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

#### **Cyclopentanone ≥99 %, for synthesis**

article number: 227A Version: 2.0 en

Replaces version of: 2023-06-14

Version: (1)



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

#### **Product identifier** 1.1

Identification of the substance **Cyclopentanone** ≥99 %, for synthesis

Article number 227A

Index No (GB CLP) 606-025-00-9 EC number 204-435-9 CAS number 120-92-3

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

Relevant identified uses: Laboratory and analytical use

Laboratory chemical

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

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**

#### Classification of the substance or mixture 2.1

#### Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
2.6	Flammable liquid	3	Flam. Liq. 3	H226
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319

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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.

#### 2.2 Label elements

#### Labelling

Signal word	Warning
-------------	---------

#### **Pictograms**

GHS02, GHS07



#### **Hazard statements**

H226	Flammable liquid and vapour
H315	Causes skin irritation
H319	Causes serious eye irritation

#### **Precautionary statements**

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

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition

sources. No smoking

P280 Wear protective gloves/eye protection

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

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

with water [or 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

#### 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  $\geq 0.1\%$ .

# SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Name of substance Cyclopentanone

Molecular formula C<sub>5</sub>H<sub>8</sub>O

Molar mass 84,12 g/<sub>mol</sub>

CAS No 120-92-3

EC No 204-435-9

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## **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

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

#### 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

# **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water spray, alcohol resistant foam, 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 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>)

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#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. 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.

#### 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.

#### 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.

#### 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.

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

Observe hints for combined storage.

#### **Consideration of other advice:**

Ground/bond container and receiving equipment.

#### **Ventilation requirements**

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.

#### **Human health values**

Relevant D	NELs and	other	threshold	levels

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	61 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	211 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	150 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	7 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
DNEL	8 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects

#### 8.2 Exposure controls

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

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





Use safety goggle with side protection.

#### **Skin protection**



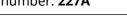


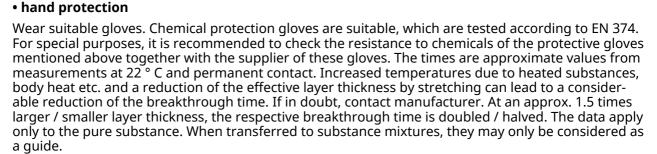
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#### type of material

Butyl caoutchouc (butyl rubber)

#### material thickness

0,7mm

#### 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.

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

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

Physical state liquid

Colour colourless
Odour characteristic

Melting point/freezing point -51,3 °C Boiling point or initial boiling point and boiling 130,6 °C

range

Flammability flammable liquid in accordance with GHS criteria

Lower and upper explosion limit 1,6 vol% (LEL) - 10,8 vol% (UEL)

Flash point 30 °C (c.c.)

Auto-ignition temperature 430 °C at 1.025 hPa (ECHA)

Decomposition temperature not relevant pH (value) not determined

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Kinematic viscosity 1,132 mm²/s at 25 °C

Solubility(ies)

Water solubility 301  $^{9}/_{1}$  at 20  $^{\circ}$ C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 0,7 (pH value: 7, 25 °C) (ECHA)

Soil organic carbon/water (log KOC) 1,38 (ECHA)

Vapour pressure <200 hPa at 50 °C

Density and/or relative density

Density  $0.95 \, {}^{9}/_{\mathrm{cm}^3}$  at 20  ${}^{\circ}\mathrm{C}$ 

Relative vapour density Information on this property is not available.

Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

Other safety characteristics: There is no additional information.

## **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.

There is no additional information.

#### 10.3 Possibility of hazardous reactions

**Violent reaction with:** strong oxidiser, Strong acid, Strong alkali, **Danger of explosion:** Hydrogen peroxide, Nitric acid, Hydrazine

#### 10.4 Conditions to avoid

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

#### 10.5 Incompatible materials

Rubber articles, different plastics

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Hazardous combustion products: see section 5.

## **SECTION 11: Toxicological information**

#### 11.1 Information on toxicological effects

#### Classification acc. to GHS

#### **Acute toxicity**

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed or in contact with skin.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>2.000 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA
dermal	LD50	>2.000 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### 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.

#### 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

Causes serious eye irritation

#### If inhaled

Data are not available.

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• 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

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (act	ute)			
Endpoint	Value	Species	Source	Exposure time
LC50	>100 <sup>mg</sup> / <sub>l</sub>	fish	ECHA	96 h
EC50	>100 <sup>mg</sup> / <sub>l</sub>	aquatic invertebrates	ECHA	48 h

Aquatic toxicity (ch	ronic)			
Endpoint	Value	Species	Source	Exposure time
EC50	>1.000 <sup>mg</sup> / <sub>l</sub>	microorganisms	ECHA	3 h

#### 12.2 Persistence and degradability

Theoretical Oxygen Demand: 2,473  $^{\rm mg}/_{\rm mg}$  Theoretical Carbon Dioxide: 2,616  $^{\rm mg}/_{\rm mg}$ 

#### **Biodegradation**

The substance is readily biodegradable.

Process of degradability		
Process	Degradation rate	Time
oxygen depletion	102 %	28 d

#### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	0,7 (pH value: 7, 25 °C) (ECHA)
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#### 12.4 Mobility in soil

The Organic Carbon normalised adsorption 1,3 coefficient	,38 (ECHA)
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#### 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.

#### 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

#### 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.

## **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADRRID UN 2245
IMDG-Code UN 2245
ICAO-TI UN 2245

#### 14.2 UN proper shipping name

ADRRID CYCLOPENTANONE IMDG-Code CYCLOPENTANONE

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	ICAO-TI	Cyclopentanone
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	non-environmentally hazardous acc. to the dangerous goods regulations

## 14.6 Special precautions for user

**Excepted quantities (EQ)** 

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	CYCLOPENTANONE		
Particulars in the transport document	UN2245, CYCLOPENTANONE, 3, III, (D/E)		
Classification code	F1		
Danger label(s)	3		
3			
Excepted quantities (EQ)	E1		
Limited quantities (LQ)	5 L		
Transport category (TC)	3		
Tunnel restriction code (TRC)	D/E		
Hazard identification No	30		
Emergency Action Code	3Y		
Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information			
Classification code	F1		
Danger label(s)	3		

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E1

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Limited quantities (LQ) 5 L

Transport category (TC) 3

Hazard identification No 30

#### International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name CYCLOPENTANONE

Particulars in the shipper's declaration UN2245, CYCLOPENTANONE, 3, III, 30°C c.c.

Marine pollutant Danger label(s) 3



Special provisions (SP) 
Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

EmS F-E, S-D

Stowage category A

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

Proper shipping name Cyclopentanone

Particulars in the shipper's declaration UN2245, Cyclopentanone, 3, III

Danger label(s) 3



Excepted quantities (EQ) E1
Limited quantities (LQ) 10 L

## **SECTION 15: Regulatory information**

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

#### **Seveso Directive**

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the plication of lower and upper-tier in quirements	ap- Notes re-
P5c	flammable liquids (cat. 2, 3)	5.000 50.000	51)

#### Notation

51) Flammable liquids, categories 2 or 3 not covered by P5a and P5b

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

VOC content	100 %
VOC content	950 <sup>g</sup> / <sub>l</sub>

#### **Industrial Emissions Directive (IED)**

VOC content	100 %
VOC content	950 <sup>g</sup> / <sub>l</sub>

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)** 

not listed

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

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
Cyclopentanone	this product meets the criteria for classi- fication in accordance with Regulation No 1272/2008/EC		3
Cyclopentanone	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.

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#### **National inventories**

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

Legend

AIIC Australian Inventory of Industrial Chemicals
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China
INSQ National Inventory of Chemical Substances
KECI Korea Existing Chemicals Inventory
NCI National Chemical Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances
TCSI Taiwan Chemical Substance Inventory

Taiwan Chemical Substance Inventory Toxic Substance Control Act

#### 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
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of ≥ 0,1%.	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
15.1		National inventories: change in the listing (table)	yes

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## **Abbreviations and acronyms**

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concern- ing the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
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 ident fier 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 CLP	The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended)
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 Na- tions
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
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
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 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

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#### 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)

Code	Text
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

#### **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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