in water- direct photolysis,* and** OPPTS 835.5270 Indirect photolysis screening test. The OPPTS 835.2210 test **as well as OECD Guideline 316** use a tiered approach. (…)".

Appendix I, section 3.7.4, amend as follows:

"3.7.4 ~~Currently, two new OECD guidelines are being drafted on aerobic and anaerobic transformation in soil (OECD Test Guideline, 1999a) and in aquatic sediment systems (OECD Test Guideline 1999b), respectively.~~ **Two OECD Guidelines address aerobic and anaerobic transformation in soil and in aquatic sediments (OECD Test Guidelines 307 and 308, respectively).** The experiments are performed to determine the rate of transformation of the test substance and the nature and rates of formation and decline of transformation products under environmentally realistic conditions including a realistic concentration of the test substance. Either complete mineralization or primary degradability may be determined depending on the

analytical method employed for determining the transformation of the test substance."

Appendix III, section 2.2.1, amend as follows:

"2.2.1 […..] For highly lipophilic substances, which are slowly soluble in water, data obtained by employing a slow-stirring method are generally more reliable (De Bruijn *et al*., 1989; Tolls and Sijm, 1993; **OECD Guideline 123**~~OECD draft Guideline, 1998). The slow stirring method is currently being ringtested for development of a final OECD guideline~~."

Appendix V, section 2, reference to OECD Test Guideline 204 (1984)

Replace the footnote related to OECD 204 by the following:

"[1] ~~This Test Guideline has been cancelled but may continue to be used until 2 April 2014.~~ OECD Test Guideline 204 has been cancelled. Data obtained following this test guideline can still be used and are covered by the Mutual Acceptance of Data but no new test using this test guideline should be initiated."

Rationale: OECD TG 204 has been deleted and is not replaced as such.

Appendix V, section 2, reference to OECD Test Guideline 211, amend as follows:

"OECD Test Guideline 221 ~~(in preparation)~~"

Appendix V, section 3, amend the references to the OECD Test Guidelines listed hereafter as follows:

"OECD Test Guideline 303A - Simulation test - aerobic sewage treatment: Coupled units test. OECD guidelines for testing of chemicals. ~~Draft update available 1999~~"

"OECD ~~(1998). Aerobic and anaerobic transformation in aquatic sediment systems. Draft proposal for a new guideline, December 1999~~ **Test Guideline 308: Aerobic and Anaerobic Transformation in Aquatic Sediment Systems. OECD guidelines for testing of chemicals"**

"OECD ~~(1999). Aerobic and anaerobic transformation in soil. Final text of a draft proposal for a new guideline, October. 1999~~ **Test Guideline 307: Aerobic and Anaerobic Transformation in Soil"**

"OECD ~~(2000) Simulation test – Aerobic Transformation in Surface Water. Draft proposal for a new guideline, May 2000~~ **Test Guideline 309 Aerobic Mineralisation in Surface Water – Simulation Biodegradation Test. OECD guidelines for testing of chemicals"**

"OECD ~~draft Test Guideline, 1998. Partition Coefficient n-Octanol/Water Pow. Slow stirring method for highly hydrophobic chemicals. Draft proposal for an OECD Guideline for Testing of Chemicals~~ **Test Guideline 123: Partition Coefficient (1-Octanol/Water): Slow-Stirring Method. OECD guidelines for testing of chemicals"**

Appendix VI, section 1, reference to OECD 2000, amend as follows:

"OECD **(2000)**. ~~Revised Draft~~ Guidance Document on Aquatic Toxicity Testing of Difficult Substances and Mixtures, **Series on Testing and Assessment No.23,** OECD, Paris".