acc. to Regulation (EC) No. 1907/2006 (REACH)

#### Chlorobenzene D5 99 Atom%D

article number: **9905**Version: **3.0 en**date of compilation: 2016-08-18
Revision: 2024-03-02

Replaces version of: 2022-01-18

Version: (2)



#### 1.1 Product identifier

Identification of the substance Chlorobenzene D5 99 Atom%D

Article number 9905

EC number 221-482-0 CAS number 3114-55-4

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for private purposes (household).

Food, drink and animal feedingstuffs.

#### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

**Telephone:**+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de **Website:** www.carlroth.de

Competent person responsible for the safety data 
Department Health, Safety and Environment

sheet:

e-mail (competent person): sicherheit@carlroth.de

#### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

#### **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

#### Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
2.6	Flammable liquid	3	Flam. Liq. 3	H226
3.1I	Acute toxicity (inhal.)	4	Acute Tox. 4	H332
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
4.1A	Hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400

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Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
4.1C	Hazardous to the aquatic environment - chronic hazard	1	Aquatic Chronic 1	H410

For full text of abbreviations: see SECTION 16

#### The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

#### 2.2 Label elements

#### Labelling

Signal word Warning

#### **Pictograms**

GHS02, GHS07, GHS09







#### **Hazard statements**

H226	Flammable liquid and vapour
H315	Causes skin irritation
H332	Harmful if inhaled
H410	Very toxic to aquatic life with long lasting effect

#### **Precautionary statements**

#### **Precautionary statements - prevention**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition
	sources. No smoking
P240	Ground and bond container and receiving equipment
P273	Avoid release to the environment
P280	Wear protective gloves/eye protection

#### **Precautionary statements - response**

P303+P361+P353	IF ON SKIN (or hair): Tak	e off immediately all contaminated	l clothing. Rinse skin

with water [or shower]

P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell

#### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

#### **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

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# **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

Name of substance Chlorobenzene D5

Molecular formula C<sub>6</sub>D<sub>5</sub>Cl

Molar mass 117,6 g/<sub>mol</sub>
CAS No 3114-55-4
EC No 221-482-0

	Substance,	Specific	Conc.	Limits.	. M-factors	ATE
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Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	12 <sup>mg</sup> / <sub>l</sub> /4h	inhalation: vapour

# **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures



#### **General notes**

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

#### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

#### **Following ingestion**

Rinse mouth. Call a doctor if you feel unwell.

#### 4.2 Most important symptoms and effects, both acute and delayed

Irritation

#### 4.3 Indication of any immediate medical attention and special treatment needed

none

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# **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media



### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water spray, dry extinguishing powder, BC-powder, carbon dioxide (CO<sub>2</sub>)

#### Unsuitable extinguishing media

water jet

#### 5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air

#### **Hazardous combustion products**

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen halides (HX)

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

### **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures



#### For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

#### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

#### 6.3 Methods and material for containment and cleaning up

#### Advice on how to contain a spill

Covering of drains.

#### Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

#### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

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#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Provision of sufficient ventilation.

#### Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

#### Measures to protect the environment

Avoid release to the environment.

#### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

#### **Incompatible substances or mixtures**

Observe hints for combined storage.

#### Consideration of other advice:

Ground/bond container and receiving equipment.

#### **Ventilation requirements**

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

#### Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

#### 7.3 Specific end use(s)

No information available.

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

#### 8.1 Control parameters

#### **National limit values**

#### **Occupational exposure limit values (Workplace Exposure Limits)**

This information is not available.

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#### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)

#### **Eye/face protection**





Use safety goggle with side protection.

#### Skin protection





#### hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

#### type of material

NBR (Nitrile rubber)

#### material thickness

>0,11 mm

#### · breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

#### **Respiratory protection**





Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

#### **Environmental exposure controls**

Keep away from drains, surface and ground water.

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# **SECTION 9: Physical and chemical properties**

#### Information on basic physical and chemical properties 9.1

Physical state liquid

Colour colourless

Odour characteristic

-45,1 °C Melting point/freezing point

132 °C Boiling point or initial boiling point and boiling

range

Flammability flammable liquid in accordance with GHS criteria

60 g/m³ (LEL) - 520 g/m³ (UEL) / 1,3 vol% (LEL) - 11 vol% (UEL) Lower and upper explosion limit

28°C Flash point

590 °C Auto-ignition temperature

Decomposition temperature not relevant

pH (value) not determined

0,7233 mm<sup>2</sup>/<sub>s</sub> at 20 °C Kinematic viscosity

0,8 mPa s at 20 °C Dynamic viscosity

Solubility(ies)

0,49 g/l at 20 °C Water solubility

Partition coefficient

Partition coefficient n-octanol/water (log value): 2,84

11,7 hPa at 20 °C Vapour pressure

Density and/or relative density

Density 1,106 <sup>g</sup>/<sub>cm³</sub>

Relative vapour density 3,88 (air = 1)

Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

> Information with regard to physical hazard There is no additional information.

classes:

Other safety characteristics:

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Maximum explosion pressure

5,7 bar

# **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

It's a reactive substance. Risk of ignition.

#### If heated

Risk of ignition. Vapours may form explosive mixtures with air.

#### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

#### 10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

#### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### 10.5 Incompatible materials

There is no additional information.

#### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

# **SECTION 11: Toxicological information**

#### 11.1 Information on toxicological effects

#### Classification acc. to GHS

#### **Acute toxicity**

Harmful if inhaled.

GHS of the United Nations, annex 4. May be harmful if swallowed.

# Acute toxicity Exposure route Endpoint Value Species Method Source oral LD50 2.910 mg/kg rat

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

#### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

# Carcinogenicity

Shall not be classified as carcinogenic.

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#### **Reproductive toxicity**

Shall not be classified as a reproductive toxicant.

#### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

#### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

#### **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

#### Symptoms related to the physical, chemical and toxicological characteristics

#### If swallowed

Data are not available.

#### • If in eyes

Data are not available.

#### If inhaled

Data are not available.

#### • If on skin

causes skin irritation

#### Other information

none

#### 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

#### 11.3 Information on other hazards

There is no additional information.

# **SECTION 12: Ecological information**

#### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

#### **Aquatic toxicity (acute)**

Endpoint	Value	Species	Source	Exposure time
EC50	100 <sup>mg</sup> / <sub>l</sub>	daphnia magna		48 h
LC50	1 <sup>mg</sup> / <sub>l</sub>	fish		96 h

#### 12.2 Persistence and degradability

Theoretical Oxygen Demand: 2.060 <sup>mg</sup>/<sub>g</sub> Theoretical Carbon Dioxide: 2,246 <sup>mg</sup>/<sub>mg</sub>

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#### **Process of degradability**

Process	Degradation rate	Time
biotic/abiotic	15 %	28 d

#### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW) 2,84
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#### 12.4 Mobility in soil

Data are not available.

#### 12.5 Results of PBT and vPvB assessment

Data are not available.

#### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

#### 12.7 Other adverse effects

Data are not available.

# **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

#### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

#### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

# Properties of waste which render it hazardous

**HP3** flammable

**HP 4** irritant - skin irritation and eye damage

**HP 6** acute toxicity

HP 14 ecotoxic

#### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

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# **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADRRID UN 1134
IMDG-Code UN 1134
ICAO-TI UN 1134

#### 14.2 UN proper shipping name

ADRRID CHLOROBENZENE
IMDG-Code CHLOROBENZENE
ICAO-TI Chlorobenzene

#### 14.3 Transport hazard class(es)

ADRRID 3
IMDG-Code 3
ICAO-TI 3

#### 14.4 Packing group

ADRRID III
IMDG-Code III
ICAO-TI III

#### **14.5 Environmental hazards** hazardous to the aquatic environment

#### 14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

#### 14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

#### 14.8 Information for each of the UN Model Regulations

# Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

Proper shipping name CHLOROBENZENE

Particulars in the transport document UN1134, CHLOROBENZENE, 3, III, (D/E), environ-

mentally hazardous

Classification code F1

Danger label(s) 3, "Fish and tree"





Environmental hazards yes (hazardous to the aquatic environment)

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 3

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Tunnel restriction code (TRC)

Hazard identification No

Emergency Action Code

2Y

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional

information

Classification code F1

**Danger label(s)** 3, "Fish and tree"





Environmental hazards Yes

Hazardous to water

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 3
Hazard identification No 30

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name CHLOROBENZENE

Particulars in the shipper's declaration UN1134, CHLOROBENZENE, 3, III, 28°C c.c., MAR-

**INE POLLUTANT** 

Marine pollutant yes (hazardous to the aquatic environment)

Danger label(s) 3, "Fish and tree"





Special provisions (SP)

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L

EmS F-E, S-D

Stowage category A

Segregation group 10 - Liquid halogenated hydrocarbons

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Chlorobenzene

Particulars in the shipper's declaration UN1134, Chlorobenzene, 3, III

Environmental hazards yes (hazardous to the aquatic environment)

Danger label(s) 3



Excepted quantities (EQ) E1

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Limited quantities (LQ)

10 L



15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

#### **Seveso Directive**

2012/	2012/18/EU (Seveso III)		
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
E1	environmental hazards (hazardous to the aquatic environment, cat. 1)	100 200	56)

#### **Notation**

56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

#### **Deco-Paint Directive**

VOC content	100 %
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#### **Industrial Emissions Directive (IED)**

VOC content	100 %
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Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

#### **Water Framework Directive (WFD)**

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Chlorobenzene D5	Organohalogen compounds and substances which may form such compounds in the aquatic envir- onment		a)	

#### Legend

a) Indicative list of the main pollutants

#### Regulation on the marketing and use of explosives precursors

not listed

#### **Regulation on drug precursors**

not listed

## Regulation on substances that deplete the ozone layer (ODS)

not listed

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Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

Dangerous substances with restrictions (GB REACH, Annex 17)			
Name of substance	Name acc. to inventory	CAS No	No
Chlorobenzene D5	this product meets the criteria for classi- fication in accordance with Regulation No 1272/2008/EC		3
Chlorobenzene D5	flammable / pyrophoric		40

#### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### **National inventories**

Country	Inventory	Status
EU	ECSI	substance is listed
NZ	NZIoC	substance is listed
TW	TCSI	substance is listed

Legend

ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
NZIOC New Zealand Inventory of Chemicals
TCSI Taiwan Chemical Substance Inventory

#### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

# **SECTION 16: Other information**

#### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Warning		yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8		Regulations concerning the International Car- riage of Dangerous Goods by Rail (RID)Addition- al information	yes
14.8		Classification code: F1	yes
14.8		Danger label(s): 3, "Fish and tree"	yes
14.8		Danger label(s): change in the listing (table)	yes
14.8		Environmental hazards: Yes Hazardous to water	yes
14.8		Excepted quantities (EQ): E1	yes
14.8		Limited quantities (LQ): 5 L	yes
14.8		Transport category (TC): 3	yes
14.8		Hazard identification No: 30	yes
15.1	Restrictions according to REACH, Annex XVII		yes
15.1		Dangerous substances with restrictions (REACH, Annex XVII): change in the listing (table)	yes
15.1	List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list: Not listed.		yes
15.1		National regulations(GB)	yes
15.1		List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list: not listed	yes
15.1		Restrictions according to GB REACH, Annex 17	yes
15.1		Dangerous substances with restrictions (GB REACH, Annex 17): change in the listing (table)	yes

# **Abbreviations and acronyms**

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)

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Abbr.	Descriptions of used abbreviations
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
UEL	Upper explosion limit (UEL)
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

## Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

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Code	Text
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

#### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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