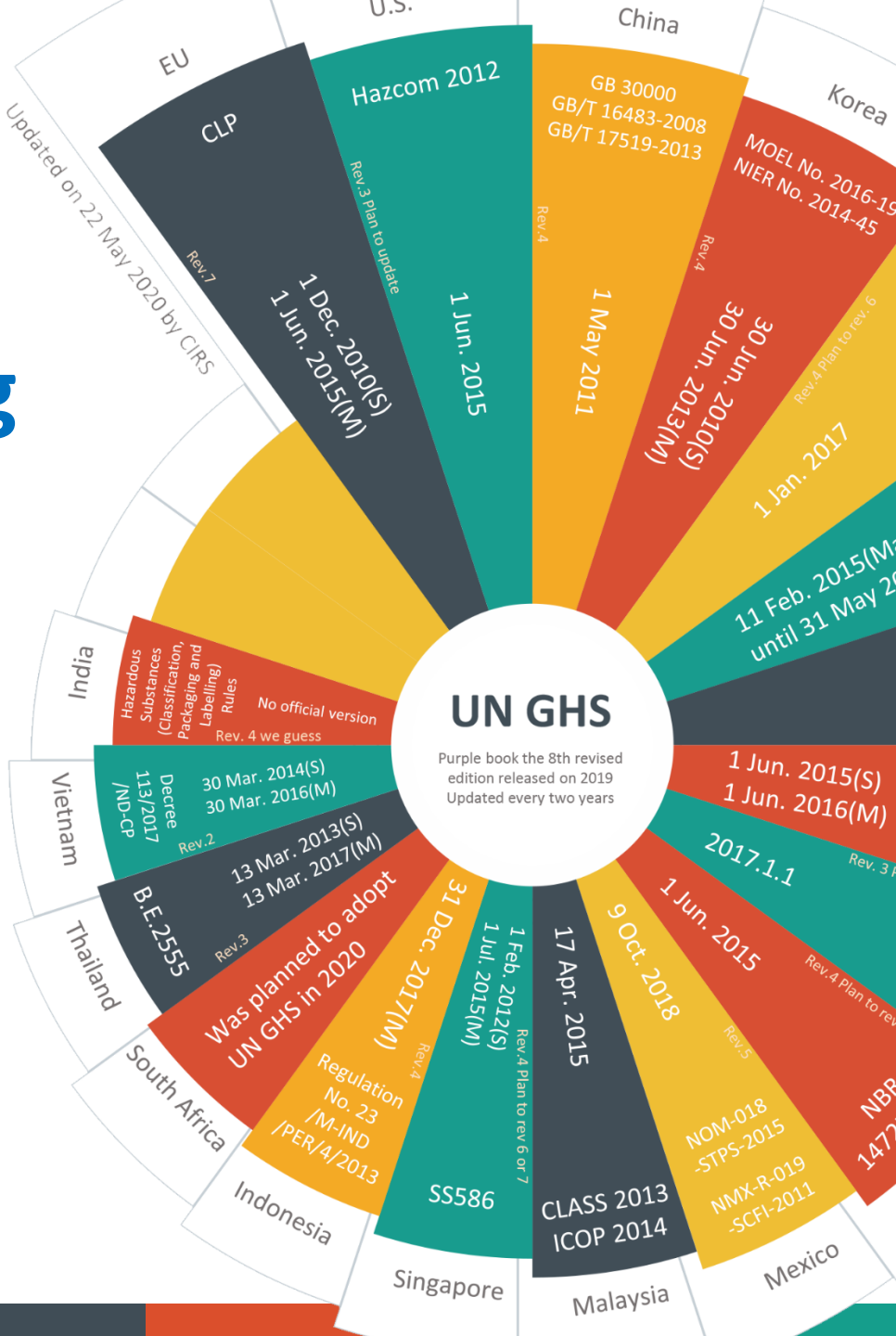
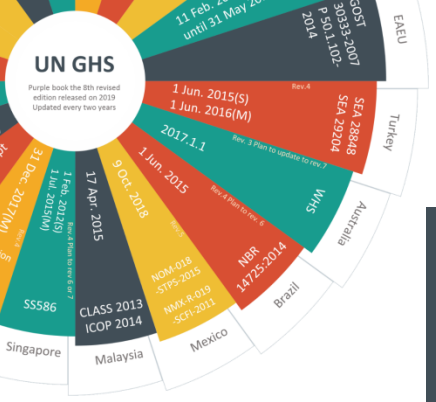
Global GHS Training Course

Does article needs to comply with GHS

Cloris Pan

Address: Regus Harcourt Centre, D02 HW77, Dublin, Ireland
Tel: 00 353 (1) 477 3709
Web: www.cirs-reach.com





Our product is an “Article”, shall we prepare SDS for it?

Not Required

“Articles” as defined in the 29 CFR 1910.1200

Required

Explosives

containing releasable substances/mixtures (hazardous)

Contents

- “Articles” definitions
- GHS Classification of explosives
- “Articles "mentioned in EU CLP
- Substances in Articles
- Summary

GHS scope

- The GHS applies to pure substances and their dilute solutions and to mixtures.

- “Articles” as defined in the Hazard Communication Standard (29 CFR 1910.1200) of the Occupational Safety and Health Administration of the United States of America, or by similar definition, are outside the scope of the system.

Definition in 29 CFR 1910.1200(c)

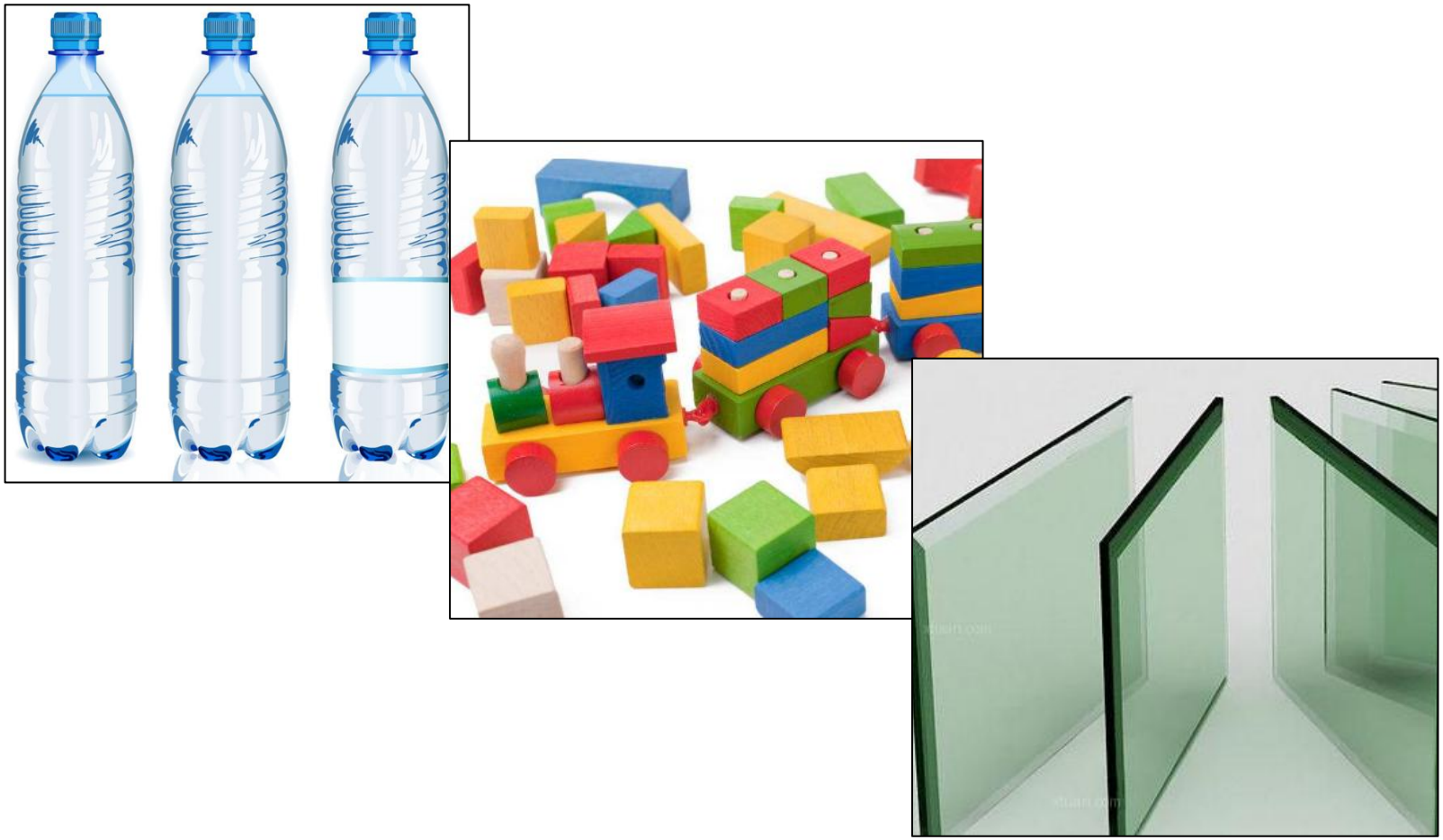
- Article means a manufactured item other than a fluid or particle:

  (i) which is formed to a specific shape or design during manufacture;

  (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and

  (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.

Definition in 29 CFR 1910.1200(c)



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- “Articles” definitions
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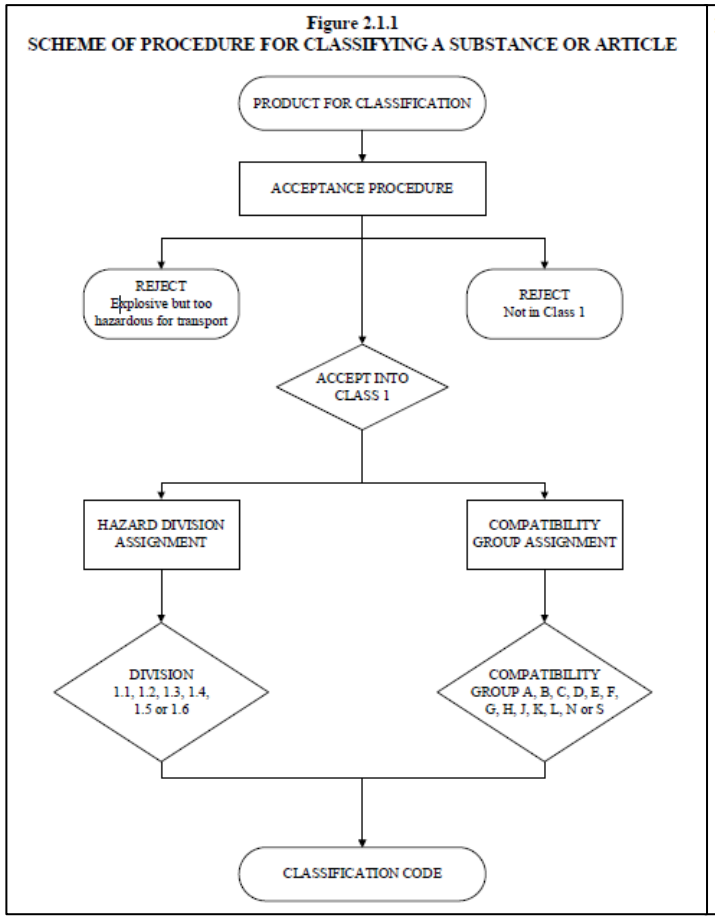
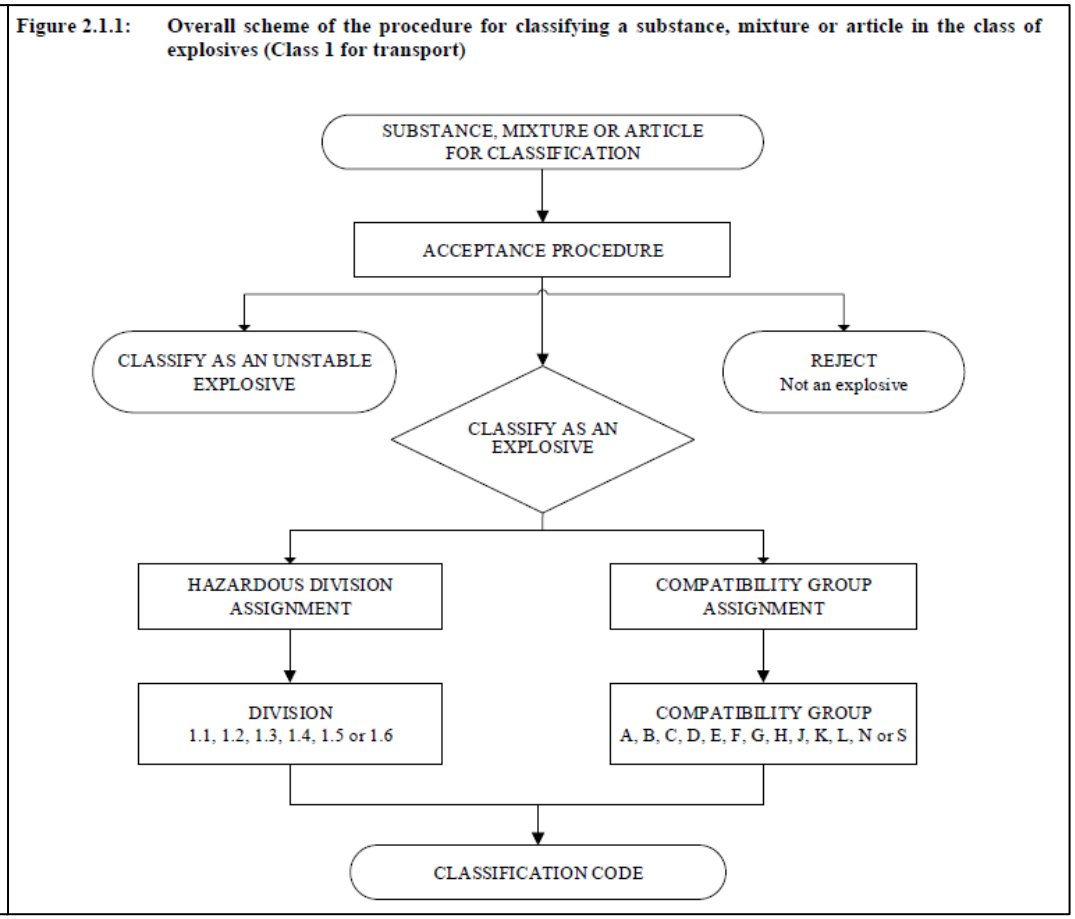
Explosive & Pyrotechnic article

- **Explosive article** means an article containing one or more explosive substances;
- **Pyrotechnic article** means an article containing one or more pyrotechnic substances;

Explosives classifications

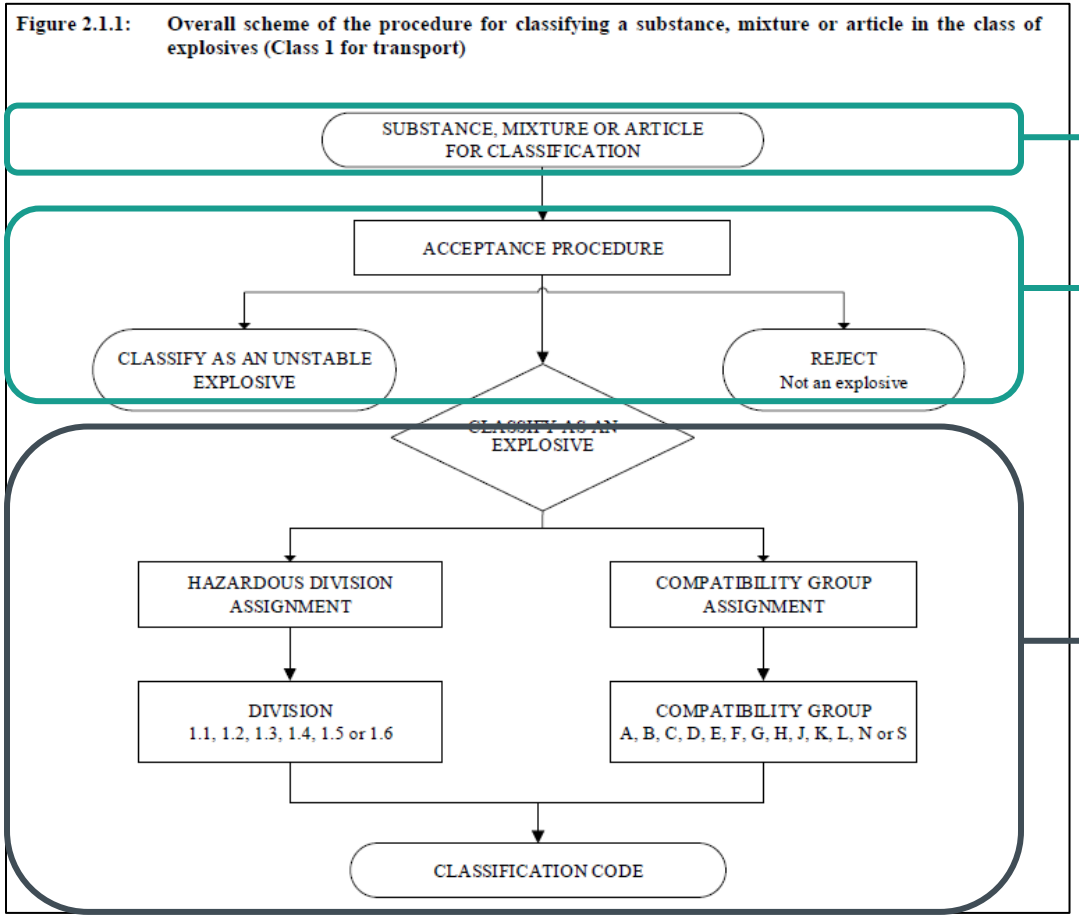




TDG (orange book)

GHS (purple book)

Explosives classifications



Step 1
Test series 1

Step 2
Test series 2-4

Step 3
Test series 5-7
Test series 8
(ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives (ANE))

Transport of Dangerous Goods Manual of Tests and Criteria

PART I: CLASSIFICATION PROCEDURES, TEST METHODS AND CRITERIA RELATING TO EXPLOSIVES

http://www.unece.org/trans/danger/publi/manual/rev7/manrev7-files_e.html

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 are given in table A6.1 in the Appendix 6 of the Manual of Tests and Criteria

Table A6.1 EXAMPLES OF CHEMICAL GROUPS INDICATING EXPLOSIVE PROPERTIES IN ORGANIC MATERIALS

Structural feature	Examples
C-C unsaturation	Acetylenes, acetylides, 1,2-dienes
C-Metal, N-Metal	Grignard reagents, organo-lithium compounds
Contiguous nitrogen atoms	Azides, aliphatic azo compounds, diazonium salts, hydrazines, sulphonylhydrazides
Contiguous oxygen atoms	Peroxides, ozonides
N-O	Hydroxylamines, nitrates, nitro compounds, nitroso compounds, N-oxides, 1,2-oxazoles
N-halogen	Chloramines, fluoroamines
O-halogen	Chlorates, perchlorates, iodosyl compounds

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

b) The calculated oxygen balance is less than -200

The oxygen balance is calculated for the chemical reaction:

$$C_xH_yO_z + [x+(y/4)-(z/2)]O_2 \rightarrow xCO_2 + (y/2)H_2O$$

Using the formula:

$$\text{Oxygen balance} = -1600[2x+(y/2)-z]/\text{molecular weight.} \rightarrow < -200$$

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

c) For an organic substance, or a homogenous mixture of organic substances,

- 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 *Manual of Tests and Criteria*); or

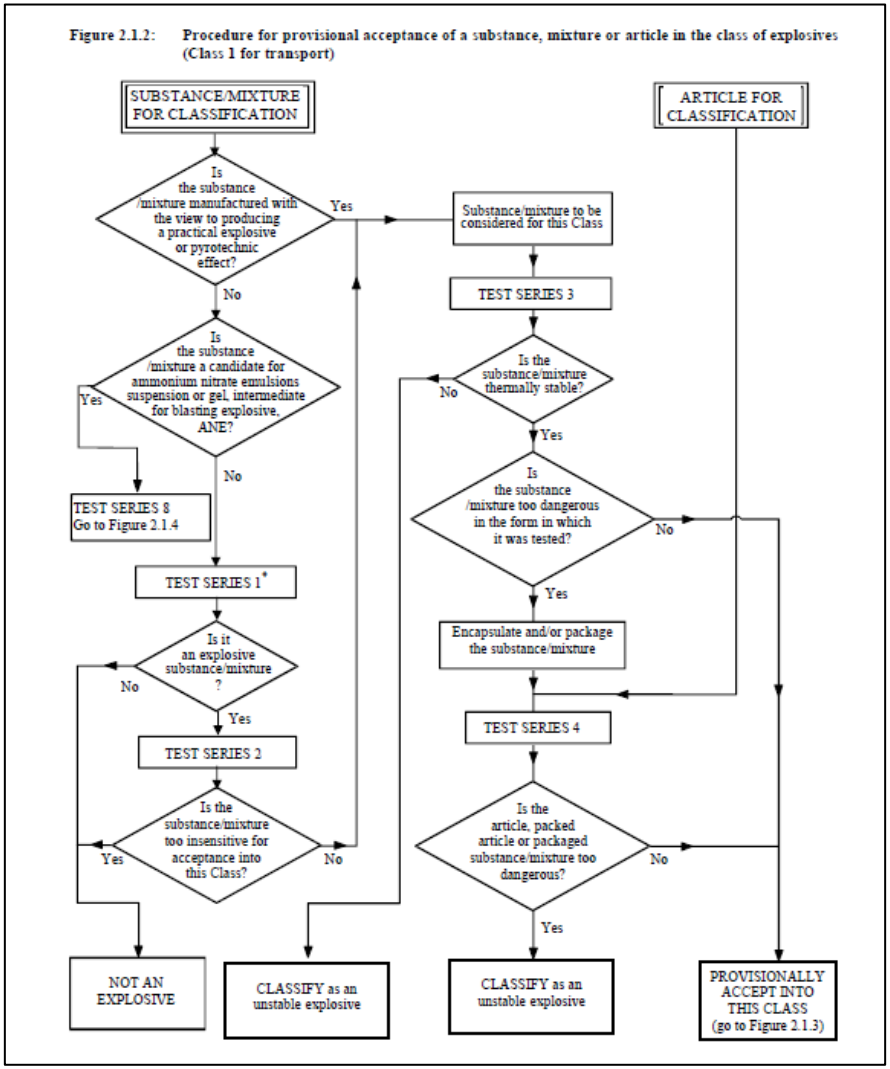
Such as differential scanning calorimetry or adiabatic calorimetry.

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

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

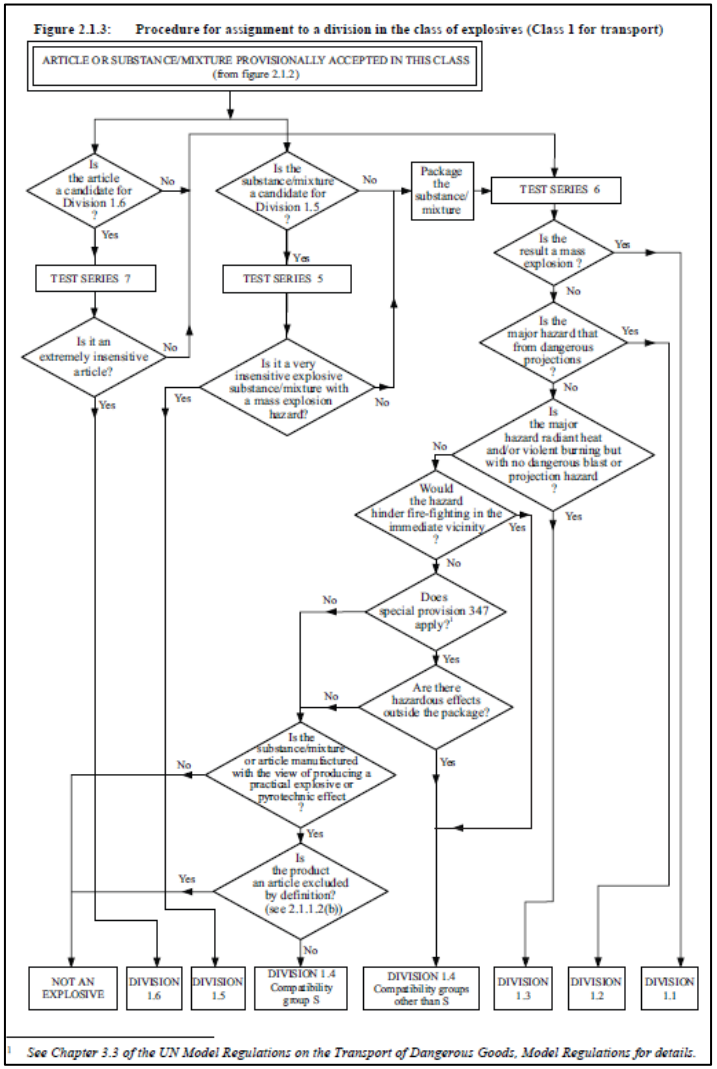
- Less than 15% by mass, if the oxidizing substance is assigned to Category 1 or 2
- Less than 30% by mass, if the oxidizing substance is assigned to Category 3.

Explosives(purple book)



http://www.unece.org/trans/danger/publi/ghs/ghs_rev08/08files_e.html

Explosives(purple book)



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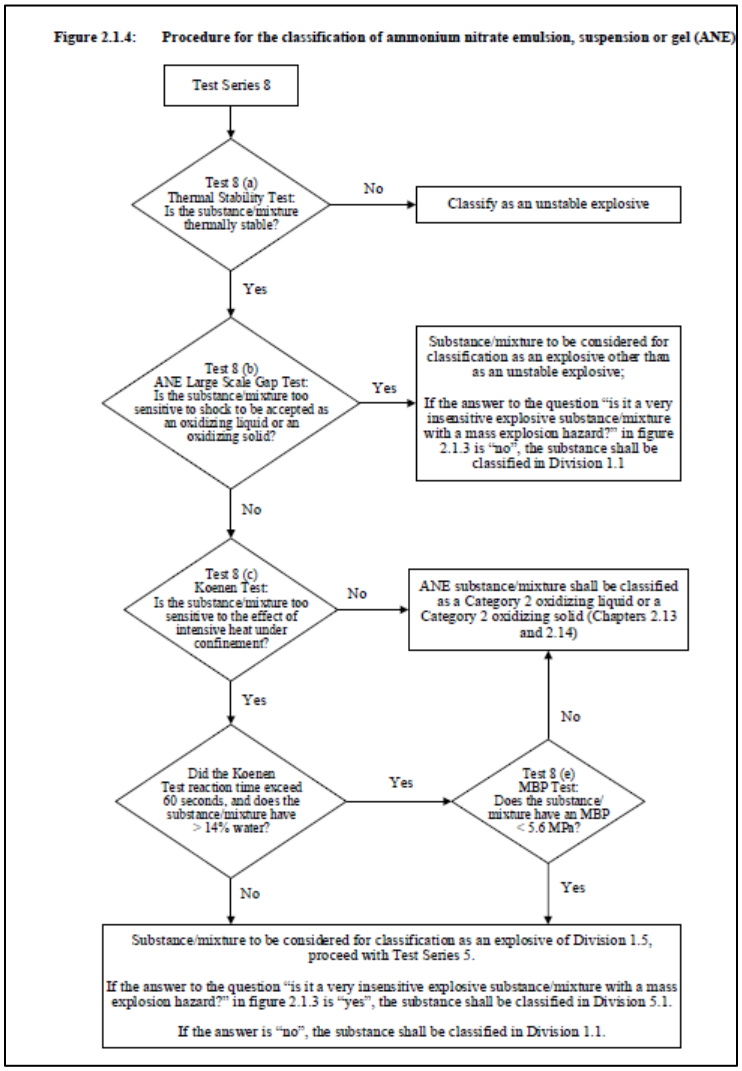

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Article 1

Purpose and scope

1. The purpose of this Regulation is to ensure a high level of protection of human health and the environment as well as the free movement of substances, mixtures and articles as referred to in Article 4(8) by:

(a) harmonizing the criteria for classification of substances and mixtures, and the rules on labelling and packaging for hazardous substances and mixtures;

(b) providing an obligation for:

(i) manufacturers, importers and downstream users to classify substances and mixtures placed on the market;

(ii) suppliers to label and package substances and mixtures placed on the market;

(iii) manufacturers, producers of articles and importers to classify those substances not placed on the market that are subject to registration or notification under Regulation (EC) No 1907/2006;

Article 4

General obligations to classify, label and package

8. For the purposes of this Regulation, the articles referred to in section 2.1 of Annex I shall be classified, labelled and packaged in accordance with the rules for substances and mixtures before being placed on the market.

PART 2: PHYSICAL HAZARDS
2.1 Explosives

Annex I

2.1. **Explosives**

2.1.1. ***Definitions***

2.1.1.1. 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 in points (a) and (b) which are manufactured with a view to producing a practical, explosive or pyrotechnic effect.

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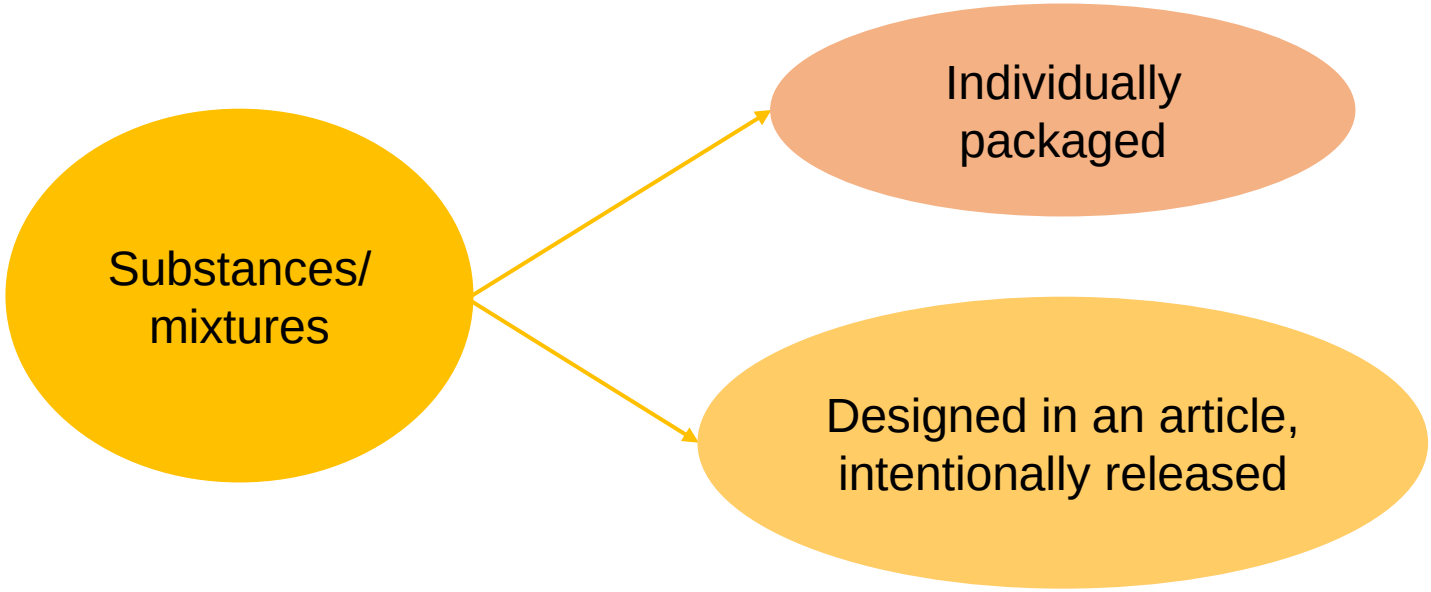
Substances in articles (REACH)

SDS required when,

1) the substance is intended to be released under normal or reasonably foreseeable conditions of use.

2) the substance meets the criteria for classification as hazardous in accordance with CLP or PBT/vPvB …



Example

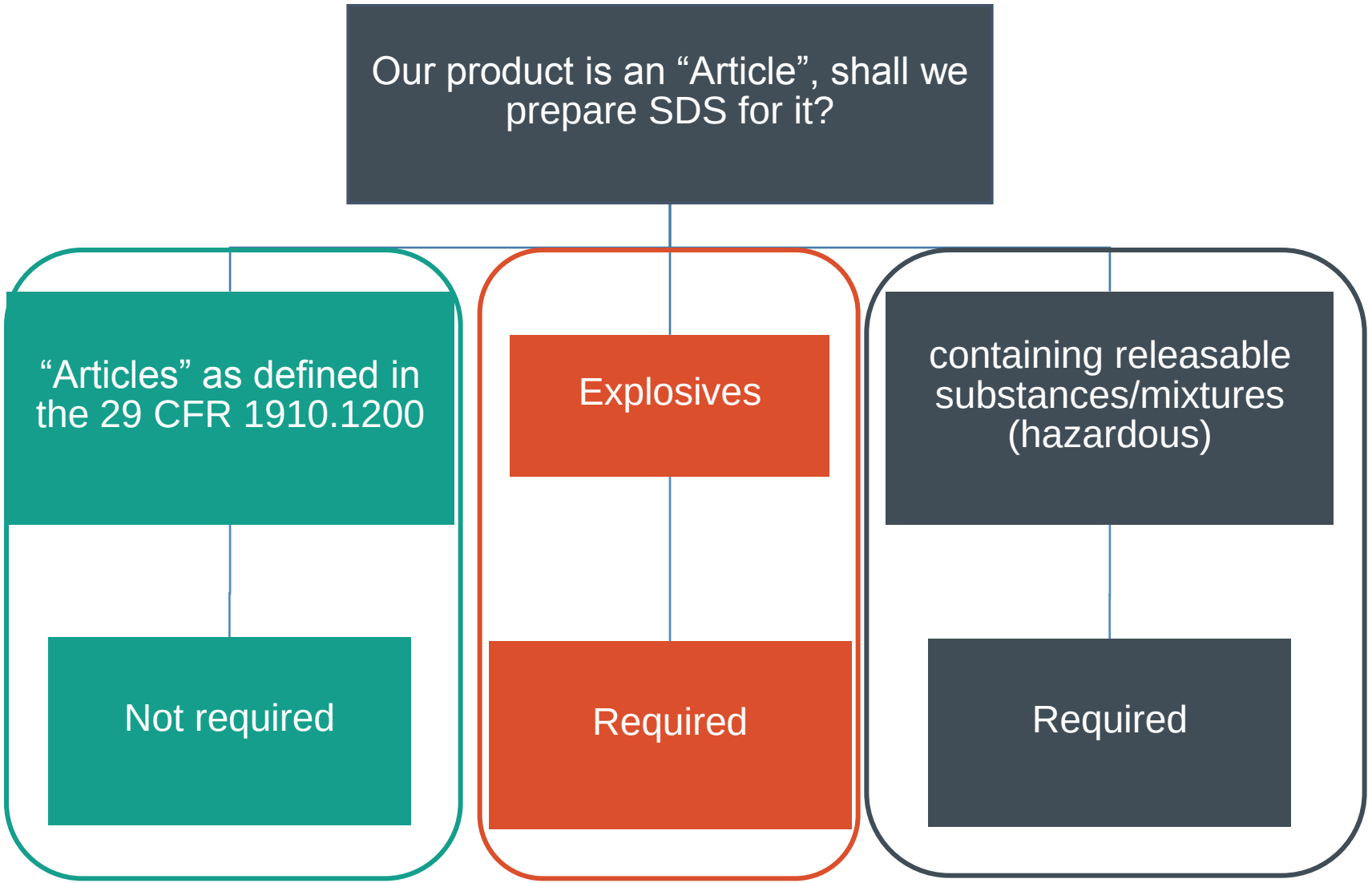
Other Articles containing hazardous chemicals which can be released, like adhesives, lubricants etc. The actual product and the consideration of intentional release chemicals can be more complicated.

Ink

Volatile

Chemicals

Summary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Explosives
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Required

Q&A Session

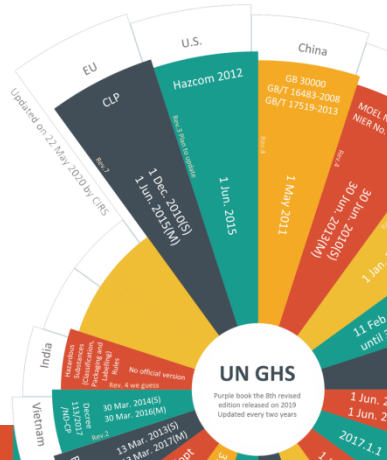
Following our event, please always click

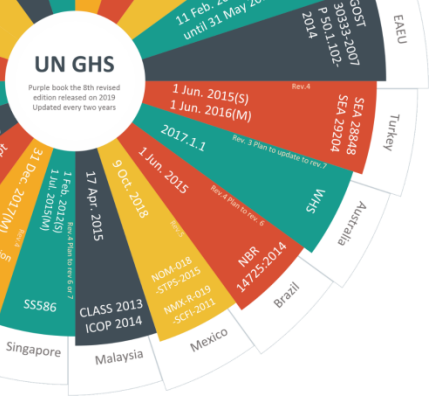
http://www.cirs-reach.com/news-and-articles/2020-CIRS-Training-Courses-Global-GHS.html

to find further updates

Contact Email: service@cirs-reach.com
For our Consultation

Next Webinar: How to keep your CBI in secret during hazard communication
Time & Date: (GMT+1) 15:00, August 19th
Registration still Available





Thank you for your attention