


SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
PEROXAN ME-30 LX
- **Trade name:**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture**
Reaction initiator
For industrial use
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
PERGAN GmbH
Hilfsstoffe für industrielle Prozesse
Schlavenhorst 71
D-46395 Bocholt
Tel: +49 2871 9902-0
Fax: +49 2871 9902-50
- **Further information obtainable from:**
Environment protection / Security of labour
Competent person:
* Sales Manager Germany: Mr. Ansgar Pappenheim, e-mail: a.pappenheim@pergan.com
* Export Sales Manager: Mr. Dr. Thomas Philipps, e-mail: dr.philipps@pergan.com
* Environment protection / : Mr. Christoph Wilting, e-mail: c.wilting@pergan.com
Security of labour
- **1.4 Emergency telephone number:**
- Tel: +49 2871 9902-0

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

Org. Perox. E	H242	Heating may cause a fire.
Acute Tox. 4	H302	Harmful if swallowed.
Skin Corr. 1B	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02 GHS05 GHS07
- **Signal word**
Danger
- **Hazard-determining components of labelling:**
Reaction mass of butane-2,2-diyl dihydroperoxide and di-sec-butylhexaoxidane hydrogen peroxide solution
- **Hazard statements**
H242 Heating may cause a fire.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy metal compounds and amines).
P234	Keep only in original container.
P243	Take precautionary measures against static discharge.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P410	Protect from sunlight.
P411	Store at temperatures not exceeding +30°C.
P420	Do not mix with peroxide-accelerators or reducing agents.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Trade name: PEROXAN ME-30 LX

(Contd. of page 1)

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

* SECTION 3: Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures


· **Dangerous components:**

CAS: 6846-50-0 EINECS: 229-934-9 Reg-No.:01-2119451093-47	1-isopropyl-2,2-dimethyltrimethylene diisobutrylate Aquatic Chronic 3, H412	40-50%
CAS: 1338-23-4 EC number: 700-954-4 Reg-No.:01-2119514691-43	Reaction mass of butane-2,2-diyl dihydroperoxide and di-sec-butylhexaoxidane Org. Perox. D, H242; Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H332	25-30%
CAS: 123-42-2 EINECS: 204-626-7 Index number: 603-016-00-1 Reg-No.:01-2119473975-21	4-hydroxy-4-methylpentan-2-one Flam. Liq. 3, H226; Eye Irrit. 2, H319; STOT SE 3, H335	10-20%
CAS: 78-93-3 EINECS: 201-159-0 Index number: 606-002-00-3 Reg-No.:01-2119457290-43	butanone Flam. Liq. 2, H225; Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H336	5-10%
CAS: 7722-84-1 EINECS: 231-765-0 Index number: 008-003-00-9 Reg-No.:01-2119485845-22	hydrogen peroxide solution Ox. Liq. 1, H271; Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3, H335; Aquatic Chronic 3, H412	1.0-2.5%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

- **General information:** Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
-  Take care of personal protection for the first aider.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation. Take affected persons into fresh air and keep quiet.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly. Immediately remove contaminated clothing.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Call for a doctor immediately. Drink plenty of water and provide fresh air. Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** Under certain fire conditions, traces of other toxic gases cannot be excluded. Hydrocarbons, carbon dioxide and -monoxid.
- **5.3 Advice for firefighters**
- **Protective equipment:** Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered receptacles with water spray.

(Contd. on page 3)

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 2)

Self-protection first!

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Keep away from ignition sources.
In case of further temperature should be cooled with waterspray from a safe distance.
Wear breathing apparatus with filter A during decomposition of materials.
Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:**



Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Large quantities should be diluted with suitable desensitisation agent to a concentration below 10 % before disposal.
Soak up with absorbant material (e. g. Vermiculit) and dispose of in accordance with government regulations.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
In case of large spillage the environmental authority should be informed.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Keep away from heat and direct sunlight.
Open and handle receptacle with care.
Prevent formation of aerosols.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Do not refill residue into storage receptacles.
Restrict the quantity stored at the work place.
Before break and at the end of work hands should be thoroughly washed.
Only use tools made of suitable materials (e. g. polyethylene or stainless steel).
Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
Oxidizing because of releasing oxygene.
While using do not eat, drink or smoke.
Do not generate flames or sparks.
Keep product and emptied container away from heat and sources of ignition.
Avoid shock and friction.
Take precautionary measures against static discharges.



Do not smoke.

· **Information about fire - and explosion protection:**

Protect from heat.
Protect against electrostatic charges.
Prevent impact and friction.
Use explosion-proof apparatus / fittings and spark-proof tools.
Fumes can combine with air to form an explosive mixture.



Wear shoes with conductive soles.

Formation of flammable or explosive gas/air-mixtures is possible.



Avoid open flames, sparks, direct sunlight and other sources of ignition.

Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

Pay attention to the special requirements of your local authorities for storing dangerous goods.

· **Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.
Prevent any seepage into the ground.
Use only receptacles specifically permitted for this substance/product.

· **Information about storage in one common storage facility:**

Do not store or park organic peroxide together with heavy metal compounds and amines.
Store away from foodstuffs, drinks and feeding stuffs.

(Contd. on page 4)

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 3)

- **Further information about storage conditions:** Keep container tightly sealed.
Protect from heat and direct sunlight.
Protect from contamination.
Store under lock and key and out of the reach of children.
- **Recommended storage temperature (To maintain quality):** 0 +30 °C
- **Storage class:** 5.2
- **7.3 Specific end use(s)** No further relevant information available.

* **SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

· Ingredients with limit values that require monitoring at the workplace:		
123-42-2 4-hydroxy-4-methylpentan-2-one		
WEL (Great Britain)	Short-term value: 362 mg/m ³ , 75 ppm Long-term value: 241 mg/m ³ , 50 ppm	
78-93-3 butanone		
WEL (Great Britain)	Short-term value: 899 mg/m ³ , 300 ppm Long-term value: 600 mg/m ³ , 200 ppm Sk, BMGV	
IOELV (EU)	Short-term value: 900 mg/m ³ , 300 ppm Long-term value: 600 mg/m ³ , 200 ppm	
7722-84-1 hydrogen peroxide solution		
WEL (Great Britain)	Short-term value: 2.8 mg/m ³ , 2 ppm Long-term value: 1.4 mg/m ³ , 1 ppm	
· DNELs		
6846-50-0 1-isopropyl-2,2-dimethyltrimethylene diisobutyrate		
Dermal	DNEL Longterm System	31.2 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	110 mg/m ³ (Worker)
1338-23-4 Reaction mass of butane-2,2-diyl dihydroperoxide and di-sec-butylhexaoxidane		
Dermal	DNEL Longterm System	3 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	5.288 mg/m ³ (Worker)
123-42-2 4-hydroxy-4-methylpentan-2-one		
Dermal	DNEL Longterm System	840 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	59.2 mg/m ³ (Worker)
78-93-3 butanone		
Dermal	DNEL Longterm System	1,161 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	600 mg/m ³ (Worker)
7722-84-1 hydrogen peroxide solution		
Inhalative	DNEL Longterm Local	1.4 mg/m ³ (Worker)
· PNECs		
6846-50-0 1-isopropyl-2,2-dimethyltrimethylene diisobutyrate		
PNEC Marinewater sed	0.529 mg/kg sed dw (-)	
PNEC Freshwater	0.014 mg/l (AF 50)	
PNEC Freshwater sed	5.29 mg/kg sed dw	
PNEC Soil	1.05 mg/kg soil dw	
PNEC STP	3 mg/l (AF 10)	
PNEC Marinewater	0.001 mg/l (AF 500)	
1338-23-4 Reaction mass of butane-2,2-diyl dihydroperoxide and di-sec-butylhexaoxidane		
PNEC Marinewater sed	0.009 mg/kg sed dw	
PNEC Freshwater	0.006 mg/l (AF 1.000)	
PNEC Freshwater sed	0.088 mg/kg sed dw	
PNEC Soil	0.014 mg/kg soil dw	
PNEC STP	1.2 mg/l (AF 10)	
PNEC Marinewater	0.001 mg/l (AF 10.000)	

(Contd. on page 5)
GB

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 4)

123-42-2 4-hydroxy-4-methylpentan-2-one	
PNEC Marinewater sed	0.91 mg/kg sed dw
PNEC Freshwater	2 mg/l (AF 50)
PNEC Freshwater sed	9.06 mg/kg sed dw
PNEC Soil	0.63 mg/kg soil dw
PNEC STP	10 mg/l (AF 100)
PNEC Marinewater	0.2 mg/l (AF 500)
78-93-3 butanone	
PNEC Marinewater sed	284.7 mg/kg sed dw
PNEC Freshwater	55.8 mg/l
PNEC Freshwater sed	284.74 mg/kg sed dw
PNEC Soil	22.5 mg/kg soil dw
PNEC STP	709 mg/l
PNEC Marinewater	55.8 mg/l
7722-84-1 hydrogen peroxide solution	
PNEC Marinewater sed	0.047 mg/kg sed dw
PNEC Freshwater	0.013 mg/l (AF 50)
PNEC Freshwater sed	0.047 mg/kg sed dw
PNEC Soil	0.002 mg/kg soil dw
PNEC STP	mg/l (AF 100)
PNEC Marinewater	0.013 mg/l (AF 50)
Ingredients with biological limit values:	
78-93-3 butanone	
BMGV (Great Britain)	70 µmol/L Medium: urine Sampling time: post shift Parameter: butan-2-one
Additional Occupational Exposure Limit Values for possible hazards during processing:	
1338-23-4 2-Butanone, peroxide	
WEL (Great Britain)	Short-term value: 1.5 mg/m ³ , 0.2 ppm

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Do not eat, drink, smoke or sniff while working.

Use skin protection cream for skin protection.

Be sure to clean skin thoroughly after work and before breaks.

· **Respiratory protection:**

Not necessary if room is well-ventilated.

Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.



Filter A2

· **Protection of hands:**

Only use chemical-protective gloves with CE-labelling of category III.



Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Protective gloves

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

Neoprene

· **Penetration time of glove material**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

(Contd. on page 6)

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 5)

· Body protection:



Protective work clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· General Information	
· Appearance:	
· Form:	Fluid
· Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
· Melting point/freezing point:	Not applicable.
· Initial boiling point and boiling range:	Not applicable.
· Flash point:	72 °C
· Flammability (solid, gas):	Not applicable.
· Decomposition temperature:	+60 °C (SADT)
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapour pressure:	Not determined.
· Density at 20 °C:	0,98 - 1,01 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
· water:	Undetermined.
· Partition coefficient: n-octanol/water: not determined	
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· 9.2 Other information	No further relevant information available.
· Active oxygen	7.5 - 7.9 %

SECTION 10: Stability and reactivity

· 10.1 Reactivity	No further relevant information available.
· 10.2 Chemical stability	
· Thermal decomposition / conditions to be avoided:	SADT (Self Accelerating Decomposition Temperature) is the lowest temperature at which self accelerating decomposition may occur with substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be cause decomposition at and above the temperature. Contact with incompatible substances can cause decomposition at or below the SADT. No decomposition if used and stored according to specifications. To avoid thermal decomposition do not overheat.
· 10.3 Possibility of hazardous reactions	Self-accelerating decomposition at SADT.
· 10.4 Conditions to avoid	No further relevant information available.
· 10.5 Incompatible materials:	Rapid decomposition by dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
· 10.6 Hazardous decomposition products:	Hydrocarbons, carbondioxide and -monoxid. No hazardous decomposition products if used and stored according to specifications.

(Contd. on page 7)

— GB —

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 6)

- **Additional information:** Emergency procedures will vary depending on conditions. The customer should have an emergency response plane in place.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
· **Acute toxicity** Harmful if swallowed.

· **LD/LC50 values relevant for classification:**

6846-50-0 1-isopropyl-2,2-dimethyltrimethylene diisobutyrate

Oral	LD50	3,200 mg/kg (rattus)
Dermal	LD50	18,900 mg/kg (caviinae)
Inhalative	LC50 / 6h	5.3 mg/l (rattus)

123-42-2 4-hydroxy-4-methylpentan-2-one

Oral	LD50	2,520 mg/kg (rattus)
Dermal	LD50	13,630 mg/kg (cuniculosus)

78-93-3 butanone

Oral	LD50	3,300 mg/kg (rattus)
Dermal	LD50	6,400-8,000 mg/kg (cuniculosus)
Inhalative	LC50 / 4h	20 mg/l (rattus)

- **Primary irritant effect:**
· **Skin corrosion/irritation** Causes severe skin burns and eye damage.
· **Serious eye damage/irritation** Causes serious eye damage.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

6846-50-0 1-isopropyl-2,2-dimethyltrimethylene diisobutyrate

LC50 / 96h	1.55 mg/l (pimephales promelas)
EC50 / 48h	1.46 mg/l (daphnia)

1338-23-4 Reaction mass of butane-2,2-diyl dihydroperoxide and di-sec-butylhexaoxidane

LC50 / 96h	44.2 mg/l (-)
------------	---------------

78-93-3 butanone

LC50 / 96h	3,220 mg/l (pimephales promelas)
EC50 / 48h	5,091 mg/l (daphnia magna)

- **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.

· **Additional ecological information:**

- **General notes:** Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

· **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 7)

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation



After diluting with a suitable desensitisation agent to 10 %, the solution must be supplied to a special treatment (e. g. thermal utilization) under observance of all official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· Waste disposal key:

Please contact your hazardous waste disposers to assign the right EWC-(European waste catalog)-number.

· Uncleaned packaging:

· Recommendation:

This material and its container must be disposed of as hazardous waste.

SECTION 14: Transport information

· 14.1 UN-Number

· ADR, IMDG, IATA

UN3107

· 14.2 UN proper shipping name

· ADR

3107 ORGANIC PEROXIDE TYPE E, LIQUID (METHYL ETHYL KETONE PEROXIDE(S))

· IMDG, IATA

ORGANIC PEROXIDE TYPE E, LIQUID (METHYL ETHYL KETONE PEROXIDE(S))

· 14.3 Transport hazard class(es)

· ADR



· Class

5.2 (P1) Organic peroxides.

· Label

5.2

· IMDG, IATA



· Class

5.2 Organic peroxides.

· Label

5.2

· 14.4 Packing group

· ADR, IMDG, IATA

Void

· 14.5 Environmental hazards:

· Marine pollutant:

No

· 14.6 Special precautions for user

· Danger code (Kemler):

Warning: Organic peroxides.

· Stowage Category

-

· Stowage Code

D

· Segregation Code

SW1 Protected from sources of heat.

SG35 Stow "separated from" acids.

SG36 Stow "separated from" alkalis.

SG72 See 7.2.6.3.2.

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC

Code

Not applicable.

· Transport/Additional information:

· ADR

· Limited quantities (LQ)

125 ml

· Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

· Transport category

2

· Tunnel restriction code

D

· RID / GGVSEB:

like ADR

· IMDG

· Limited quantities (LQ)

125 ml

(Contd. on page 9)

GB

Trade name: **PEROXAN ME-30 LX**

(Contd. of page 8)

· Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· REGULATION (EC) No

1907/2006 ANNEX XVII

Conditions of restriction: 3

· National regulations:

· Other regulations, limitations and prohibitive regulations

· Please note:

Take care of the respective local regulations.

· 15.2 Chemical safety

assessment:

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H242 Heating may cause a fire.

H271 May cause fire or explosion; strong oxidiser.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

· Department issuing SDS:

Environment protection / Security of labour

· Contact:

Tel: +49 2871 9902-0

E-mail: mail@pergan.com

· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the

International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage

of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Ox. Liq. 1: Oxidizing liquids – Category 1

Org. Perox. D: Organic peroxides – Type C/D

Org. Perox. E: Organic peroxides – Type E/F

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· * Data compared to the previous version altered.