

Hazard Awareness

June 16-17, 2014,
Port of Tema, Ghana



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Global Project Management
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Emergency Response,
BASF SE



Incident Command system

- Role of Incident Commander
- Responsibilities of Incident Commander
- Lead Interventions
- Techniques and Techniques

Dangerous Goods regulations around the world

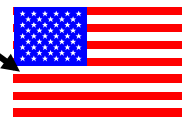


UN-Recommendations

International regulations



**IMDG/BC/IBC/GC-Code
IATA, ICAO-TI**



49CFR



**ADR / RID, ADN
EU-Directive**

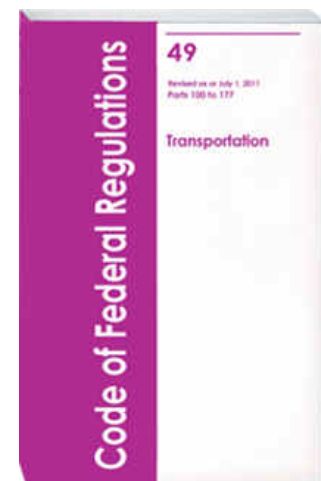
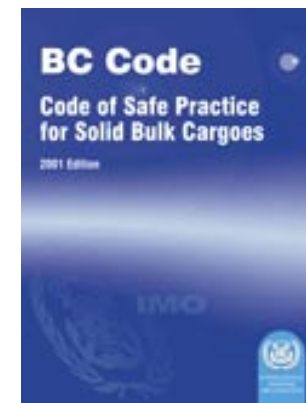
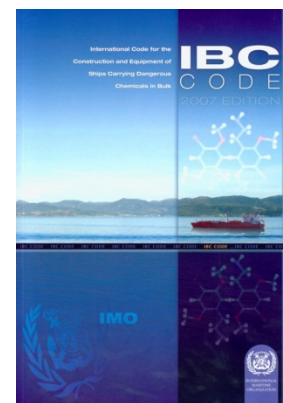
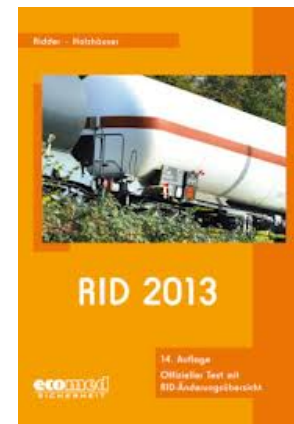
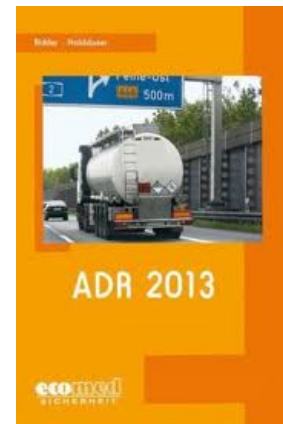


**Nationale
Vorschriften**

Local/Regional specificity



Dangerous Goods regulations around the world



Consequence of legal infringements

Insufficient load securing



Fuhrparkmanagement

Regierungspräsidium - 34110 Kassel 096/0000635/23/34123-11.08/0.55EUR	Auskunft erteilt: Herr Klaus Telefon: 0561/106-1762 Telefax: 0561/106-1851997 E-Mail: bgp@zbs.hessen.de Internet:
Firma: BASF N.b.: 67056 Ludwigshafen am Rhein	Datum: 23.11.2006
Aktenzeichen: 980.200197.2	

Anhörung im Bußgeldverfahren

Sehr geehrte Damen und Herren,

Ihnen wird vorgeworfen, am 23.10.2006 um 08:00 Uhr in Gem. Viernheim, A 6, km 559, Saarbrücken-Heilbronn als Verladerein oder Verlader des LKW LU-J 9769 folgende Ordnungswidrigkeit begangen zu haben:

Als eigenverantwortlicher Verpacker/Verantwortlicher des eigenverantwortlichen Verpackers von Gefahrgut* haben Sie es unterlassen, die Vorschriften über die Kennzeichnung und Bezeichnung von Versandstücken gemäß Abschnitt 5.1.4 Satz 1,5.2.1 und 5.2.2 ADR zu beachten.
§ 10 Nr. 9 d, § 9 (5) Nr. 1 d Gefahrgutverordnung Straße und Eisenbahn,
* UN 3399

Beweismittel: Foto
Zeuge: POK Scheidel, PAST Darmstadt

Die für den transportierten Stoff der UN-Nr. 3399 vorgesehenen Gefahretikette der Klasse 3 und 4.3 waren nicht angebracht.

Nach § 55 des Gesetzes über Ordnungswidrigkeiten (OWiG) haben Sie Gelegenheit, zu dem Vorwurf Stellung zu nehmen. Es steht Ihnen frei, zur Sache auszusagen. Sie sind aber in jedem Fall - auch wenn Sie die Ordnungswidrigkeit nicht begangen haben - verpflichtet, unrichtige oder unvollständige Angaben zu Ihrer Person im Anhörungsbogen (durch Ausfüllen der Nr. 1 auf der Rückseite) zu berichtigen oder zu vervollständigen. Die Verletzung dieser Pflicht ist nach § 111 OWiG mit Geldbuße bedroht. Den ausgefüllten Anhörungsbogen senden Sie bitte **innerhalb einer Woche** ab Zugang dieses Schreibens zurück. Sofern Sie sich nicht zu dem Vorwurf äußern, kann ohne weitere Anhörung ein Bußgeldbescheid gegen Sie erlassen werden. **Falls Sie sich äußern, werde ich aufgrund Ihrer Angaben entscheiden, ob das Verfahren eingestellt oder ohne weitere Antwort ein Bußgeldbescheid erlassen wird.**

Wenn Sie die Ordnungswidrigkeit nicht begangen haben, teilen Sie bitte neben Ihren Personalien auch die Personalien der verantwortlichen Person unter "Angaben zur Sache" auf der Rückseite mit, hierzu sind Sie nicht verpflichtet. Sie vermeiden dadurch jedoch weitere Ermittlungen.

Im Auftrag
Herr Klaus

Offense to the environment



Duties of the participants involved in the carriage of DG

- **Preparation of the consignment**
(Classification , Respect of transport prohibitions and restrictions, Shipping documents)
- **Packing** of the DG / Filling of Tanks
- **Loading** of the trailer / container / railcar ...
- Control of the transport unit bevor and after Loading,
Loadsecuring
- Transport on public roads
- Discontinuity of the transport, temporary stop over, intermediate storage
- **Unloading** by the consignee
- Unpacking / **Discharging**





Typical process for carrying DG

1. Classification

2. Packing or Filling

3. Labeling and marking



4. Documentation

5. Dispatching and carrying

6. Receiving

DG classification

Difference between «transport» and «use»

	Hazardous Substances	DG
Aplicable	Use and storage of substances	Transport on public roads
Regulations	Global Harmonized System	UN Recommendations (ADR, RID, ADNR, IMDG, IATA)
Uses	Packaging, pipes and storage tanks 	Packaging & Transport units 
Remarks	Acute and chronic hazards	Acute Hazards

DG classification

Class 1
Explosive Substances



Class 2.1
Flammable Gases



Class 2.2

Non-flammable and non-toxic gases



Class 2.3
Toxic Gases



Class 3
Flammable liquids



Class 4.1
Flammable solids



Class 4.2

Self reacting substances



Class 4.3

Substances which in contact with water emit flammable gases



Class 5.1
Oxidizing substances



Class 5.2
Organic Peroxides



Class 6.1
Toxic substances



Class 6.2
Infectious substances



Class 7
Radioactive material



Class 8
Corrosive substances



Class 9
Miscellaneous dangerous substances



DG classification

Example of Flammable gases

- Watch wind direction
- Keep distance
- Read Safety Data Sheets
- Minimum number of people on the spot
- Ask experts if needed
- Use breathing protection to start and stay out of the cloud
- Do measurements (Ex, Ox, Tox) in the nearby
- Check whether antidote are needed as soon as possible

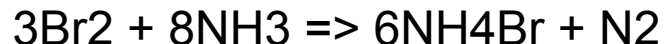


DG classification

- Be aware of static charge and discharge
- Check whether the gas is soluble in water => if yes monitors can be used (if solubility is 5g/100ml and a monitor of 2000l/min means that you can solve 100kg gas/min) => check the properties of the liquid. Look whether something is in the ground which can be affected by the liquid (pipeline, electric cables, data cables,...)



- Ventilate (air flow or water ventury effect)
- Is a chemical neutralization possible ?





DG classification

- Use protective clothing if you go to the spot (gas-tight)
 - But also take additional protective measures to protect your people in front
 - => Monitors, powder, ...
- Watch out with liquefied gases => very low temperatures
- If reactive gases look after stabilizing measures/agents
- Gas heavier or lighter than air
- Can you flare the gas in place

DG classification

Chemical neutralization Br₂ vapours
 $3\text{Br}_2 + 8\text{NH}_3 \Rightarrow 6\text{NH}_4\text{Br} + \text{N}_2$



DG classification

Ammonia leak (gas tight and cold cover protection)



DG classification

Flare butadien in place





DG classification



Techniques and Techniques

Adding stabilizing agents after fire (Vinyl Acetate 339)



DG classification

ADR-Gefahrgüterverzeichnis / → Text / → RID-Verzeichnis Regel

UN-Nr.	Benennung und Beschreibung	Klasse	Klassifizierungscode	Verpackungsgruppe	Gefahrezettel	Sondervorschriften
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3

Alphabetische Übersicht: A B C D E F G H I J K L M N O P Q R S T U

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)
-----	-----	------	------	-----	-----	-----

ortsbew. Tanks u. Schüttgutcont.		ADR-Tanks	
Anweisungen	Sondervorschriften	Tank-codierung	Sondervorschriften
4.2.5.2 7.3.2	4.2.5.3	4.3	4.3.5, 6.8.4
(10)	(11)	(12)	(13)

n.z. = nicht zugelassen

Sondervorschriften für die Beförderung				Nr. zur Kennzeichnung der Gefahr
Lose Schüttung	Be- und Entladg. Handhabg.	Betrieb		
7.3.3	7.5.11	8.5	5.3.2.3	
(17)	(18)	(19)	(20)	

1714	ZINKPHOSPHID	4.3	WT2 I	4.3+ 6.1		
1715	ESSIGSÄUREANHYDRID	8	CF1 II	8+3		

T7	TP2	L4BN	
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CV28			
CV23	S14		
CV28		S2	83



83
1715

Example of BASF DG classification and article releases

Released

DG master data: summary

Mat. Number	Mat. Description	TrGr	PT
Regulation	Release	ID No.	Valid From Valid To
58186957	CONCORD® 100 EC, 10X1 L, TN	0013	01
ADR	<input checked="" type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
RID	<input checked="" type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
ADNR	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
IMDG	<input checked="" type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
IATA_C	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
IATA_P	<input checked="" type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
TDG	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
USDOT	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
AP_GEN	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
CN_ROAD	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
CN_RAIL	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
CN_IW	<input checked="" type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
SA_GEN	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
SA_MERCO_EXT	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999
SA_UNREQ	<input type="checkbox"/>	UN 1993	3 III 21.01.2009 31.12.9999

Not evaluated

blocked out

Document lines: Display messages

Typ	Ite	Message text
<input type="checkbox"/>	000	58186957 ADNR - INLAND WATERWAY TRANSPORT NOT ALLOWED
<input type="checkbox"/>	000	58186957 CN_IW - INLAND WATERWAY TRANSPORT NOT ALLOWED

DG classification

The assignment to an Hazard Class and a Packing Group results of the own properties of the substance. All Dangerous Goods shall be identified with:

Page: 11/13

BASF Safety data sheet according to Regulation (EC) No. 1907/2006
Date / Revised: 03.12.2010
Product: IRGALUBE® ML 601

Version: 2.0

(ID no. 30483286/SDS_GEN_EU/EN)
Date of print 16.02.2011

UN-Nummer = International 4 Digit identification number

Official Name

Packing Group : *indicate the degree of danger*

I Substances presenting high danger

II Substances presenting medium danger

III Substances presenting low danger

14. Transport Information

Land transport

ADR

Hazard class:	8
Packing group:	II
ID number:	UN 3265
Hazard label:	8, EHSM
Proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (contains STERICALLY INHIBITED PHENOL, N,N-BIS(2-ETHYLHEXYL)-((1,2,4-TRIAZOL-1-YL)METHYL)AMIN)



„EHSM“ = Environmentally Hazardous Substance Mark

1. Classification

2. Packing or Filling

3. Labeling and marking

4. Documentation

5. Dispatching and carrying

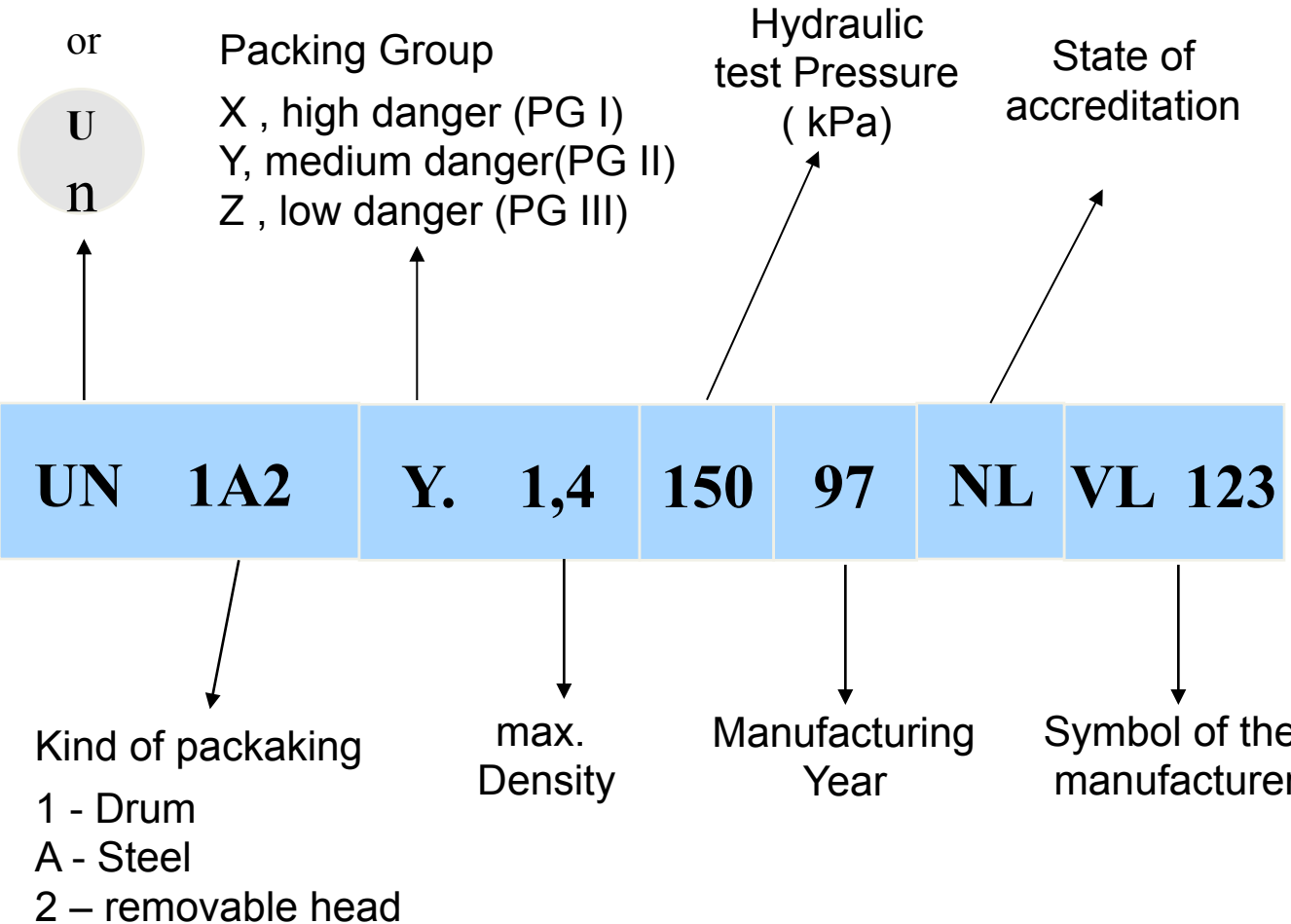
6. Receiving

Different kinds of packaging

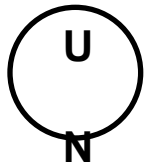


- ❑ Goods shall be packed in good quality packagings
- ❑ They shall be strong enough to withstand the shocks and loadings normally encountered during carriages
- ❑ They shall be constructed and closed so as to prevent any loss of contents which might be caused under normal condition of transport by vibration or by changes in temperature, humidity or pressure.

Marking of UN-Approved packagings



Marking of UN-Approved packagings



4G / X 16 / S / 01 / D / BAM 4594 - WEBI

4G	Kind of packaking (Fibreboard Boxes)
X	Packing Group
16	Maximum gross mass
S	for Solid (or Inner packagings)
99 / D	Manufacturing year and State of accreditation
BAM 4594	Identification specified by the authority
(WEBI	Abbreviated designation of the manufacturer)

Labeling of packagings

BASF
The Chemical Company

Art.: 50172781 Lot:

Retinol 50 PM
Vitamin A Ph. Eur., USP Min. 1.425 Mio

10x1 kg net

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

1 UN 3082

WGK 3

(PG II)
G00001 **2**

Product label with information according to GHS and DG provisions :

- 1 UN-Number
- 2 Packing Group
- 3 technical description



4 **5**

4 Hazard label
5 Mark „environmentally hazardous substances“

Labeling of UN 2733 Dimethylethylamin

- Labels (3 und 8)
- UN-Number **UN 2733**
- Technical Name
Dimethylethylamin



1. Classification

2. Packing or Filling

3. Labeling and marking

4. Documentation

5. Dispatching and carrying

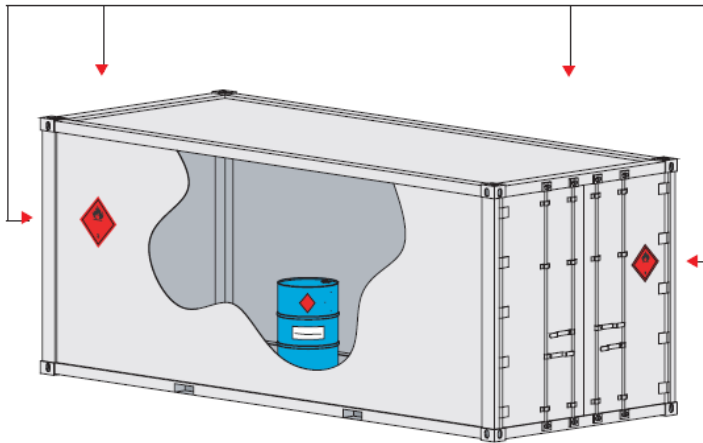
6. Receiving



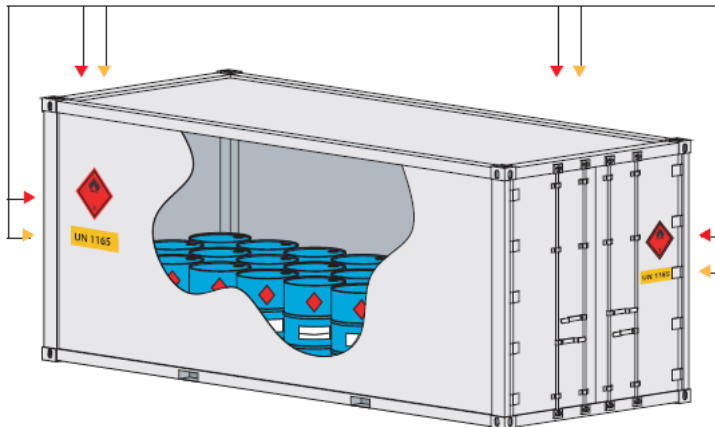
Placarding of a packed cargo trailer



Placarding of an oversea container (packed cargo)



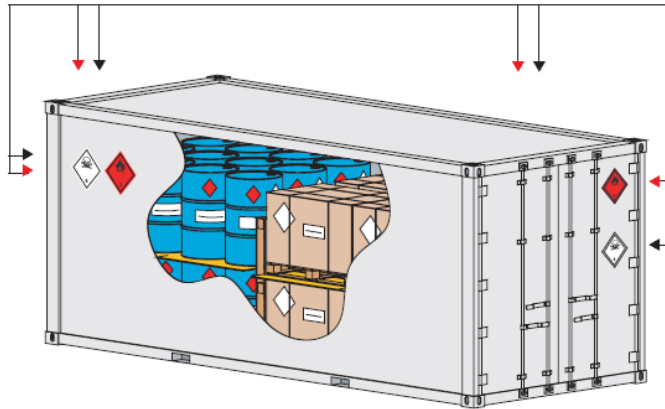
Only one DG –
<4.000 kg
4 x Hazard Labels



UN 1296

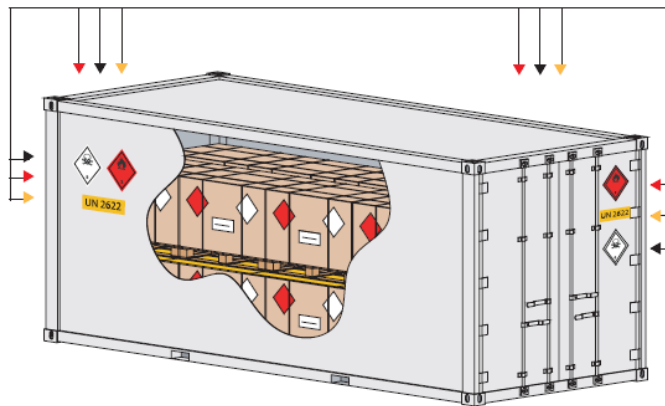
Only one DG –
> 4000 kg
4 x Hazard Labels
4 x UN-Number

Placarding of an oversea container (packed cargo)



2 DGs

8 x Hazard Labels



1 DG with 2 hazards

> 4000 kg

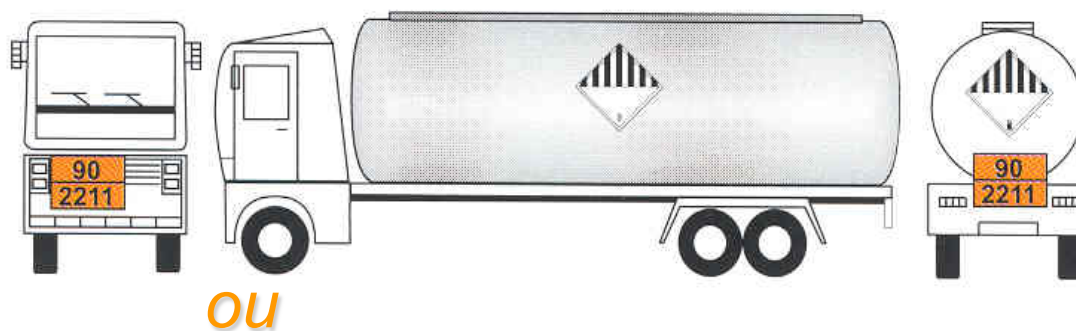
8 x Hazard Labels

4 x UN-Number

Placarding of a packed cargo railcar



Placarding of a tank-vehicle



Placarding of a tank-vehicle



Placarding of an oversea container (packed cargo)



Technical Name minimal : 6,5 cm

Placarding of an oversea container (packed cargo)

