
TLC Basic Training Dangerous Goods

TLC Logistics 27.02.24

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Foreign Trade and Logistic
Compliance (TLC)



Dangerous goods



Dangerous goods =
transport = public road, in
the air or on the sea

Hazardous substances



Hazardous substances – **storage**



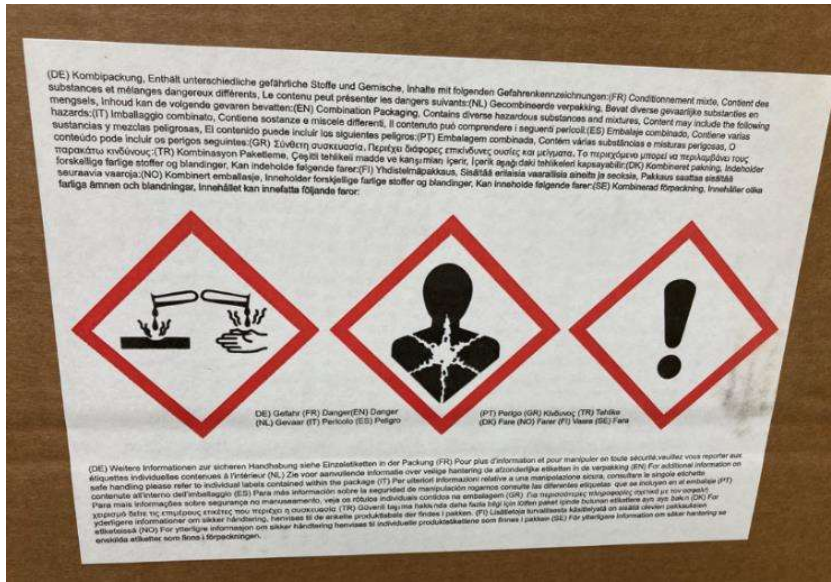
Hazardous substances

Example: Flammable substances = Flash point **above** 60°C

Not dangerous for transport – just for **storage**



ALL FOR TLC FOR ALL



Information necessary



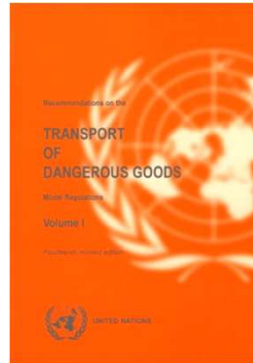
If you

- order,
- receive,
- sell
- or ship

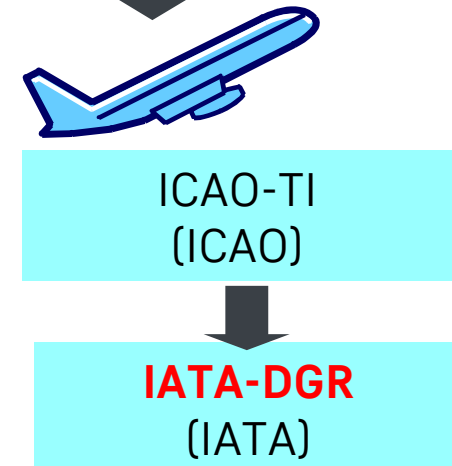
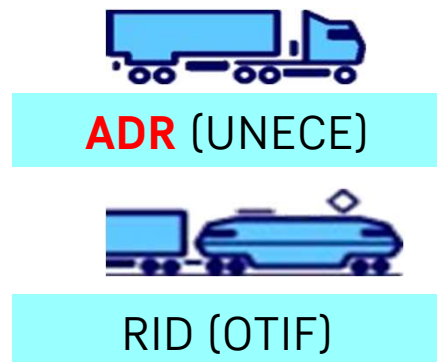
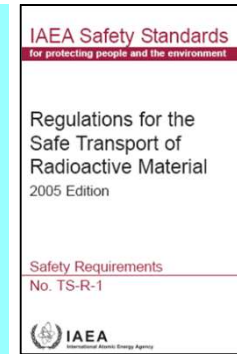
items containing dangerous goods or hazardous substances, make sure that you have a current safety data sheet (max. 2 years) in your language and the language of the consignee on hand. If necessary, request it and /or submit it.

International Regulations

United Nations
Economic and Social
Council (ECOSOC)
Recommendations on
the **Transport of
Dangerous Goods**



IAEA
Regulations
for the safe
**transport of
radioactive
material**



What is dangerous goods?



Dangerous goods are all substances, mixtures or goods that, due to their physical or chemical nature, **can be dangerous to people and the environment during transport.**

Dangerous goods substances are, for example, irritating, toxic, explosive or can cause a fire if handled incorrectly.



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Dangerous goods classes overview

main classes of dangerous

Class	1	Explosive goods and objects
Class	2	Compressed, liquid or pressurized gases
Class	3	flammable liquids
Class	4	flammable solids
Class	5	Organic Peroxides
Class	6	Poison
Class	7	Radioactive substances
Class	8	Corrosive substances
Class	9	Other dangerous goods and materials



Label class 1, 2 and 3 – with sub classes

1 Explosive goods and objects



2 gas



2.1
flammable



2.2
Non-flammable,
Non-toxic gas



2.3
Toxic gas

Klasse 3
Flammable liquid



Label class 4 and class 5 with sub classes



4.1 flammable
solids



4.2 Self-igniting
substances



4.3 Substances that develop
inflammable gases in
contact with water



5.1 Substances with an
inflammable (oxidizing)
effect



5.2 Organic peroxides

Label class 6, 7 and 8 (sub classes)



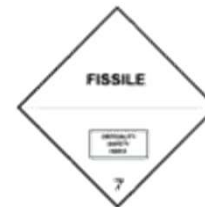
**6.1 Poisonous
substances**



**6.2 Infectious
substances**



**7A 7B 7C 7E
radioaktiv**



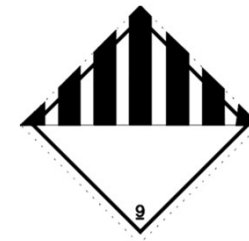
8 corrosive



Label class 9

9 Other dangerous goods and materials

Examples: Dry ice, **lithium batteries**, **environmentally hazardous goods**, airbag, magnetized material...



Dangerous goods classes at Liebherr

Dangerous goods class 2



Examples: propane gas, hydrogen, hairspray, acetylene

oxidizing
flammable (spray paint)
Toxic (insect spray)



Gases of division 2.1 flammable gas

Paint spray
Lacquer synthetic resin
Spray rust remover
Assembly spray Anti-Seize High Tech ASW
Disinfectant spray
Cleaner - Sika Remover 208 Spray
Break cleaner
Corrosion inhibitor 400 ml spray can
GREASE UNOLIT SPRAY OIL
Spray (300 ml silicone-free lubricating spray)
Glue (spray adhesive)
Fast cleaner Loctite SF 7061
Paint spray corrosion protection red-brown 400ML
Contact spray Cramolin 1151611
Mounting material
SPRAY CAN ARDROX DEVELOPER 9D1
Spray Caramba
Silicone spray



Danger properties::

- Danger of explosion
- Fire hazard
- Can be under pressure

May cause burns and/or cause frostbite

Enclosures can be exposed to heat burst

Aerosols



8303008 / VERDUENNUNG – thinner"



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Gases of division **2.2 non-flammable gas**



Stabilus gas spring
Membrane accumulator, HYDAC accumulator
Stabilus gas spring
Shock absorber SUSPA
Switching block 2-fold, retrofit kit pressure accumulator installation Hydac
BRAKE AIR ADAPTER, capsule CO 2 UMAREX
Fire extinguisher (Total G-Classic GX 6N) Total
Gas spring (Stabilus) Stabilus
LEAK DETECTION SPRAY CRC Industries Europe
Hydac membrane accumulator
Membrane accumulator Freudenberg Freudenberg
Piston accumulator (also conversion kit) Hydac
Membrane accumulator unfilled
Fire extinguisher FX N2 gas
COMPRESSED AIR SPRAY CAN 200ML WÜRTH Würth
Membrane storage HYDRO LEDUC
Damping element Hydac
Piston accumulator // 95 bar pre-filling pressure HYDAC
Hydac membrane accumulator
Fire Extinguisher Suzhou Wuyue Synthetic Chemical Fabric
Transfer case (diaphragm accumulator installed) HYDAC
Bladder storage Hydac
Bladder accumulator Roth Hydraulics GmbH
Bladder storage (manufacturer Hydac) Hydac
Bladder accumulator (MCR item), piston accumulator (LWT) Parker Hannifir



7622448 / MEMBRANSPEICHER — Diaphragm accumulator



→ Some are just regulated by air / and or sea (free on road)

10040904 / GASFEDER — Gas spring



11698902 / DRUCKLUFT — compressed air



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– piston accumulator

11840400 / / KOLBENSPEICHER

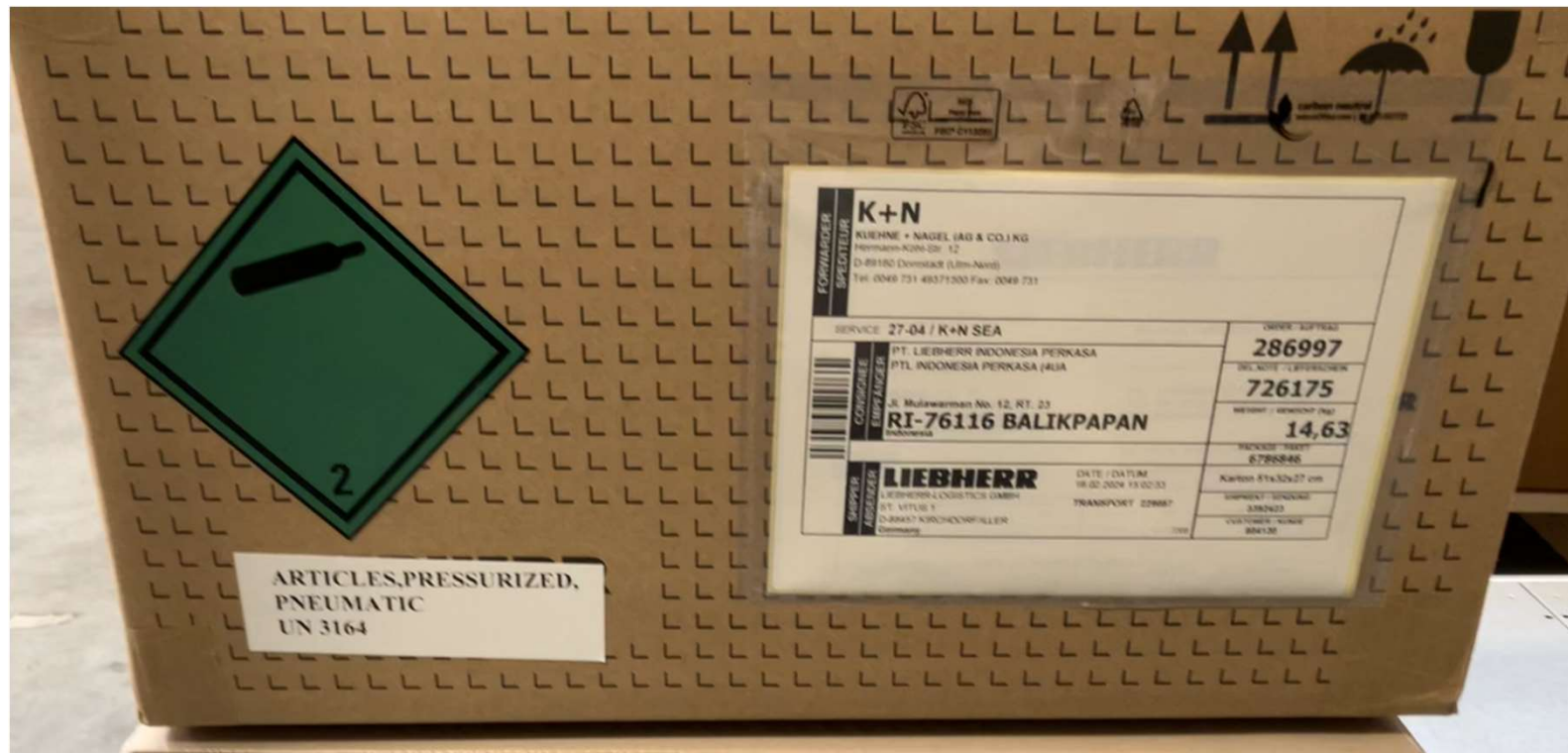


– shock absorber

7621164 / / STOSSDAEMPFER



➔ ready for pick up to Indonesia



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Flammable Liquids Class 3

Primer (Dinitrol 530), DINITROL 520 // Repair kit for glass panes
Cleaner (Dinitrol 520) // Repair kit for glass panes
Glass-Clear-Classic windshield cleaner
Thinner / PUR Thinner TL009
Thinner THINNER 21-06 (AMERCOAT 65)
Primer (Amercoat 4171 Resin RAL 7035)
Hardener (Amercoat 4171 Cure)
Top coat 1K KH Liebherr Yellow / 8302013: 1L, 8302018: 5L
Glue (can 730 ml)
acetone
Diesel engine
Adhesive primer - SIKA Primer-206 G+P
Hardener 4 L varnish colorless
resin
Clear as glass
Windshield washer fluid 200 L
Window cleaning glass cleaner SMA 19
Corrosion protection Dinitrol 4010 20 liters
Glue Drive window adhesive set - SIKA TACK 8159
Contact adhesive Jowat 445.00
Cleaner Industrial Clean
Primer FEIDOLUX PRIMER KG92
Disinfectant MYXAL SEPT 80
Activator (Sika Tack Go4it)
Top coat FEIDOLUX KD19



– Paint



– hardener



Engine, internal combustion, flammable liquid powered UN 3166



Only classified for Air- and Seafreight

➔ Not dangerous on road transports


DOT's Hazmat Information Center = **exemption** which could be used to move the engine. The exemption is covered under Chapter 173.220(b)(4) & 173.220(h)(1) of the CFR49 (DOT Hazmat regulation).




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Engine, internal combustion, flammable liquid powered UN 3528



SHIPPER'S DECLARATION FOR DANGEROUS GOODS 

Shipper Liebherr-Logistics GmbH St. Vitus 1 88457 Kirchdorf an der Iller GERMANY		Air Waybill No. Page 1 of 1 Pages Shipper's Reference Number (optional)				
Consignee RECO EQUIPMENT INC. Jacob Deichler 20620 ROUTE 19 NORTH US 16066 PA CRANBERRY TOWNSHIP, USA						
Two completed and signed copies of this Declaration must be handed to the operator.		WARNING Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.				
TRANSPORT DETAILS						
This shipment is within the limitations prescribed for: (delete non-applicable) PASSENGER AND CARGO AIRCRAFT <input checked="" type="checkbox"/> CARGO AIRCRAFT ONLY <input checked="" type="checkbox"/>		Airport of Departure (optional):				
Airport of Destination (optional):		Shipment type: (delete non-applicable) NON-RADIOACTIVE <input checked="" type="checkbox"/> RADIOACTIVE <input type="checkbox"/>				
NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification				Quantity and Type of Packing	Packing Inst.	Authorization
UN or ID No.	Proper Shipping Name	Class or Division (subsidiary hazard)	Packing Group			
UN3528	Engine, internal combustion, flammable liquid powered	3		1 engine on metal skid x 886 kg Overpack used	378	
Additional Handling Information Emergency CONTACT(24-Hour-Number)GBK/InfotracID102531:(USA domestic)18005355053 or international(001)3523233500						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.				Name of Signatory Erik Siebenhaar  11.2023		

Order No.: 11529 0119

Example airfreight

- Attention new class 3 and new UN 3528 (former class 9 and UN 3166)



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primer

12691865 / / GRUNDIERUNG



paint

11088499 / / DECKLACK



cleaner



Repair set

12204860 / / REPARATURSET



10012527 / / AKTIVATOR



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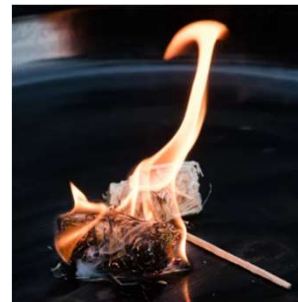
Flammable Solids Class 4.1



Substances of Class 4.1 **are easily flammable solid substances** and articles that can be ignited by sparks or can cause a fire through friction. Furthermore, Class 4.1 includes self-reactive substances that, at exceptionally high temperatures or upon contact with impurities, tend to undergo highly exothermic decompositions."

SEALANT - TEROSON RB 4100 BK
Repair kit with cleaning cloth

UN 1327 Matches

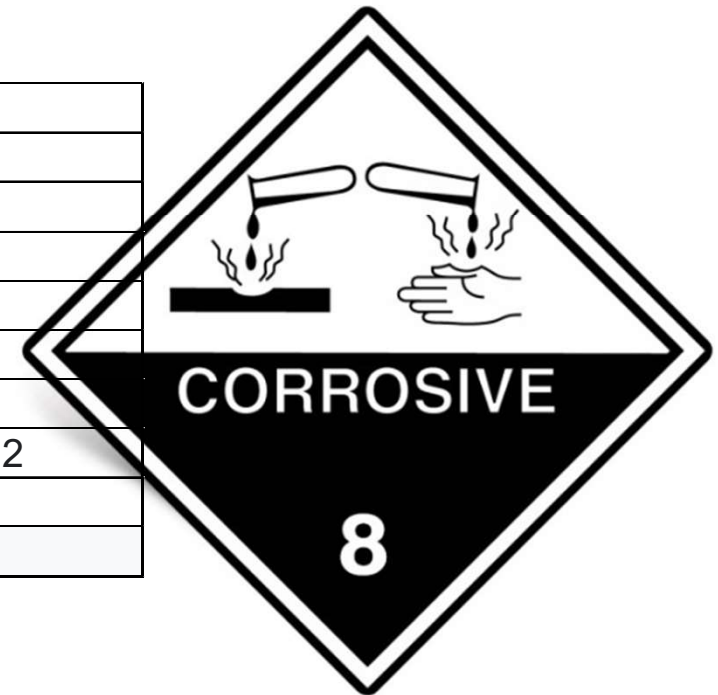


UN 1327 Hay or straw



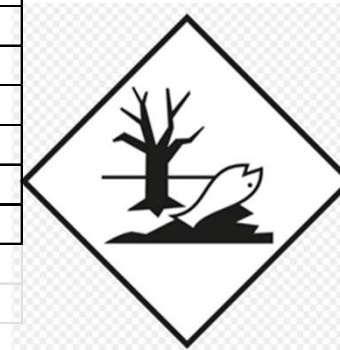
Corrosive substances class 8

Yes	additive
Yes, air + sea	battery banner only
Yes	battery acid
Yes	diesel additive 1 liter
Yes, just air + sea	battery, filled, charged
Yes, only air	high pressure lamp neutral white 400 V
Yes, air + sea	battery only
Yes	battery 12V 300W type SBH 300-12 / SBH 270-12
Yes	Battery 12V 100Ah 830A - Clarios
Yes	Adhesive Loctite EA 9492



„Other dangerous goods and materials” Class 9

AVIA GEAR VSG 220 / Gear oil AVILUB VSG 220
Gear oil AVIA GEAR VSG 100
Battery (Lithium-ion-iron phosphate battery)
Lubricating paste 10 g, Molub-Alloy Paste White
Yes, air and sea BATTERY 3.6V 0.450Ah PRINT CONNECTION VARTA
BATTERY AC500-CPUs
Battery module 3.6V T200 PR63
Yes, air and sea Assembly paste Weicon Anti-Seize
High-performance grease paste Gleitmo 805
Lithium battery
Yes, air and sea Battery Replacement battery
Lubricating paste 100g Molub-Alloy Paste TA
Sealant 300ml cartridge Copper Silicone, Loctite SI 5990
Yes, air only Display (contains battery)
Telematics unit with BATTERY SPF006
Battery (Lithium) for control unit
Display (contains Lithium Metal Battery)





10182189 / /AKKU



613202401 / /BATTERIE



Examples of dangerous goods at LLG – do you know the class?



Lithium batteries / rechargeable batteries (cell phones, telephones, laptops, loggers/GPS, remote control or crane control, engine control devices, etc.)



Cleaning agents/disinfectants, window cleaner, antifreeze



Spray, Aerosols



gas springs (mostly dangerous by air), fire extinguisher



Diesel engines (air freight/sea freight)



Additives, wet batteries





UN – Number (MSDS section 14)

UN numbers or **UN IDs** are four-digit numbers that **identify** dangerous goods

UN numbers range from UN0001 to about UN3550 and are assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods

They are published as part of their *Recommendations in the “Organe book”*

UN 1950 = Aerosols



UN 1263 = paint



Who knows the answer?



- How many classes of dangerous goods are there?
- What dangerous goods class does an engine have?
- Is an engine classified as dangerous goods on all modes of transport?
- What danger does a remote control, e.g. a crane control, pose?
- What means UN-Nr. 1950?

Packing



Approved packing (UN permit)

→ Single Packing



Example: UN 1A1 = steel drum,

→ composite packaging



Recognizing dangerous goods







– Class 3 is??

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Packing groupe = PG



PG				carton	
I	high danger	high toxic	high corrosive	X	
II	dangerous	toxic	corrosive	Y or X	
III	low danger	less toxic	less corrosive	Z, Y or X	

The most important thing when transporting dangerous goods is:

Load securing !!!!



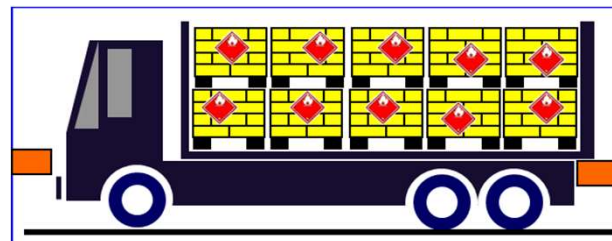
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Simplifications for smaller quantities



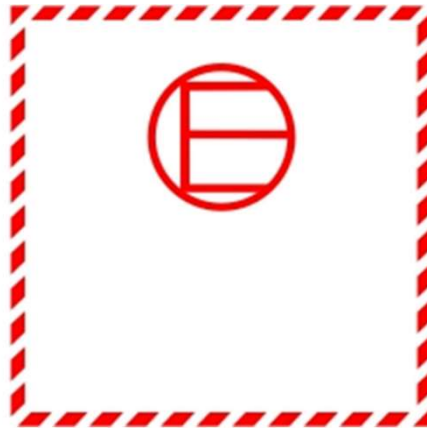
We have four different types of dangerous goods shipments:

1. Excepted (small) quantities "E" Chapter 3.5 ADR ✓
2. Limited Quantities LQ (many facilitations) Chapter 3.4 ADR ✓
3. Exemption transport according to „1000 point rule“ Chapter 1.1.3.6. ADR ✓
4. Dangerous goods transports (orange sign)



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1.) „E“ Excepted Quantities ADR 3.5



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1. Excepted Quantities ADR 3.5

E1

- z.B. 30ml Paint = Paint pens, 33 pieces in one outer packaging.

Code	Höchste Nettomenge je Verpackung (ml)	Höchste Nettomenge je Außenverpackung (ml)
E 0	in freigestellten Mengen nicht zugelassen	
E 1	30	1000
E 2	30	500
E 3	30	300
E 4	1	500
E 5	1	300



Labeling Excepted Quantities

- Cushioning material must be used
- Free-fall tests from a height of 1.8 meters.
- Test reports for the packaging / approval and test certificates.

At least 10x10 cm

Permanent and legible

*Primary hazard = 3

** Name of sender or recipient if not indicated elsewhere on the packaging



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2. LQ Limited Quantity ADR 3.4



Example LLG:
LLG mainly uses this
simplification for
transport by road



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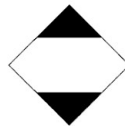


2.) Limited Quantity – LQ

Exemption in connection with the carriage of limited quantities

ADR only applies to a very limited extent (only chapter 3.4.)

- ✓ No “hazardous goods driving license” required for drivers
- ✓ No hazardous goods equipment required
- ✓ No written instructions necessary (accident information sheet)
- ✓ In principle, no transport document is necessary (just information) Reference to LQ plus gross quantity
- ✓ No dangerous goods officer necessary
- ✓ No UN packaging necessary
- ✓ max 30kg gross
- ✓ **Only for composite packaging (inner/outer packing)**
- ✓ Labeling only necessary with LQ label



2.) Limited Quantity – LQ – Important „must“



- Packaging quality requirements
- Training (yearly) of all employees involved in transport (including packers)

2.) Limited Quantity – LQ

- ✓ max 30kg gross
- ✓ Only for composite packaging (inner/outer packing)



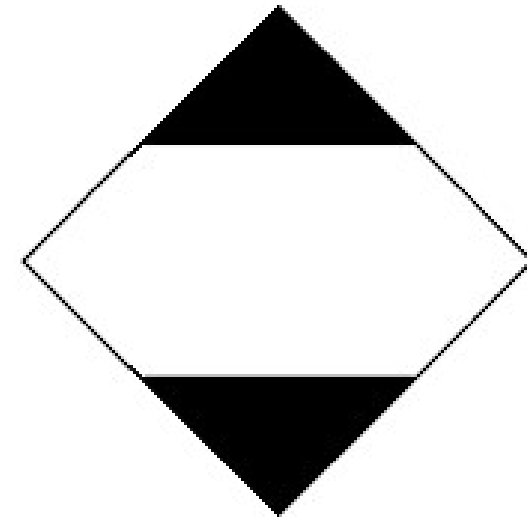


Paint as Limited Quantity LQ

UN 1263 PG III Paint

Max 5 L per inner packing (paint can)

Max 30kg Gross =max. 5 x 5L paint can due to weight of outer packing



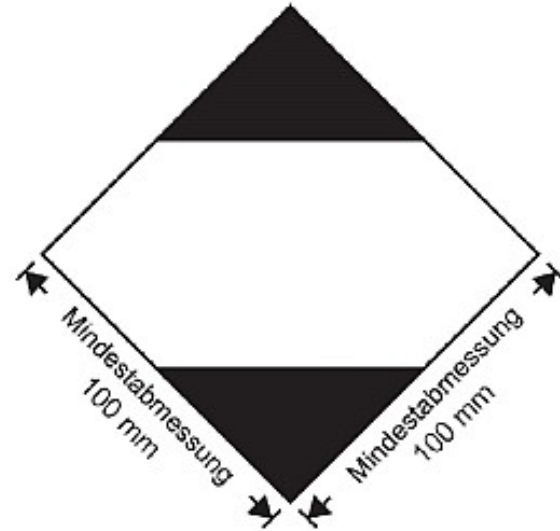
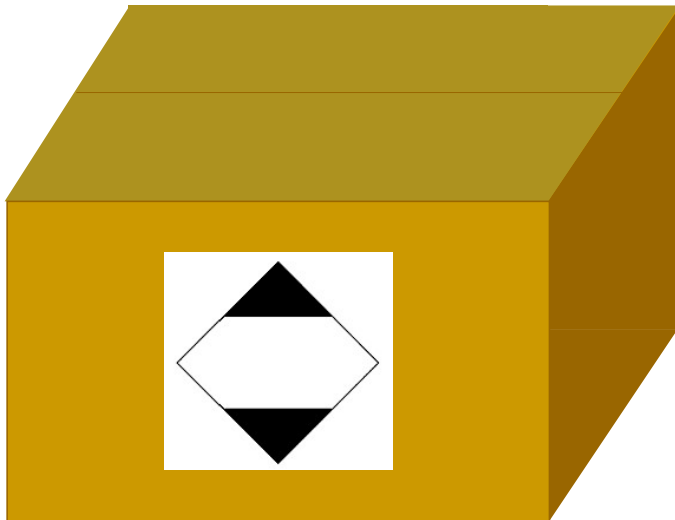
Dims Label = 100x100mm

No “UN packaging” is necessary, but must be stable and be suitable / drop test 120cm

Maximum **30 kg gross**

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LQ Limited Quantity Label Chapter 3.4.7.1 ADR



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Questions LQ



–Is this about LQ?

- Single packing allowed for LQ?
- What maximum gross weight is permitted?

Batteries

Lithium Batteries



Lithium Batteries are dangerous goods (Class 9)

Very common products are subject to regulations:

All items that contain lithium batteries (e. g. mobile phones, mobile computers and tablet computers, electrical tools, battery powered vehicles, toys etc.)

all items that are packed with lithium batteries

Laptop explodes and burns down office building (youtube.com)

<https://www.youtube.com/watch?v=2aOICtMyKTK>

<https://www.youtube.com/watch?v=8nz5ijXcckI>



Risks for Lithium Batteries



Minor defects can lead to fire!

Lithium batteries contain high rates of energy and contribute oxygen to their own fire.

Once on fire, a lithium cell will not be extinguished.



Dangerous goods regulations apply



Lithium batteries are goods of class 9.

Based on preconditions, simplifications might be legal but require compliance with a number of additional requirements, among them usually

Specific markings and additional documents are required.

There is no lithium battery that is not covered by the dangerous goods regulations



Example Electric wheel loader L 507 E



fast charging




Material Safety Data Sheet

MSDS



Material Safety Data Sheet (MSDS) – Sodium Hydroxide

Section 14 = Transport Information

14 . Transport information						
Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1823	SODIUM HYDROXIDE, SOLID	8	II		<u>Reportable quantity</u> 1000 lbs. (454 kg)

PG* : Packing group

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.10

Revision Date 21.03.2023

Print Date 11.04.2023

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Acetone EMPLURA®

SECTION 14: Transport information**14.1 UN number**

ADR/RID: 1090

IMDG: 1090

IATA: 1090

14.2 UN proper shipping name

ADR/RID: ACETONE

IMDG: ACETONE

IATA: Acetone

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user



Tunnel restriction code : (D/E)

Further information : No data available



Trade name: **Liebherr WR-Lube SC**



SECTION 14: Transport information	
14.1 UN-Number ADR, IMDG, IATA	UN1268
14.2 UN proper shipping name ADR IMDG, IATA	1268 PETROLEUM DISTILLATES, N.O.S. PETROLEUM DISTILLATES, N.O.S.
14.3 Transport hazard class(es) ADR  Class Label	 3 (F1) Flammable liquids. 3
<hr/>	
IMDG, IATA  Class Label	 3 Flammable liquids. 3

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TSCA = Toxic Substance Control Act (USA)



15 . Regulatory information

United States

HCS Classification : Highly toxic material
Corrosive material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: This material is listed or exempted.

TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Sodium Hydroxide

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Sodium Hydroxide: Immediate (acute) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: Sodium Hydroxide

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

**DEA List I Chemicals
(Precursor Chemicals)** : Not listed

**DEA List II Chemicals
(Essential Chemicals)** : Not listed

Massachusetts Substances : This material is listed.

**New Jersey Hazardous
Substances** : This material is listed.

<https://lubricants.liebherr.com/Pages/default.aspx?language=de-DE>



Deutsch ▼

Liebherr Lubricants

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Dashboard



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Again, Questions

- In which section of the safety data sheet is the information about the transport of dangerous goods located?
- Where can I find the safety data sheets for Liebherr lubricants?
- If I have questions regarding dangerous goods, who should I contact?
- ✓ **tlc.llg@liebherr.com**

Working Groupe

Dangerous goods / Battery

Aktuelle Themen – Gründung weiterer Arbeitsgruppen (CK)

We need you



**We are still looking for specialists for the
dangerous goods/batteries working group**



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TLC – Home (sharepoint.com)



SharePoint

Nur Mitglieder

LIEBHERR TLC

Start

TLC kurz erklärt

TLC in short

FAQ DE

FAQ EN

Contact

Organization TLC

Handlungsempfehlung...

Informationsmitteilung...

Recommendation for act...

Information notice

Calendar

Archive

Members only

Protocols

+ Neu

Seitendetails

Analysen

Veröffentlicht 9.2.2024

Teilen

Bearbeiten

Welcome to the Foreign Trade and Logistic Compliance (TLC) SharePoint

Contact: tlc.llg@liebherr.com

Live-Ticker / Aktuelles

+ Hinzufügen

Welcome to the TLC Sharepoint

Gittel Christoph (LLG) 27. November 2023

3 Ansichten

Ansprechpartner zentrale Stelle / Contact Person in central area

KC

Kloos Claudia (LLG)
i.V.

Ansprechpartner Funktionsbereich Import & Exportkontrolle ,
Contact Person functional area Import and Export Control

Gittel Christoph (LLG)

Ansprechpartner Funktionsbereich Zoll & WUP / Contact

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Q&A ?



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Thank you for your attention



ALL FOR **TLC** FOR ALL

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