

# International transport of dangerous goods by road

UN Mechanisms for the Transport of Dangerous Goods  
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Ulaanbaatar, 28 June 2017



**UNECE**

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# Introduction

## Transport of dangerous goods

Dangerous goods are produced/transported internationally in very large quantities

Highest volumes transported (USA/EU) include:

- energy products: petroleum products, flammable gases
- flammable liquids/gases (other than energy products)
- corrosive substances

Dangerous goods cover a very large range of products

Dangerous goods present risks (all stages of lifecycle) for:

- population
- property
- the environment



# UN Regulatory framework - ECOSOC

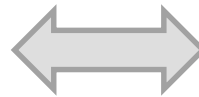
**ECOSOC**



**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 TDG**



**Sub-Committee of Experts  
on the GHS**



**Recommendations on the Transport of  
Dangerous Goods  
Model Regulations**



**Globally Harmonized System of  
Classification and Labelling of  
Chemicals**

# UN Regulatory framework (2)

## Mandate of the CETDG



- To elaborate recommendations:
  - addressed to all governments and international organizations concerned with the safety of transport of dangerous goods;
  - allowing the uniform development of national and international regulations governing the various modes of transport.



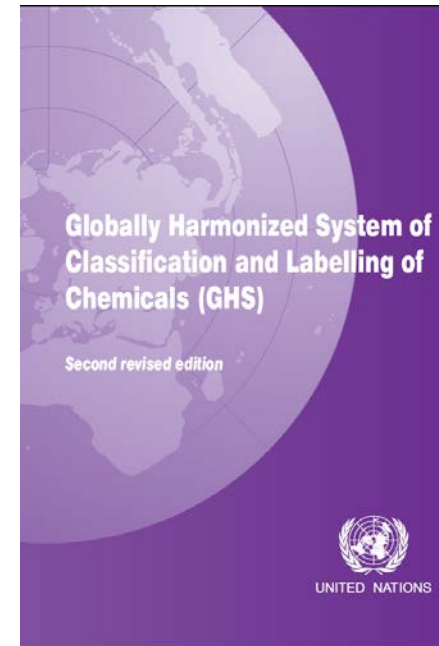
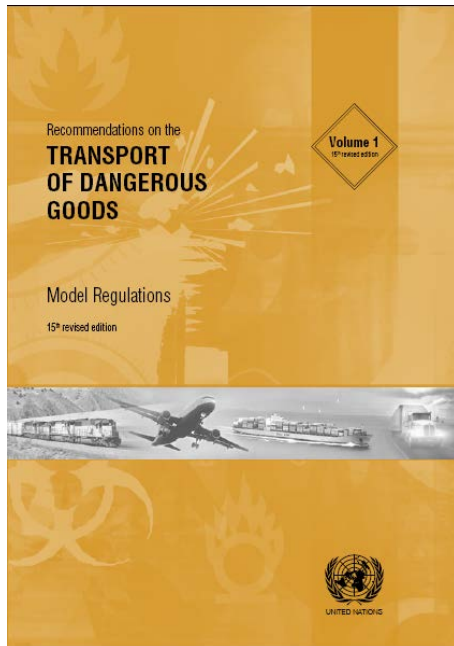
**“UN Recommendations on the Transport of Dangerous Goods, Model Regulations” (“Orange Book”).**

# UN Regulatory framework (3)

## Orange and Purple books

**“Orange Book”:**  
**UN Recommendations on the  
Transport of Dangerous Goods.  
Model Regulations**

**“Purple Book”:**  
**Globally Harmonized System of  
classification and labelling of  
chemicals (GHS)**



# UN Regulatory framework (4)

## UN Model Regulations



- Contain all necessary provisions concerning:
  - classification and identification of dangerous goods;
  - packing conditions (including standards for packaging and tank construction);
  - labelling, marking and placarding of packages and transport equipment; and
  - transport documentation
- Apply to all modes of transport but remain flexible enough to accommodate any special additional requirements that would have to be met by specific modes of transport, or at national or regional level.

# UN Regulatory framework (5)

- It is recommended that:
  - all governments (when developing national regulations) and
  - international organizations (when developing regional or internationally legally binding instruments),

follow the same structure and implement the provisions contained in UN Model Regulations.

- Its provisions may also be supplemented by specific provisions or requirements specific to one mode of transport when those are not addressed in the Model Regulations.

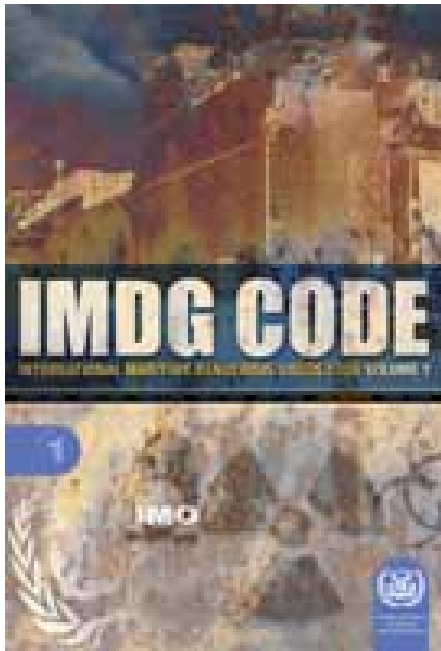


# UN Regulatory framework (6)

## Global application

### Maritime transport: IMDG Code

(mandatory 155 countries)



### Air transport: ICAO Technical Instructions

(mandatory 188 countries)



# UN Regulatory framework (7)

## Regional application

**UN ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE (ITC)  
WORKING PARTY ON THE TRANSPORT OF DANGEROUS GOODS (WP.15)**

**WP.15**

**Road**



**ADR**

**WP.15/OTIF**

(RID/ADR/ADN Joint meeting)  
(WP.15/AC.1)

**Rail/Road/  
Inland Waterways**

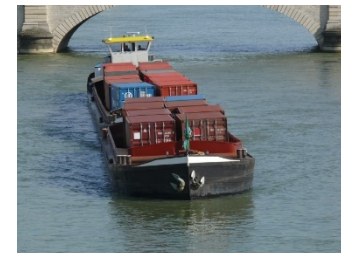


**RID/ADR/ADN**

**WP.15/CCNR**

(WP.15/AC.2 and AC.3)

**Inland  
Waterways**



**ADN**

# UN Regulatory framework (8)

## Regional application



- **SMGS countries (rail):** Annex 2 of SMGS
- **ASEAN countries:** Protocol No.9 to the ASEAN Framework Agreement on the Facilitation of Goods in Transit (Signed on September 2002)
- **MERCOSUR countries:** Agreement for the facilitation of inland transport of dangerous goods (annexes based on the 7th edition of the UN Model Regulations)
- **ANDEAN countries:** Considering using the 13th revised edition of the UN Model Regulations and/or ADR/RID

# UN Regulatory framework (9)

## National application



- **European Union:** Directive 2008/68/EC applicable to inland transport of dangerous goods (road, rail, inland waterways) making the requirements of ADR, RID and ADN applicable to domestic and intracommunautary traffic by reference.
- **North America:** Canadian and USA regulations based on the 19th revised edition of the UN Model Regulations
- **Other countries:** Australia, Brazil, China, Japan, etc.
- The fact that national regulations applicable to inland transport are not brought into line simultaneously, or completely, is still causing problems in international trade, in particular in the case of multimodal transport

# Requirements (1)

## Limited quantities



Packagings containing dangerous goods in limited quantities only need to conform to some general requirements

# Requirements (2)

## “Classic” packagings

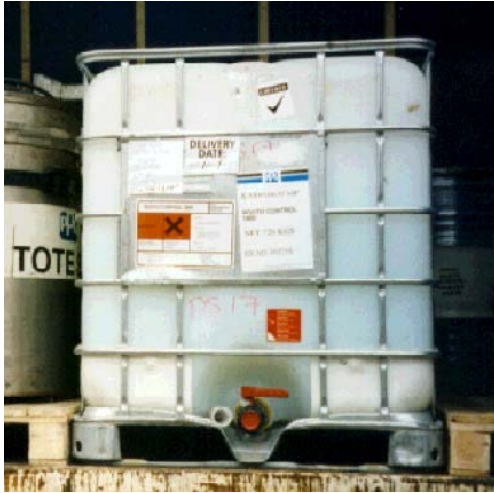


Up to 400 kg/450 l  
Drums, jerricans,  
boxes, bags, etc

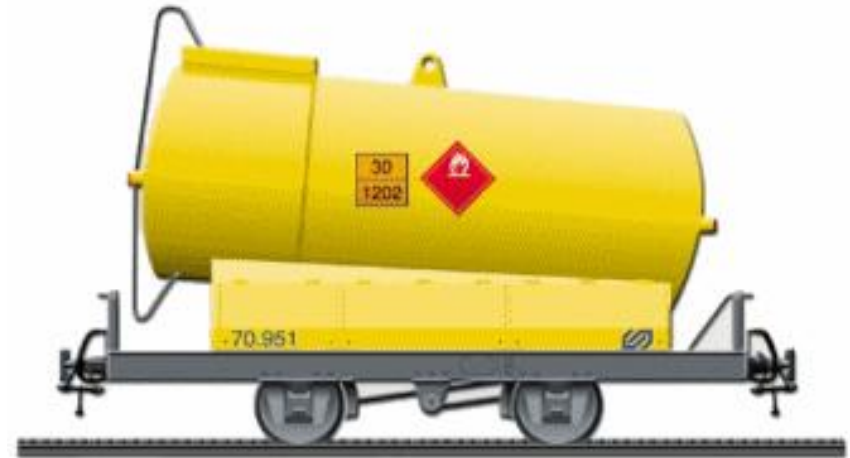


# Requirements (3)

## IBCs and large packagings



# Requirements (4) Tanks





# Requirements (5) “UN mark”



UN 4G/Y31/S/03/GB/1919

# Requirements (6)

## Examples of performance tests



Drop test (2.10 m)



Hydraulic pressure test

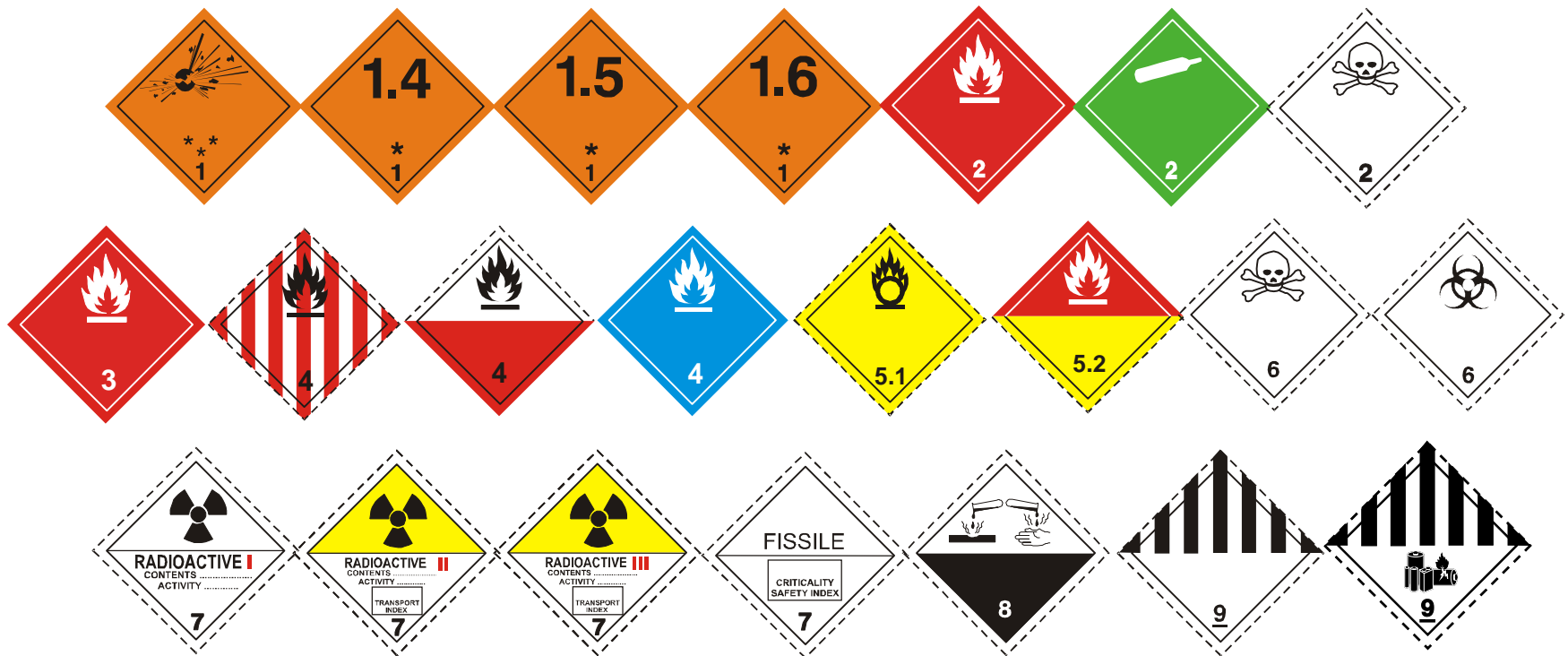
# Requirements (7) ADR/RID tanks



# Requirements (8)

## Hazard labels

Affixing appropriate hazard label(s) on the packages:



# Requirements (9) Marks (UN No. and PSN)

Marking the UN (identification) number of the goods on the package, and the “Proper Shipping Name”



UN No.: 3082

Proper shipping name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

# Requirements (10): Placards

Affixing placards on the cargo transport units (vehicles, wagons, containers, tanks) and displaying, either on these placards or on separate orange plates, the UN identification number;



# Requirements (11) Transport document

## MULTIMODAL DANGEROUS GOODS FORM

1. Shipper / Consignor / Sender		2. Transport document number		
3. Page 1 of Pages		4. Shipper's reference		
6. Consignee		5. Freight Forwarder's reference		
7. Carrier (to be completed by the carrier)		SHIPPER'S DECLARATION I hereby declare that the contents of this consignment are fully and accurately described below by the proper shipping name, and are classified, packaged, marked and labeled (blended and are in all respects in proper condition for transport according to the applicable international and national governmental regulations.		
8. This shipment is within the limitations prescribed for: (Delete non-applicable) PASSENGER AND CARGO AIRCRAFT		9. Additional handling information		
10. Vessel / flight no. and date	11. Port / piece of loading	14. Shipping marks * Number and kind of packages; description of goods Gross mass (kg) Net mass Cube (m <sup>3</sup> )		
12. Port / piece of discharge	13. Destination			
15. Container identification No./ vehicle registration No.	16. Seal number (s)	17. Container/vehicle size & type	18. Tare (kg)	19. Total gross mass (including tare) (kg)
<b>CONTAINER/VEHICLE PACKING CERTIFICATE</b> I hereby declare that the goods described above have been packed/loaded into the container/vehicle identified above in accordance with the applicable provisions.** <b>MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING</b>		<b>21. RECEIVING ORGANISATION RECEIPT</b> Received the above number of packages/containers/trailers in apparent good order and condition unless stated herein: RECEIVING ORGANISATION REMARKS:		
20. Name of company		Hauler's name		22. Name of company (OF SHIPPER PREPARING THIS NOTE)
Name / Status of declarant		Vehicle reg. no.		Name / Status of declarant
Place and date		Signature and date		Place and date
Signature of declarant		DRIVERS SIGNATURE		Signature of declarant

\* FOR DANGEROUS GOODS you must specify UN no., proper shipping name, hazard class, packing group (where assigned) and any other element of information required under applicable national and international regulations

Providing details of the dangerous goods offered for shipment in the transport document (i.e. UN No., name, hazard class, etc).

# Requirements (12)

## Training (UN Model Regulations)



- Human errors are the main cause of accidents.
- The UN Model Regulations (and related legal instruments):
  - (a) require training of all persons engaged in the transport of dangerous goods:
    - in the contents of dangerous goods requirements;
    - commensurate with their responsibilities; and
  - (b) lay down specific provisions regarding:
    - general awareness/familiarization training,
    - function specific training,
    - safety training, records of training, etc.
- Training can be provided by the employer



# Requirements (13) Security

- After September 11th new security provisions
- 2 types:
  - (a) General provisions applicable to all dangerous goods:
    - security of areas for temporary storage of dangerous goods
    - identification of carriers and their staff
    - registration of valid training certificates
  - (b) Provisions applicable to “high consequence dangerous goods”: compliance with a security plan

# Requirements (14)

## Operational



- General: all modes of transport (UN Model Regulations)
  - use of packagings, bulk packagings and tanks.
- Mode specific:
  - loading, unloading and handling;
  - stowage and segregation;
  - restrictions;
  - provisions in the event of incidents and for fire precautions;
  - requirements for vehicle crew and equipment;
  - supervision;

# Enforcement (1) Controls



- Responsibility of the national authorities
- Necessary to incite to compliance
- Effective tool:
  - to reveal problems related to:
    - safety of transport or
    - practicability of regulations
  - to improve the practicability of the regulations
- Provisions for the control of compliance with the applicable requirements are to be found in the relevant conventions or national legislation (e.g.: Chapter 1.8 of ADR/RID/ADN).

# Enforcement (2)

## Problems of compliance

- Problems of compliance
- Harmonization of national and international rules is an important factor:
  - for better compliance with safety requirements and
  - for transport facilitation

# Thank you

<http://www.unece.org/trans/danger/danger.htm>

