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

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

## Report of the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals on its thirty-fourth session

held in Geneva from 6 to 8 December 2017

### Contents

				Paragrapns	Page
I.	Atte	Attendance			3
II.	Ado	Adoption of the agenda (agenda item 1)			
III.	Classification criteria and related hazard communication (agenda item 2)				3
	A.	Work of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG) on matters of interest to the GHS Sub-Committee		. 8-13	3
		1.	Stability tests for industrial nitrocellulose	. 8	3
		2.	Testing of oxidizing substances	. 9	4
		3.	Use of the Manual of Tests and Criteria in the context of the GHS	. 10-11	4
		4.	Classification of desensitized explosives for the purposes of supply and use according to GHS chapter 2.17: tests results on industrial nitrocellulose	. 12-13	4
	B.	Rev	view of Chapter 2.1	. 14-19	4
	C.	. Dust explosion hazards		. 20	5
	D.	. Use of non-animal testing methods for classification of health hazards		. 21-24	5
	E.	E. Practical classification issues		. 25-29	6
	F.	Aspiration hazard		. 30	7
			velopment of alternative viscosity criteria for mixtures, determined ambient temperature (23°C)	. 30	7
	G.	Na	nomaterials	. 31	7
	H.	Oth	ner issues	. 32-41	7

		1. Classification of physical hazards according to the GHS	32-33	7
		2. Corrections to the seventh revised edition of the GHS	35	7
		3. Addressing risk management in the GHS	36-37	8
		4. Chemicals under pressure	38-39	8
		5. Conversion of decision logics into text	40-41	8
IV.	Haz	ard communication (agenda item 3)	42-51	8
	A.	Labelling of small packagings	42-43	8
	B.	Improvement of annexes 1 to 3 and further rationalization of precautionary statements	44-47	9
	C.	Use of "proportion ranges": review of paragraph A4.3.3.2.3 in Annex 4	48	9
	D.	Other issues	49-51	9
		1. Labelling of consumer products	49	9
		2. Amendments to Annex 7, examples 1 to 7	50	9
		3. Numbering of sub-headings in safety data sheets	51	9
V.	Imp	elementation of the GHS (agenda item 4)	52-58	10
	A.	Development of a list of chemicals classified in accordance with the GHS	52-54	10
	B.	Reports on the status of implementation	55-56	10
		1. The GHS: explaining the implementation gap	55	10
		2. Costa Rica	56	11
	C.	Cooperation with other bodies or international organizations	57	11
	D.	Miscellaneous	58	11
VI.	Dev	relopment of guidance on the application of GHS criteria (agenda item 5)	59	11
VII.	Cap	acity-building (agenda item 6)	60	11
VIII.	. Other business (agenda item 7)			
	A.	Work of the informal working groups	61	11
	B.	Joint session of the TDG and GHS sub-committees	62	12
	C.	Tribute to Mr. O. Kervella (Secretariat) and Ms. G. Ericsson (European Union)	63-66	12
IX.	Ado	option of the report (agenda item 8)	67	12
Annex				
	Cor	rections to the seventh revised edition of the GHS (ST/SG/AC.10/30/Rev.7)		13

### I. Attendance

- 1. The Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals held its thirty-fourth session from 6 to 8 December 2017, with Ms. Maureen Ruskin (United States of America) as Chairperson and Mr. Robin Foster (United Kingdom) as Vice-Chairperson.
- 2. Experts from the following countries took part in the session: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Poland, Qatar, Republic of Korea, Russian Federation, Sweden, United Kingdom and United States of America.
- 3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from Romania and Switzerland also took part.
- 4. Representatives of the World Health Organization (WHO) and the United Nations Institute for Training and Research (UNITAR) were also present.
- 5. The following intergovernmental organizations were also represented: European Union and Organisation for Economic Cooperation and Development (OECD).
- 6. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: Australian Explosives Industry and Safety Group Incorporated (AEISG); Compressed Gas Association (CGA); Dangerous Goods Advisory Council (DGAC); European Chemical Industry Council (CEFIC); European Industrial Gases Association (EIGA); Grain and Feed Trade Association (GAFTA); Industrial Federation of Paints and Coats of Mercosul (IFPCM); International Association for Soaps, Detergents and Maintenance Products (AISE); International Paint and Printing Ink Council (IPPIC); International Petroleum Industry Environmental Conservation Association (IPIECA); Institute of Makers of Explosives (IME); and Sporting Arms and Ammunition Manufacturers' Institute (SAAMI).

## II. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.4/67 (Provisional agenda)

ST/SG/AC.10/C.4/67/Add.1 (List of documents and

annotations)

Informal documents: INF.1, INF.2 (List of documents)

INF.6 (Provisional timetable)

7. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to take account of informal documents INF.1 to INF.25/Rev.1.

# III. Classification criteria and related hazard communication (agenda item 2)

- A. Work of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG) on matters of interest to the GHS Sub-Committee
- 1. Stability tests for industrial nitrocellulose

Informal document: INF.21, item 1 (Secretariat)

8. The Sub-Committee noted the information provided in informal document INF.21, item 1, on the proposal to introduce the Bergmann-Junk and the Methyl Violet Paper tests in the Manual of Tests and Criteria, as stability tests procedures for industrial nitrocellulose. The Sub-Committee noted that work continued and that the authors of the proposal intended to submit an official document for the next session.

### 2. Testing of oxidizing substances

Informal document: INF.21, item 2 (Secretariat)

9. The Sub-Committee noted the information provided in informal document INF.21, item 2, and the intention of the expert from France to submit an official proposal to the next session of the TDG and GHS sub-committees.

### 3. Use of the Manual of Tests and Criteria in the context of the GHS

Informal documents: INF.3 and Add.1 and 2 (Chairman of the Working Group on

Explosives) INF.7 (AEISG) INF.12 (SAAMI)

INF.21, item 3 (Secretariat)

- 10. The TDG Sub-Committee noted the information provided in informal document INF.21, item 3, and in particular that the Working Group on Explosives of the TDG Sub-Committee had completed the review of Sections 1 and 10 of the Manual of Tests and Criteria. The agreed texts were circulated as addendum 1 and 2 to the report of the Working Group on Explosives (informal document INF.53)<sup>1</sup>.
- 11. It was noted that there were several instances in the Manual of Tests and Criteria where the responsibility for classification for transport configuration was placed on the competent authorities, while the GHS relied on self-classification by manufacturers and suppliers. The Sub-Committee invited the Chairman of the Working Group on Explosives to address this issue during the review of the Manual of Tests and Criteria.

### Classification of desensitized explosives for the purposes of supply and use according to GHS chapter 2.17: Test results on industrial nitrocellulose

Informal documents: INF.4 (CEFIC and WONIPA)

INF.9 (SAAMI)

INF.21, item 4 (Secretariat)

- 12. The Sub-Committee noted the information provided in informal document INF.21, item 4 and that WONIPA and SAAMI would submit additional information on tests results on two different types of nitrocellulose ("industrial" and "energetic", as described in paragraph 4 of informal document INF.9).
- 13. The Sub-Committee concurred with the TDG Sub-Committee on taking advantage of existing data to avoid new testing.

### B. Review of Chapter 2.1

Informal documents: INF.10 and INF.20 (Sweden)

INF.21, item 5 (Secretariat)

<sup>1</sup> http://www.unece.org/trans/main/dgdb/dgsubc3/c3inf52.html

- 14. The Sub-Committee noted the progress achieved by the informal working group since the last session, as contained in informal document INF.10. It was also noted that the group had met in parallel to the fifty-second session of the TDG Sub-Committee, following the meeting of the Working Group on Explosives and also in the margins of the GHS Sub-Committee session.
- 15. The expert from Sweden informed the Sub-Committee that the informal working group had tentatively agreed on a classification system and criteria for explosives, as outlined in the annex to informal document INF.20, and had considered several options for hazard communication.
- 16. He explained that the classification system tentatively agreed by the informal working group would keep references to divisions and would not have any impact on the existing classification of explosives for transport purposes. As regards labelling, he explained that the informal working group was considering several options for keeping information on the division on the GHS label in case a general hazard statement was chosen (e.g. through flexible hazard statements, precautionary statements or by using the concept of supplemental information labelling).
- 17. The Sub-Committee noted that the informal working group would continue to work on the proposed classification system, checking its performance and sharpening the criteria to the extent possible. As regards labelling, it was noted that the informal working group would illustrate various labelling options with examples to facilitate the discussions. The expert from Sweden reminded that downstream consequences of the new system would have to be looked at, and said that a revised version of chapter 2.1 would eventually be drafted.
- 18. Some experts reiterated the importance of keeping the information about the division on the label, as some safety specifications and decisions were derived from that classification (e.g. safety distances or emergency response actions) and expressed concern about the loss of information if the current hazard statements were simplified (e.g. "Explosive" instead of "Explosive; mass explosive hazard"). They felt that this would represent a lowering of the current level of protection offered to users. Others on the contrary considered that there was no need for such detailed hazard statements, as most explosives were not accessible to the general public and were handled only in highly regulated conditions by specifically trained individuals.
- 19. The Sub-Committee encouraged the expert from Sweden to take account of the comments made and continue working on the matter. Experts interested in being involved in the work of the informal working group were invited to contact the expert from Sweden.

### C. Dust explosion hazards

20. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

### D. Use of non-animal testing methods for classification of health hazards

Informal documents: INF.25 and INF.25/Rev.1 (United Kingdom

and the Netherlands)

21. The Sub-Committee noted the report on the status of the work of the informal working group on the use of non-animal testing methods for classification of health hazards

in informal document INF.25. In particular, the Sub-Committee noted that the informal working group had agreed:

- (a) to limit the level of detail on the criteria for the *in vitro* methods but to include a detailed table in the guidance at the end of chapter 3.2;
- (b) to integrate more "weight of evidence" into the GHS tiered approach, using as a starting point the European Chemicals Agency (ECHA) tiered approach, given the commonalities between the OECD integrated approach, the current GHS tiered approach and the ECHA guidance on the European Regulation on Classification, Labelling and Packaging (CLP);
- (c) that certain negative in vitro tests can be accepted for concluding "no classification" in jurisdictions not adopting category 3, and that additional information to discriminate between category 3 and "no classification" for jurisdictions adopting this category was necessary.
- 22. The Sub-Committee noted that the informal correspondence group had also considered a paper on human test results and how these results could be used for classification within an overall "weight of evidence" assessment. Some participants that presently make use of human data to classify for skin corrosion and irritation agreed to find out more about how classifications were derived in practice from patch tests and other human data.
- 23. The Sub-Committee noted that some experts considered that evaluation of the quality of human evidence was outside of the scope of the work of the group, and that this point had not been adequately reflected in paragraph 8 of informal document INF.25. The experts from the United Kingdom and the Netherlands submitted a revised version of the report to take account of the comments made (informal document INF.25/Rev.1).
- 24. The Sub-Committee was informed that the European Parliament was currently working on a resolution promoting a global ban on animal testing on cosmetics. The activities of the European Partnership for Alternative Approaches to Animal Testing (EPAA) were also mentioned.

### E. Practical classification issues

- 25. The Sub-Committee noted that the informal working group had addressed items (a), (b) and (g) from its programme of work<sup>2</sup> with the following outcome.
- 26. On item (a), the informal working group considered some examples illustrating how the additivity approach may be applied in the "interpolation within one hazard category" bridging principle, but could not reach an agreement on the outcome of one of them. The informal working group would consider additional examples that would be developed in an attempt to illustrate that additivity cannot be applied while using the interpolation bridging principle.
- 27. On item (b), the informal working group had agreed on a proposal presented to provide consistency with Chapters 3.8 and 3.9 (Specific Target organ toxicity, following single and repeated exposure) that the criteria should be applied independently. The Sub-Committee noted that the informal working group intended to submit an informal document on this issue to the next session.

Refer to informal document INF.39 (thirty-second session) available at: http://www.unece.org/fileadmin/DAM/trans/doc/2016/dgac10c4/UN-SCEGHS-32-INF39.pdf

- 28. On item (g), the Sub-Committee noted that the informal working group had reviewed a thought starter presented by ECHA and that ECHA intended to take account of the comments made and submit a revised proposal to the informal working group at its next meeting.
- 29. Finally, the Sub-Committee noted that due to lack of time, the informal working group had deferred the discussion on item (e) to its next meeting.

### F. Aspiration hazard

## Development of alternative viscosity criteria for mixtures, determined at ambient temperature ( $23^{\circ}C$ )

30. The Sub-Committee noted that IPPIC was working on the determination of flow time of paints, varnishes and related products by use of flow cups according to ISO 2431. The representative of IPPIC indicated that she intended to provide more detailed information on this issue to the Sub-Committee at its next session.

### G. Nanomaterials

31. The Sub-Committee noted that the informal working group was following the progress of the work on safety of nanomaterials undertaken by the OECD and ECHA and that it intended to build on these outcomes to consider the applicability of GHS to such substances.

### H. Other issues

### 1. Classification of physical hazards according to the GHS

Informal document: INF.8 (Germany)

- 32. The Sub-Committee welcomed the paper from Germany on combinations of physical hazard classes and their assessment, as regards the relevance of possible simultaneous assignment to a chemical. Most experts considered that any guidance given by the Sub-Committee on this matter would result in a harmonized understanding and application of the GHS provisions worldwide that could be used both by regulated and regulating parties as an authoritative reference source for information.
- 33. However, as many experts pointed out that the task was likely to be very large and complex, the Sub-Committee considered that before starting work on this issue, it would be necessary to define more clearly its scope, how it should be addressed in the GHS (e.g. as guidance, criteria, reference material), how to address divergent results or opinions, etc. It also suggested that the TDG Sub-Committee should be involved in the work, as focal point for physical hazards.
- 34. The Sub-Committee invited the expert from Germany to take account of the comments made and to consider developing a step-wise approach for this work.

### 2. Corrections to the seventh revised edition of the GHS

Informal document: INF.11 (Secretariat)

35. The Sub-Committee agreed to the corrections in informal document INF.11 (see annex).

### 3. Addressing risk management in the GHS

Informal document: INF.14 (Australia)

- 36. The Sub-Committee noted that harmonization of risk assessment procedures and risk management decisions was beyond the scope of the GHS and that the need for guidance improving understanding of the influence of external factors (e.g. risks) on specific hazards should only be considered on a case-by-case basis. On those grounds, most experts welcomed the proposal from Australia and provided some comments on the proposed guidance principles in the annex to informal document INF.14.
- 37. The Sub-Committee invited the expert from Australia to take account of the comments made and to continue work on this issue.

### 4. Chemicals under pressure

Informal document: INF.15 (CEFIC, EIGA)

- 38. The Sub-Committee agreed in principle to the proposal to address classification of chemicals under pressure in the GHS. However, some experts requested clarification or provided comments on a number of issues (e.g. reconsider allocating a separate chapter to chemicals under pressure; merging completely with aerosols; provide details on the rationale for the 50% cut-off value to differentiate between "chemicals under pressure" and "gas mixtures"; use of "burst" in the proposed hazard statement; consider using the term "chemicals" instead of liquids and solids).
- 39. The Sub-Committee invited the representatives of CEFIC and EIGA to take account of the comments made and to submit a revised proposal to the next session.

### 5. Conversion of decision logics into text

Informal document: INF.13 (Canada)

- 40. It was noted that for most of the hazard classes the decision logics were not part of the criteria. The Sub-Committee agreed that in principle criteria should be expressed in words in order to allow consistent implementation in different jurisdictions.
- 41. The Sub-Committee invited the expert from Canada and the representatives of CEFIC and EIGA either to present the criteria for aerosols following this approach in a working document for the next session or to do so as part of the revision of chapter 2.3 to include chemicals under pressure.

### IV. Hazard communication (agenda item 3)

### A. Labelling of small packagings

Document: ST/SG/AC.10/C.4/2017/5 (CEFIC)

Informal document: INF.23 (United States of America)

- 42. The Sub-Committee noted that the informal working group had considered the labelling examples in document ST/SG/AC.10/C.4/2017/5 and the amendments proposed in informal document INF.23, together with other comments made during the discussion. In the light of the comments made, the informal working group informed the Sub-Committee that it would submit a revised proposal for the next session.
- 43. The representative of CEFIC invited experts to consider whether other examples should be developed.

# B. Improvement of annexes 1 to 3 and further rationalization of precautionary statements

- 44. The Sub-Committee noted that the informal working group had considered the precautionary statements addressing medical response and "keep out of reach of children" precautionary pictogram at its last meeting.
- 45. It was noted that work on the medical response precautionary statements continued to consider translatability of the recommended precautionary statements and that the informal working group intended to submit a formal proposal for the next session.
- 46. On the "keep out of reach of children" precautionary pictogram, the Sub-Committee noted that the informal working group had considered several options based on the discussions and on the results of comprehensibility tests conducted within the European Union and in the United States, China, Brazil and South Africa for the AISE pictogram. As a consequence, both the AISE and the Japanese pictograms were selected. It was also noted that the informal working group will submit a proposal to the Sub-Committee to include these pictograms as examples into Annex 3, Section 5 of the GHS and will give further consideration to the potential use of the pictogram on a GHS label.
- 47. The Sub-Committee also noted that the informal working group had deferred consideration of the P501 thought starter paper to the next meeting due to lack of time.

### C. Use of "proportion ranges": review of paragraph A4.3.3.2.3 in Annex 4

48. As no document had been submitted under this agenda sub-item, no discussions took place on this subject.

### D. Other issues

### 1. Labelling of consumer products

Informal document: INF.5 (AISE)

49. The Sub-Committee welcomed the information provided by the representative of AISE and noted the conclusions of the study. Most experts supported continuation of this work to explore ways to improve hazard communication in the GHS. Some considered that it would be helpful to conduct similar studies outside the European Union.

### 2. Amendments to Annex 7, examples 1 to 7

Informal document: INF.19 (UNITAR)

50. The Sub-Committee took note of the proposed amendments and corrections to examples 1 to 7 in Annex 7 of the GHS and invited experts to provide comments to the representative of UNITAR.

### 3. Numbering of sub-headings in safety data sheets

Informal document: INF.24 (RPMASA)

51. The Sub-Committee noted the summary of the additional contributions received by RPMASA since the last session on its survey on the different approaches to numbering of sub-headings in the safety data sheets. Experts were invited to continue to provide information on this issue.

### V. Implementation of the GHS (agenda item 4)

# A. Development of a list of chemicals classified in accordance with the GHS

Document: ST/SG/AC.10/C.4/2017/4 (United States of America)

Informal document: INF.22 (United States of America)

- 52. The majority of experts and industry representatives who spoke supported the concept of a non-binding list of chemicals classified according to the GHS under the auspices of the Sub-Committee. Some challenged the capacity, expertise and resources of the Sub-Committee, as compared to that available in other bodies, to perform and update the classifications. However, several experts considered that given the amount of expertise and resources already invested in the development of lists at national and regional level, it seemed feasible to build on existing resources, data and expertise (e.g. existing databases and platforms such as the OECD eCHEM portal, the WHO/ILO chemical safety cards, ongoing national or regional classification work and databases, the dangerous goods list in the Model Regulations on the Transport of Dangerous Goods, etc.) as a way to achieve harmonized classifications. They also felt that the process of developing a list in this way might provide opportunities to discover and correct difficulties in applying the GHS classification criteria.
- 53. Some suggested that the work could start by identifying substances for which specific issues had already been identified by competent authorities or industry. Others considered that it would be better to start building a list with substances with harmonized classifications. Some others considered that it should not address classification of controversial substances and expressed concerns about how to solve conflicts with classification results in existing legally binding lists.
- 54. After discussion, the Sub-Committee invited the informal working group to take account of the comments made and explore some of the suggestions and ideas on how to proceed.

### **B.** Reports on the status of implementation

### 1. The GHS: Explaining the legal implementation gap

Informal document: INF.17 (Sweden)

55. The Sub-Committee welcomed the results of the study and noted that although there seems to be broad support from countries for enhanced international collaboration to achieve sound management of chemicals, several driving forces and barriers for GHS implementation at national level still persisted in some countries. It also noted that according to the study, there seems to be a clear correlation between the financial and regulatory capacities of a country and its GHS implementation status. Ability to formulate and introduce legislation and availability of sustained capacity building for legislators appeared to be key factors for achieving GHS implementation.

### 2. Costa Rica

Informal document: INF.18 (Secretariat)

56. The Sub-Committee noted the information about the publication and entry into force of two executive decrees and their related technical regulations, implementing the provisions of the sixth revised edition of the GHS in Costa Rica.

### C. Cooperation with other bodies or international organizations

57. The Sub-Committee noted that the Japanese Ministry of Economy, Trade and Industry (METI) had co-developed with ASEAN countries the "ASEAN-Japan Chemical Safety Database (AJCSD), which has been fully operational since 28 April 2016. The database, operated by the Japanese National Institute of Technology and Evaluation (NITE), includes classification data from different countries. In July this year, GHS classification results from Myanmar were added for 50 chemicals. The database currently covers GHS classification results from Myanmar (90 chemicals), Malaysia (229 chemicals) and Japan (3034 chemicals). Classification results from Thailand are expected to be included in the future.

### D. Miscellaneous

58. As no document had been submitted under this agenda sub-item, no discussions took place on this subject.

# VI. Development of guidance on the application of GHS criteria (agenda item 5)

59. As no document had been submitted under this agenda item, no discussions took place on this subject.

## VII. Capacity building (agenda item 6)

60. The representative of UNITAR mentioned that projects related to the development of GHS implementation strategies had been launched in April and June 2017 in Uzbekistan and the Republic of Guinea respectively, and that he would provide further information to the Sub-Committee at its next session.

### VIII. Other business (agenda item 7)

### A. Work of the informal working groups

Informal document: INF.16 (Chair and Vice-chair persons)

61. The Sub-Committee endorsed the proposed arrangements for the work of informal working groups in paragraph 8 of informal document INF.16.

### B. Joint session of the TDG and the GHS sub-committees

62. The Sub-Committee concurred with the TDG Sub-Committee that it would be appropriate to hold a joint meeting of both sub-committees in July 2018 to discuss jointly topics of common interest (e.g. review of chapter 2.1 of the GHS). The chairs of both sub-committees, in consultation with the secretariat, would decide the date, the time needed and the topics to be discussed, after the deadline for submission of documents.

# C. Tribute to Mr. O. Kervella (Secretariat) and Ms. G. Ericsson (European Union)

- 63. The Sub-Committee was informed that, as had been announced at the previous session (see ST/SG/AC.10/C.4/66, para. 54), the Chief of the Dangerous Goods and Special Cargoes Section of the UNECE Sustainable Transport Division, Mr. O. Kervella, had reached the mandatory retirement age of 62 during the fifty-second session of the TDG Sub-Committee.
- 64. Mr. O. Kervella had devoted his entire career within the United Nations system to issues relating to the transport of dangerous goods and management of chemicals. He started working for the UNECE in October 1982, then joined IMO in 1987 and came back to UNECE in 1992.
- 65. The Sub-Committee expressed its deep gratitude for all the work he has done over the past 35 years, and in particular for his involvement in the development of the GHS, from its early stages of development back in the early 90's until the creation of the Sub-Committee in 1999, and his continuous advice and support to ensure its smooth functioning.
- 66. The Sub-Committee was also informed that Ms. G. Ericsson, who had served on the Sub-Committee first as member of the Swedish delegation and then as representative of the European Union, was attending a session of the Sub-Committee for the last time since she would be retiring soon. The Sub-Committee expressed its appreciation for her contribution to the development of the GHS and wished her a long and happy retirement.

### IX. Adoption of the report (agenda item 8)

67. The Sub-Committee adopted the report on its thirty-fourth session on the basis of a draft prepared by the secretariat.

Annex [English only]

# Corrections to the seventh revised edition of the GHS (ST/SG/AC.10/30/Rev.7)

1. Chapter 2.2, paragraph 2.2.2.1, first sentence

For in in Category 1A read in Category 1A

2. Chapter 2.16, paragraph 2.16.4.1, second text box from the top

For aluminum read aluminium

3. Annex 3, section 2, table A3.2.2, precautionary statement P212, column (2)

For desensitized read desensitizing

4. Annex 3, section 3, paragraph A3.3.2.2.2, last sentence

For open flame read open flames

5. Annex 3, section 3, heading A3.3.5 and paragraph A3.3.5.1

Delete

6. Annex 3, section 3, matrix table on page 328 of the English version

For OXIDIZING LIQUIDS (CHAPTER 2.13) read OXIDIZING SOLIDS (CHAPTER 2.14)

7. Annex 3, section 3, matrix table acute toxicity (inhalation), category 3, hazard statement

For H311 read H331