

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

**27 October 2016**

**Sub-Committee of Experts on the  
Transport of Dangerous Goods**

**Fiftieth session**

Geneva, 28 November-6 December 2016

Item 7 (h) of the provisional agenda

**Issues relating to the Globally Harmonized  
System of Classification and Labelling of  
Chemicals: review of Chapter 2.1 of the GHS**

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

**Thirty-second session**

Geneva, 7-9 December 2016

Item 2 (g) of the provisional agenda

**Classification criteria and related hazard  
communication: miscellaneous**

**Status report on the work of the informal correspondence  
group on the revision of GHS Chapter 2.1**

**Transmitted by the expert from Sweden**

**Background**

1. During the biennium 2015-2016, work has been conducted to revise Chapter 2.1 of the GHS on Explosives. The work was initiated by the expert from Australia<sup>1</sup> and has been led by the expert from Sweden since the twenty-ninth session of the Sub-Committee of Experts on the Globally Harmonized System (SCEGHS) in July 2015<sup>2</sup>. The documents by the experts from Australia and from Sweden referred to contain the reasons for the undertaking of the work, which are not repeated herein. An Informal Correspondence Group (ICG) was formed in August 2015 which, with a few additional experts joining in at later stages, currently consists of almost thirty experts, most of them from the Working Group on Explosives (EWG) under the Sub-Committee of Experts on the Transport of Dangerous Goods (SCETDG). Status reports on the work of the ICG have been submitted to both Sub-Committees for their sessions in December 2015<sup>3</sup> and June/July 2016<sup>4</sup>, and discussions have taken place at the meetings of the EWG in parallel to these sessions. A dedicated meeting on this topic was also held during the thirty-first session of the SCEGHS, in which many experts from that Sub-Committee attended.

**Recent developments**

2. At the meeting of the EWG during the forty-ninth session of the SCETDG, extensive discussions revolving around potential modifications of the labelling elements for Explosives took place. The background to this is that the classification of Explosives into

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<sup>1</sup> ST/SG/AC.10/C.4/2014/15 - ST/SG/AC.10/C.3/2014/79

<sup>2</sup> See UN/SCEGHS/29/INF.13 and the report from the twenty-ninth session of the SCEGHS  
(ST/SG/AC.10/C.4/58)

<sup>3</sup> UN/SCEGHS/30/INF.9 -UN/SCETDG/48/INF.32

<sup>4</sup> UN/SCEGHS/31/INF.10 - UN/SCETDG/49/INF.37

Divisions is done as packaged, and the explosive behaviour may depend on that particular packaging which is usually the transport packaging. Since the GHS-labelling elements are tied to the Division (see Table 2.1.2 in Chapter 2.1 of the GHS), this may lead to an inadequate warning for the explosive behaviour when the Explosive is taken out of the packaging (or configuration) in which it was classified. This problem has been described in more detail as Workstream 2 in previous documents on the review of Chapter 2.<sup>5</sup>

3. It was felt by many members of the ICG that the GHS-labelling should be generalized, which would overcome the Division-dependence of the current GHS hazard statements. The suggested simplified labelling elements were:

Symbol: Exploding bomb (GHS01)

Signal word: Danger

Hazard statement: Explosive

However, it was felt by several experts that this general labelling would exaggerate the hazard for certain Explosives, in particular for some articles which do not pose a significant explosion hazard. It was pointed out that a too strong warning for an explosion hazard for these items could lead to unwanted consequences when applying downstream regulations relating e.g. to building codes and storage requirements<sup>6</sup>. Other experts were reluctant to remove the current hazard statements connected to the Division, and felt that information would be lost with the generalized labelling. It was also put forward that application of down-stream regulations may depend on the Division being known, and a suggestion was therefore to add the Division number of the Explosive as packaged (or configured) for transport as supplemental information on the GHS label (see Section 1.4.6.3 in Chapter 1.4 of the GHS). While this might solve some down-stream issues, there was concern that introducing the Divisions on the label of inner packages would perpetuate the problem of potentially misleading labelling of non-transport packages, and there was no consensus on the matter.

4. During the discussions at the EWG-meeting, the idea was put forward to introduce Categories in the classification of Explosives. This would provide a way of distinguishing Explosives that do not provide a hazard significant enough to motivate the general labelling, by referring them to a Category of their own. In addition, the introduction of Categories would also resolve the debated issue of the, to most ICG-members, misleading denotation “Unstable explosives”, which would then instead form a Category of their own. It was suggested that Unstable explosives would be referred to Category 1, while all other Explosives (i.e. Divisions 1.1 – 1.6) would be in Category 2 and be assigned the generalized labelling elements as above. In order to overcome the problem of a too strong warning for those Explosives that do not pose a significant explosion hazard, it was suggested to split Category 2 into Sub-Categories 2A and 2B, where the latter would contain those less hazardous Explosives and be assigned less severe labelling elements. It was also discussed whether it would be better to introduce a Category 3 for this purpose instead of dividing Category 2, in relation to the way the GHS allows Sub-Categories to be merged and the building block approach (see Section 1.1.3 of Chapter 1.1 of the GHS).

5. The ICG has been working much on the conditions under which an Explosive would be classified as belonging to Sub-Category 2B. During the meeting of the EWG in June 2016, it was proposed to distinguish these Explosives by virtue of the UN-numbers assigned for the transportation in accordance with the UN Recommendations on the

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<sup>5</sup> UN/SCEGHS/29/INF.13 and UN/SCEGHS/31/INF.10 - UN/SCETDG/49/INF.37

<sup>6</sup> See also ST/SR/AC.10/C.4/2016/10 - ST/SR/AC.10/C.3/2016/47

Transport of Dangerous Goods. An initial list of these UN-numbers was put forward (in a slightly different context) in an informal document by the expert from Canada<sup>7</sup>, and this list was refined during the EWG-meeting. Further discussions have taken place over email since then, and in Annex 2 to this document the current list of potential UN-numbers for assignment to Sub-Category 2B is shown. Most experts agree that the list of UN-numbers should be limited to Explosives classified as Division 1.4 for transport, and many experts think that only articles in Division 1.4 that in themselves, regardless of packaging, do not pose a significant explosion hazard can be considered for Sub-Category 2B. Other experts, however, think that additional Explosives could be assigned to Sub-Category 2B under the condition that any packaging that mitigates the explosive effect is retained, and a few experts do not favour the use of UN-numbers at all and prefer the conditions of Sub-Category 2B to be stated in another way. There have also been concerns raised as to the practicability of retaining packaging when Explosives are put on display for retail purposes, and exceptions for this situation have been suggested.

6. In addition to the above topics, there have also been discussions on introducing the proper criteria for Explosives (which are currently missing from Chapter 2.1), amending the precautionary statements for Explosives and further initiatives to make amendments to the current text of Chapter 2.1 e.g. removing some potentially misleading commas.<sup>8</sup> The applicability of the GHS to situations such as manufacturing and processing of Explosives has also been raised on multiple occasions, and is a topic that could be relevant also for other physical hazards<sup>9</sup>.

7. In the dedicated meeting on the revision of Chapter 2.1 during the thirty-first session of the SCEGHS, the problems with the current GHS-labelling of Explosives as described in INF. 13 to the twenty-ninth session of the SCEGHS were presented, and some further aspects as described in other documents<sup>10</sup> on this topic were also raised. The discussions held in the EWG as outlined above were summarized and draft amendments to Chapter 2.1 were shown and discussed, in particular the generalized labelling elements and the introduction of Categories in the classification as explained above.

## Current state of the work

8. Despite intense email-discussions within the ICG after the sessions of the Sub-Committees in June/July 2016, it was not possible to conclude on all the new ideas and form them into a formal proposal for changes to Chapter 2.1 in the limited time between those sessions and the deadline for submission of documents to the December 2016 sessions. However, for information purposes the draft revised Chapter 2.1 as it was circulated for comments within the ICG in early August 2016 is attached as Annex 1. It should be noted that many comments were received but have not been included in the text as displayed in the annex since opinions were divided and hence further discussions are necessary. Furthermore, the extensive changes to the Chapter could have down-stream effects that need to be analysed before they are introduced. The consequences of the changes also need to be weighed in relation to the problems they are intended to solve.

<sup>7</sup> UN/SCETDG/49/INF.45 - UN/SCEGHS/31/INF.12

<sup>8</sup> See also ST/SG/AC.10/C.4/2016/2 - ST/SG/AC.10/C.3/2016/7, as well as ST/SG/AC.10/C.4/2016/14 - ST/SG/AC.10/C.3/2016/53.

<sup>9</sup> See UN/SCEGHS/31/INF.22, as well as ST/SG/AC.10/C.4/2016/10 - ST/SG/AC.10/C.3/2016/47

<sup>10</sup> See UN/SCEGHS/29/INF.13 and UN/SCEGHS/31/INF.10 - UN/SCETDG/49/INF.37

9. For illustration purposes, examples of GHS-labels for three Explosives are shown in Annex 3. The examples display the GHS-label resulting from application of the current provisions of Chapter 2.1 and from applying the provisions of the revised Chapter 2.1 as outlined in Annex 1 to the same Explosive. Note that the labels in Annex 3 may not adhere in every detail to the GHS as implemented in various jurisdictions.

### **Future outlook**

10. It is expected that the work on the review of Chapter 2.1 will continue in the biennium 2017-2018. It can also be anticipated that the EWG will discuss this matter during their meeting in parallel to the fiftieth session of the SCETDG. There will also be a dedicated meeting during the thirty-second session of the SCEGHS for discussion of this subject<sup>11</sup>, and it should be noted in this context that some of the topics under discussion revolve around more principal GHS-issues, that may extend beyond Chapter 2.1, rather than technical matters relating to Explosives alone.

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<sup>11</sup> See UN/SCEGHS/32/INF.7 for further information.

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## Annex 1 - Draft revised Chapter 2.1 as sent out to the ICG in early August 2016

Changes, as compared to GHS Rev. 6, are to Sections 2.1.2 and 2.1.3 only, apart from:

- Deletion of the definition of “pyrotechnic article” in Section 2.1.1, which is a term not used.
- A possible new paragraph 2.1.4.2.4 at the end of Section 2.1.4.
- Figures 2.1.1 and 2.1.2, which replace current Figures 2.1.1 and 2.1.4. Note also that the detailed flow-charts in current Figures 2.1.2 and 2.1.3 have been omitted, since they are a virtual duplication of the corresponding figures in the UN Manual of Tests and Criteria which is subject to proposed amendments to adapt it to the GHS (see ST/SY/AC.10/C.4/2016/16 - ST/SY/AC.10/C.3/2016/83).

The last sentences in paragraph 2.1.4.1 have been amended to reflect these changes to the figures.

Since the changes to the Chapter are extensive, the original text is not displayed. For comparison, see the current text of the Chapter in GHS Rev.6.

Note that the text only reflects what was sent out to the ICG for comments in August 2016.

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# CHAPTER 2.1

## EXPLOSIVES

### 2.1.1 Definitions and general considerations

2.1.1.1 An *explosive substance (or mixture)* is a solid or liquid substance (or mixture of substances) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances (and mixtures) are included even when they do not evolve gases.

A *pyrotechnic substance (or mixture)* is a substance or mixture of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self-sustaining exothermic chemical reactions.

An *explosive article* is an article containing one or more explosive substances or mixtures.

2.1.1.2 The class of explosives comprises:

- (a) Explosive substances and mixtures;
- (b) Explosive articles, except devices containing explosive substances or mixtures in such quantity or of such a character that their inadvertent or accidental ignition or initiation shall not cause any effect external to the device either by projection, fire, smoke, heat or loud noise; and

(c) Substances, mixtures and articles not mentioned under (a) and (b) above which are manufactured with the view to producing a practical, explosive or pyrotechnic effect.

**NOTE:** Some explosive substances and mixtures are wetted with water or alcohols, diluted with other substances or dissolved or suspended in water or other liquid substances to suppress or reduce their explosives properties. They may be a candidate for classification as desensitized explosives (see Chapter 2.17) or may be treated differently from explosive substances and mixtures (as desensitized explosives) for some regulatory purposes (e.g. transport), see 1.3.2.4.5.2.

## 2.1.2 Classification criteria

2.1.2.1 Substances, mixtures and articles of this class are assigned to one of two categories in accordance with the criteria in Table 2.1.1.

**Table 2.1.1: Criteria for explosives**

Category	Criteria
1	<ul style="list-style-type: none"><li>- Substances and mixtures which show positive results in UN Test Series 3; and</li><li>- articles which [, as packaged for transport] show positive results in UN Test Series 4 of the <i>UN Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria</i>; and</li><li>- ammonium nitrate emulsion, suspensions and gels which show positive results in Test 8(a) of the <i>UN Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria</i>.</li></ul>
2	<p>Substances, mixtures and articles which do not fulfil the criteria for inclusion in Category 1; and</p> <ul style="list-style-type: none"><li>- have been manufactured with a view to produce an explosive or pyrotechnic effect; or</li><li>- are substances or mixtures which show positive effects in UN Testseries 2 of the <i>UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria</i> and which, as packaged, are not excluded from the hazard class of explosives on basis of their behaviour in Test Series 6; or</li><li>- are articles containing explosive substances or mixtures and which are not excluded from the hazard class of explosives by definition of 2.1.1.2(b); or</li><li>- are ammonium nitrate emulsions, suspensions or gels which show positive results in Test 8(b) or 8(c) of the <i>UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria</i>.</li></ul>

2.1.2.2 Explosives in category 2 are further assigned to sub-category A or B in accordance with the criteria in Table 2.1.2.

**Table 2.1.2 Criteria for sub-categories of explosives in category 2**

Sub-category	Criteria
<b>2A</b>	Explosives in Category 2, except those that fulfil the criteria for being classified in sub-category 2B.
<b>2B</b>	[Explosive articles/Explosives] in Category 2 which fulfil the conditions for being assigned the following UN-numbers in accordance with the <i>UN Recommendations on the Transport of Dangerous Goods, Model Regulations</i> *:  [0012; 0014; 0044; 0055; 0066; 0070; 0105; 0131; 0173; 0174; 0191; 0197; 0276; 0278; 306; 0312; 0317; 0323; 0325; 0336; 0337; 0338; 0339; 0345; 0368; 0373; 0379; 0403; 0404; 0405; 0425; 0446; 0454; 0503; 0505; 0506; 0507; [0509;] 0510.]

[\* The assignment of the UN-number may depend on mitigation of the explosive effect by one or more levels of packaging such that, without that packaging, the assignment is no longer valid. Such articles cannot be classified in Sub-category 2B unless they retain all the levels of packaging that provide the mitigating effect.]

[For the purpose of retail display of a limited number of items, only the innermost packaging needs to be retained [, unless a competent authority requires otherwise].]

**NOTE:** For classification tests on solid substances or mixtures, the tests should be performed on the substance or mixture as presented. If for example, for the purposes of supply or transport, the same chemical is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, the substance or mixture must also be tested in the new form.

2.1.2.3 [For some regulatory purposes (e.g. transport),] explosives in category 2 are assigned to one of six divisions in accordance with Chapter 2.1 of the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations*. The allocation to a division is generally done on basis of results in UN Testseries 5-7 of the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*.

**Table 2.1.3: Divisions of explosives in category 2 [(for some regulatory purposes)]**

Division	Description
<b>1.1</b>	Substances, mixtures and articles which have a mass explosion hazard (a mass explosion is one which affects almost the entire quantity present virtually instantaneously);
<b>1.2</b>	Substances, mixtures and articles which have a projection hazard but not a mass explosion hazard;
<b>1.3</b>	Substances, mixtures and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard:  (i) combustion of which gives rise to considerable radiant heat; or (ii) which burn one after another, producing minor blast or projection effects or both;

<b>1.4</b>	Substances, mixtures and articles which present no significant hazard: substances, mixtures and articles which present only a small hazard in the event of ignition or initiation. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package;
<b>1.5</b>	Very insensitive substances or mixtures which have a mass explosion hazard: substances and mixtures which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions;
<b>1.6</b>	Extremely insensitive articles which do not have a mass explosion hazard: articles which predominantly contain extremely insensitive substances or mixtures and which demonstrate a negligible probability of accidental initiation or propagation.

**NOTE:** Explosives in divisions 1.1 to 1.6, may, for some regulatory purposes (e.g. transport), be assigned compatibility groups A to S (see UN Recommendations on the Transport of Dangerous Goods, Model Regulations, Chapter 2.1).

### 2.1.3 Hazard communication

General and specific considerations concerning labelling requirements are provided in *Hazard communication: Labelling* (Chapter 1.4). Annex 1 contains summary tables about classification and labelling. Annex 3 contains examples of precautionary statements and pictograms which can be used where allowed by the competent authority.

**Table 2.1.3: Label elements for explosives**

Category	<b>1</b>	<b>2</b>						
		<b>2A</b>						<b>2B</b>
<b>Division</b>	<i>No division</i>	<b>1.1</b>	<b>1.2</b>	<b>1.3</b>	<b>1.4</b>	<b>1.5</b>	<b>1.6</b>	<b>1.4</b>
<b>Symbol</b>	Exploding bomb	Exploding bomb	Exploding bomb	Exploding bomb	Exploding bomb; <i>or</i> 1.4 on orange background <sup>a</sup>	Exploding bomb; <i>or</i> 1.5 on orange background <sup>a</sup>	Exploding bomb; <i>or</i> 1.6 on orange background <sup>a</sup>	[ <i>to be determined</i> ]; <i>or</i> 1.4 on orange background <sup>a</sup>
<b>Signal word</b>	Danger	Danger	Danger	Danger	Danger	Danger	Danger	Warning
<b>Hazard statement</b>	[Sensitive] Explosive	Explosive	Explosive	Explosive	Explosive	Explosive	Explosive	Fire or projection [hazard]

<sup>a</sup> Applies to substances, mixtures and articles subject to some regulatory purposes (e.g. transport).

[2.1.3.1 If available, the division assigned to an explosive according to the UN Recommendations of the Transport of Dangerous Goods, Model Regulations, should be indicated as supplemental information (see paragraph 1.4.6.3 of Chapter 1.4) on the label of any package that is not labelled in accordance with those Model Regulations. If the assigned division relates to the transport packaging or configuration that should be indicated as “Division X as packaged/configured for transport.” with X denoting the appropriate division number (e.g. 1.3).]

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**NOTE 2:** Substances and mixtures with a positive result in Test Series 2 in Part I, Section 12, of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, which are exempted from classification as explosives (based on a negative result in Test Series 6 in Part I, Section 16 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria,) still have explosive properties. The user should be informed of these intrinsic explosive properties because they have to be considered for handling – especially if the substance or mixture is removed from its packaging or is repackaged – and for storage. For this reason, the explosive properties of the substance or mixture should be communicated in Section 2 (Hazard identification) and Section 9 (Physical and chemical properties) of the Safety Data Sheet in accordance with Table 1.5.2, and other sections of the Safety Data Sheet, as appropriate.

#### **2.1.4 Decision logic and guidance**

The decision logic and guidance, which follow, are not part of the harmonized classification system, but have been provided here as additional guidance. It is strongly recommended that the person responsible for classification studies the criteria before and during use of the decision logic.

##### **2.1.4.1 Decision logic**

The classification of substances, mixtures and articles in the class of explosives and further allocation to a division is a very complex, three step procedure. Reference to Part I of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, is necessary. The first step is to ascertain whether the substance or mixture has explosive effects (Test Series 1). The second step is the acceptance procedure (Test Series 2 to 4) and the third step, applied for some regulatory purposes only (e.g. transport), is the assignment to a hazard division (Test Series 5 to 7). The assessment whether a candidate for “ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives (ANE)” is insensitive enough for inclusion classification as an oxidizing liquid (Chapter 2.13) or an oxidizing solid (Chapter 2.14) is answered by Test Series 8 tests. The overall classification procedure for substances, mixtures and articles is shown in Figure 2.1.1. For ammonium nitrate emulsions, suspensions and gels, the classification procedure is shown in Figure 2.1.2.

##### **2.1.4.2 Guidance**

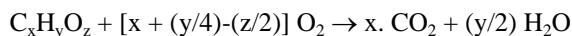
2.1.4.2.1 Explosive properties are associated with the presence of certain chemical groups in a molecule which can react to produce very rapid increases in temperature or pressure. The screening procedure is aimed at identifying the presence of such reactive groups and the potential for rapid energy release. If the screening procedure identifies the substance or mixture to be a potential explosive, the acceptance procedure (see section 10.3 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria) has to be performed.

**NOTE:** Neither a Series 1 type (a) propagation of detonation test nor a Series 2 type (a) test of sensitivity to detonative shock is required if the exothermic decomposition energy of organic materials is less than 800 J/g. For organic substances and mixtures of organic substances with a decomposition energy of 800 J/g or more, tests 1 (a) and 2 (a) need not be performed if the outcome of the ballistic mortar Mk.IId test (F.1), or the ballistic mortar test (F.2) or the BAM Trauzl test (F.3) with initiation by a standard No.8 detonator (see Appendix 1 to the Manual of Tests and Criteria) is “no”. In this case, the results of test 1 (a) and 2 (a) are deemed to be “-”.

2.1.4.2.2 The acceptance procedure for the hazard class “explosives” need not be applied if:

- (a) There are no chemical groups associated with explosive properties present in the molecule. Examples of groups which may indicate explosive properties are given in Table A6.1 in Appendix 6 of the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*; or
- (b) The substance contains chemical groups associated with explosive properties which include oxygen and the calculated oxygen balance is less than -200.

The oxygen balance is calculated for the chemical reaction:



using the formula:

$$\text{oxygen balance} = -1600 [2x + (y/2) - z] / \text{molecular weight};$$

(c) For an organic substance, or a homogenous mixture of organic substances, containing a chemical group (or groups) associated with explosive properties:

- the exothermic decomposition energy is less than 500 J/g, or
- the onset of exothermic decomposition is 500 °C or above

as indicated by Table 2.1.3.

**Table 2.1.3: Decision to apply the acceptance procedure for the hazard class “Explosives” for an organic substance or a homogenous mixture of organic substances**

Decomposition energy (J/g)	Decomposition onset temperature (°C)	Apply acceptance procedure? (Yes/No)
< 500	< 500	No
< 500	≥ 500	No
≥ 500	< 500	Yes
≥ 500	≥ 500	No

The exothermic decomposition energy may be determined using a suitable calorimetric technique (see section 20.3.3.3 of the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*); or

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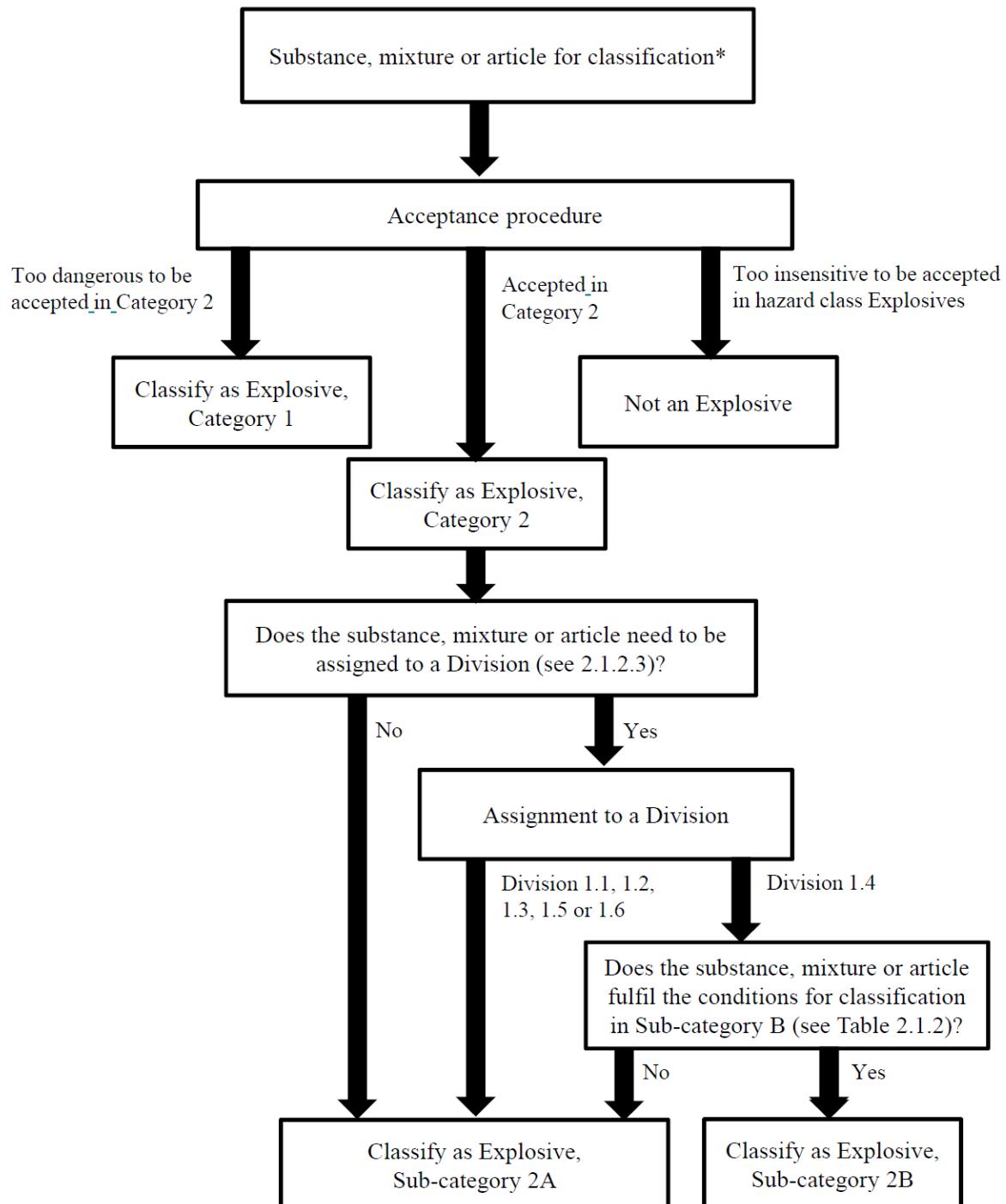
(d) For mixtures of inorganic oxidizing substances with organic material(s), the concentration of the inorganic oxidizing substance is:

less than 15%, by mass, if the oxidizing substance is assigned to Category 1 or 2;  
less than 30%, by mass, if the oxidizing substance is assigned to Category 3.

2.1.4.2.3 In the case of mixtures containing any known explosives, the acceptance procedure has to be performed.

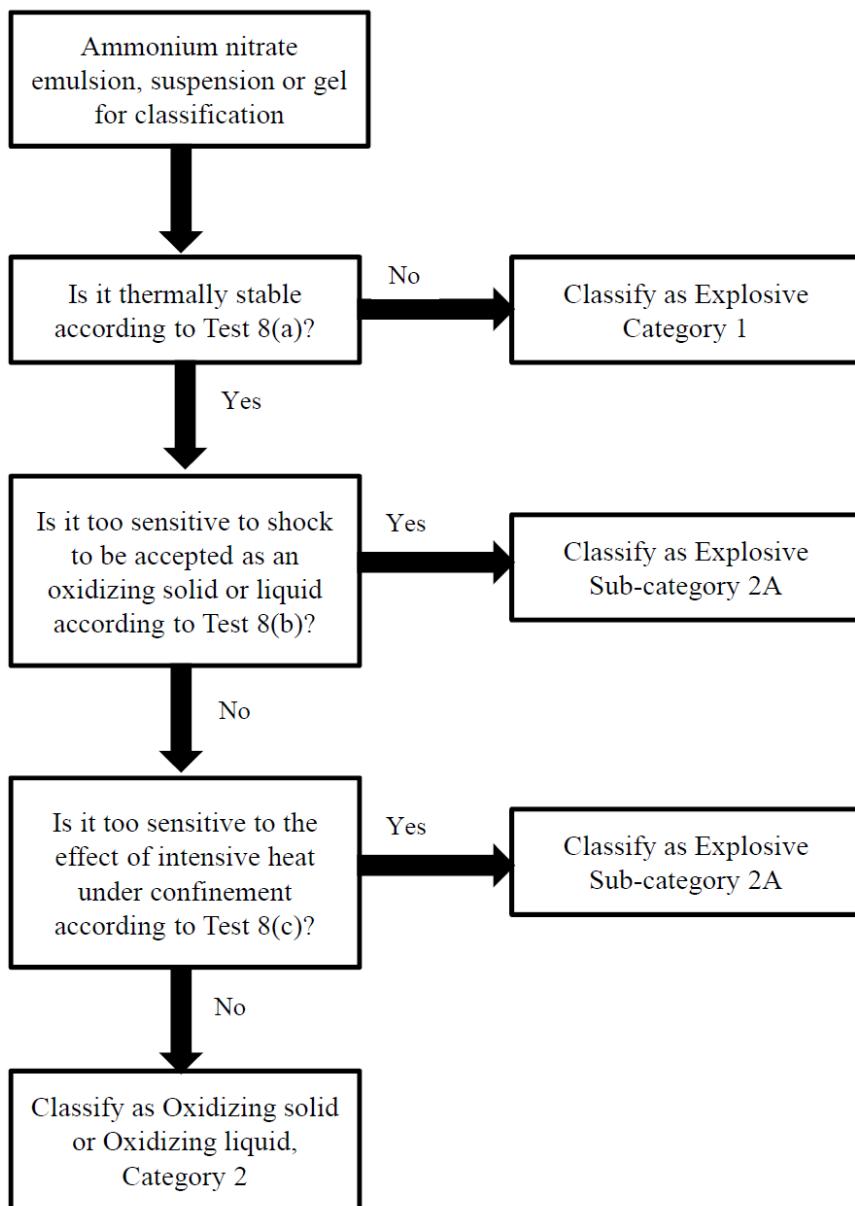
[2.1.4.2.4 For the purposes of risk management outside the scope of GHS, explosives in configurations other than transport may be evaluated using risk assessment procedures, which may include additional testing, to identify and minimize risk in specific scenarios.]

Figure 2.1.1



\* For ammonium nitrate emulsions, suspensions or gels, refer to Figure 2.1.2

Figure 2.1.2



## Annex 2 – List of potential UN-numbers assigned to Sub-category 2B

Note that this list is based on the opinions of some experts in the ICG, and is subject to further discussion.

UN-number	Description (shortened)*	Transport classification	
		Division	Compatibility Group
0012	Cartridges SA	1.4	S
0014	Cartridges Blanks	1.4	S
0044	Primers, cap type	1.4	S
0055	Cartridges cases	1.4	S
0066	Igniter cord	1.4	G
0070	Cable cutters	1.4	S
0105	Safety Fuse	1.4	S
0131	Fuse lighters	1.4	S
0173	Release devices	1.4	S
0174	Rivets	1.4	S
0191	Hand Signals	1.4	G
0197	Smoke Signals	1.4	G
0276	Power cartridges	1.4	C
0278	Oil well cartridges	1.4	C
0306	Tracers for ammunition	1.4	G
0312	Signal cartridges	1.4	G
0317	Fuses, igniting	1.4	G
0323	Cartridges, power device	1.4	S
0325	Igniters	1.4	G
0337	Fireworks	1.4	S
0338	Cartridges Blanks	1.4	C
0339	Cartridges SA	1.4	C
0345	Projectiles	1.4	S
0368	Igniting fuses	1.4	S
0373	Hand Signals	1.4	S
0379	Cases, cartridge empty with primer	1.4	C
0403	Aerial Flares	1.4	G
0404	Aerial Flares	1.4	S
0405	Signal Cartridges	1.4	S
0425	Projectiles, inert with tracer	1.4	G
0446	Cases, combustible, empty, without primer	1.4	C
0454	Igniters	1.4	S
0503	Airbags	1.4	G
0505	Ship distress signals	1.4	G
0506	Ship distress signals	1.4	S
0507	Smoke Signals	1.4	S
0509	Smokeless Powder	1.4	C
0510	Rocket motors	1.4	C

\* See the Dangerous Goods List in Chapter 3.2 of the UN Model Regulations for the full description

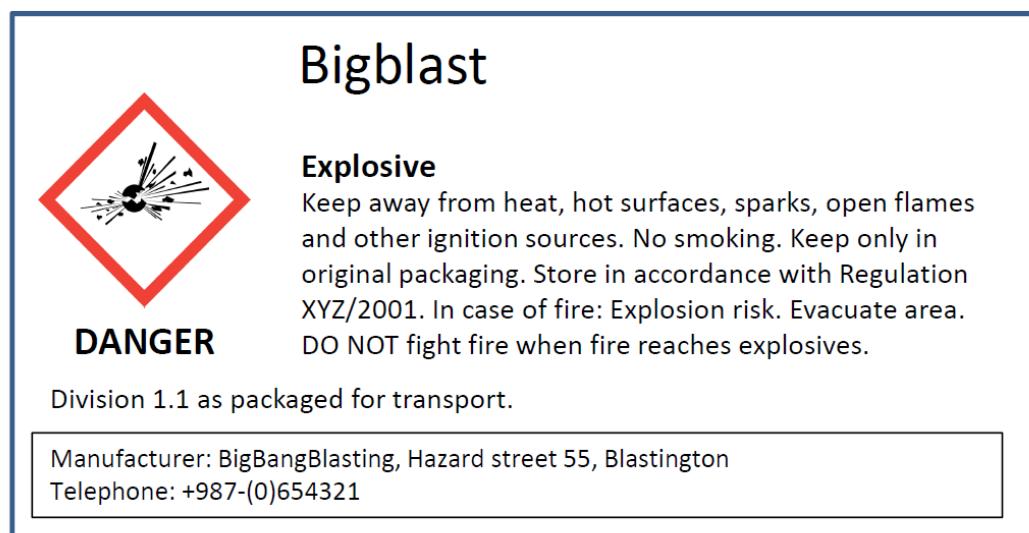
### Annex 3: Example GHS-labels for some Explosives.

Note that these examples are for illustration purposes only and may not adhere to all aspects of the GHS or its implementations in various jurisdictions.

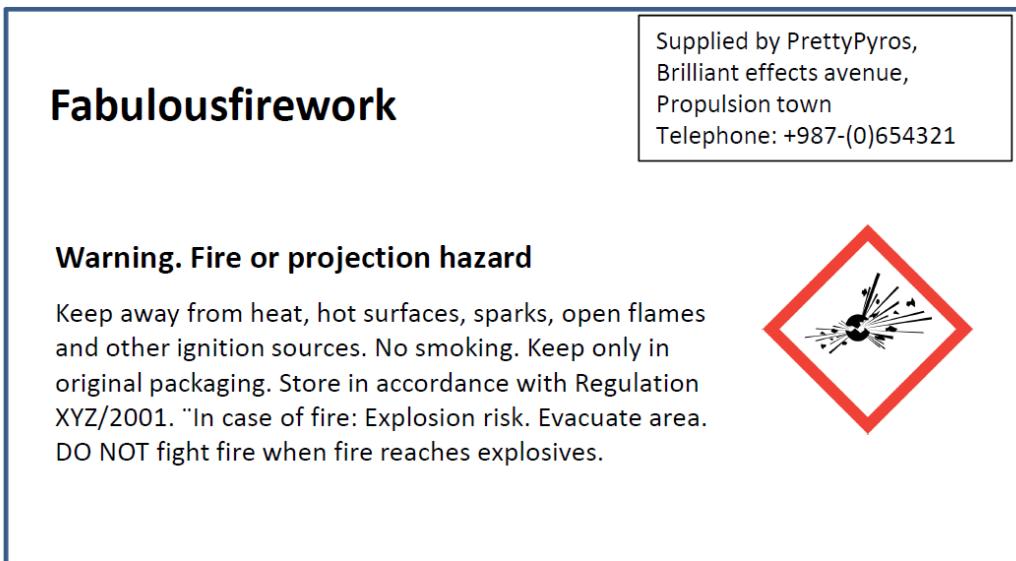
Example label for a blasting explosive in Division 1.1 according to Chapter 2.1 of GHS Rev. 6:



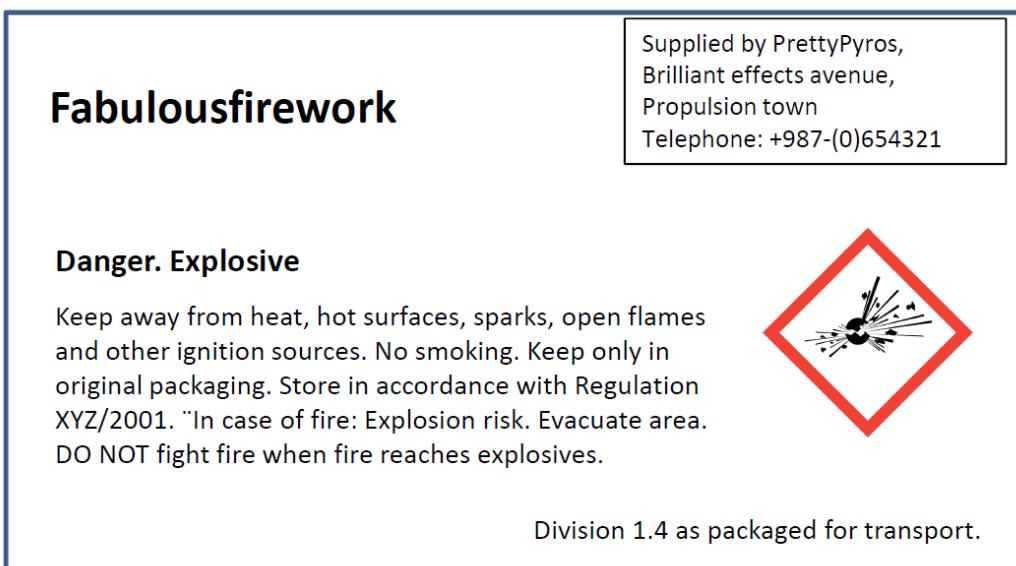
Example label for a blasting explosive Category 2A according to revised Chapter 2.1 as in Annex 1:



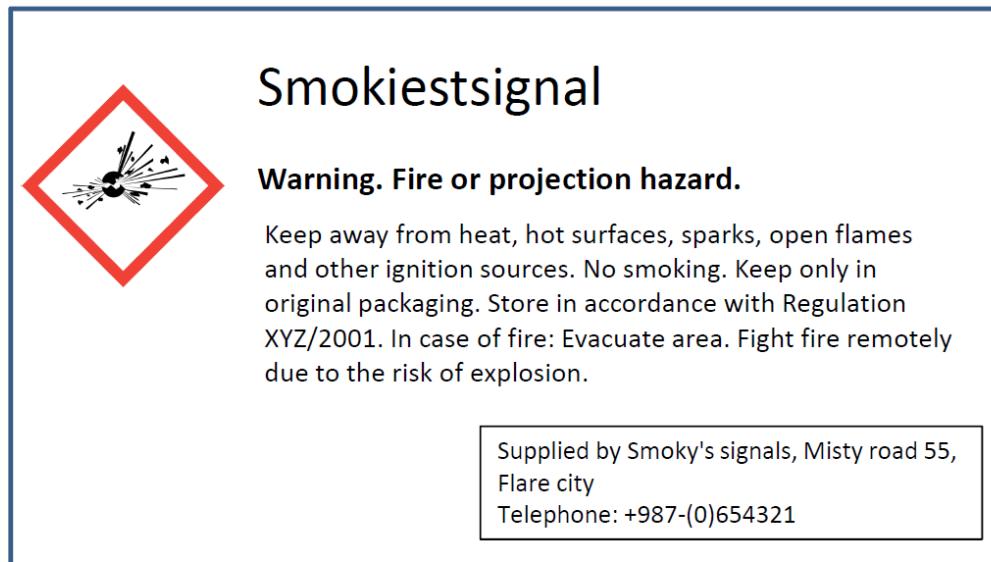
Example label for a firework in Division 1.4 according to Chapter 2.1 of GHS Rev. 6:



Example label for a firework in Category 2A according to revised Chapter 2.1 as in Annex 1:



Example label for a smoke signal in Division 1.4 according to Chapter 2.1 of GHS Rev. 6:



Example label for a smoke signal in Category 2B according to revised Chapter 2.1 as in Annex 1:

