

## AERON® n-Pentan

Version number: 9.0  
Replaces version of: 30.05.2023 (8)

Revision: 19.04.2024

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

#### 1.1 Product identifier

Identification of the substance	<b>AERON® n-Pentan</b>
Registration number (REACH)	01-2119459286-30-xxxx
EC number	203-692-4
Index number in CLP Annex VI	601-006-00-1
CAS number	109-66-0

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

Relevant identified uses	Manufacture of substance Distribution of substance Formulation [mixing] of preparations and/or re-packaging (excluding alloys) Blowing agents
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#### 1.3 Details of the supplier of the safety data sheet

SCHARR CPC GmbH  
Hentrichstraße 65  
47809 Krefeld  
Germany

Telephone: +49 2151 5219-0  
Telefax: +49 2151 5219-22  
e-mail: info@scharr-cpc.de  
Website: www.scharr-cpc.de

e-mail (competent person)

produktsicherheit@scharr-cpc.de

#### 1.4 Emergency telephone number

Poison centre			
Country	Name	Postal code/city	Telephone
Germany	Giftinformation Freiburg	79106 Freiburg im Breisgau	+49 (0)761 19240

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Hazard class	Category	Hazard class and category	Hazard statement
flammable liquid	1	Flam. Liq. 1	H224
specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336
aspiration hazard	1	Asp. Tox. 1	H304
hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16.

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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 according to Regulation (EC) No 1272/2008 (CLP)

- signal word danger

- pictograms

GHS02, GHS07, GHS08,  
GHS09



- hazard statements

H224	Extremely flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic 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.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

- supplemental hazard information

EUH066	Repeated exposure may cause skin dryness or cracking.
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### 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	pentane
Identifiers	
REACH Reg. No	01-2119459286-30-xxxx
EC No	203-692-4
CAS No	109-66-0
Index No	601-006-00-1
Purity	$\geq 95\%$













# Safety Data Sheet

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

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Impurities and additives, classification acc. to GHS				
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
2,2-dimethylpropane	CAS No 463-82-1  EC No 207-343-7  REACH Reg. No 01- 2119480396- 30-xxxx	1 – < 5	Flam. Gas 1A / H220 Press. Gas C / H280 Aquatic Chronic 2 / H411	  
cyclopentane	CAS No 287-92-3  EC No 206-016-6	1 – < 5	Flam. Liq. 2 / H225 Aquatic Chronic 3 / H412	
butane	CAS No 106-97-8  EC No 203-448-7  REACH Reg. No 01- 2119474691- 32-xxxx	1 – < 5	Flam. Gas 1A / H220 Press. Gas L / H280	 
isobutane	CAS No 75-28-5  EC No 200-857-2  REACH Reg. No 01- 2119485395- 27-xxxx	1 – < 5	Flam. Gas 1A / H220 Press. Gas L / H280	 
isopentane	CAS No 78-78-4  EC No 201-142-8  REACH Reg. No 01- 2119475602- 38-xxxx	1 – < 5	Flam. Liq. 1 / H224 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411	   

### Remarks

For full text of abbreviations: see SECTION 16

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**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**General notes**

Do not leave affected person unattended. Remove victim out of the danger area. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Self-protection of the first aider.

**Following inhalation**

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

**Following skin contact**

Wash with plenty of soap and water.

**Following eye contact**

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

**Following ingestion**

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Call a physician immediately.

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

Narcotic effects. Breathing difficulties. Headache. Vertigo.

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

Subsequent observance for pneumonia and pulmonary oedema. Supervise the blood circulation.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Water spray, BC-powder, Carbon dioxide (CO<sub>2</sub>), Sand

**Unsuitable extinguishing media**

Water jet

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

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. Danger of bursting container.

**Hazardous combustion products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

**5.3 Advice for firefighters**

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

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**SECTION 6: Accidental release measures**

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

For non-emergency personnel

Remove persons to safety. Ventilate affected area. Avoidance of ignition sources.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Provision of sufficient ventilation.

**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

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

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**

Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- specific notes/details

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.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

Managing of associated risks

- explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- ventilation requirements

Use local and general ventilation. Ground/bond container and receiving equipment.

- Lagerklasse (storage class according to TRGS 510, 3 (flammable or desensitizing explosive liquids) Germany)

- packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

### 7.3 Specific end use(s)

See section 16 for a general overview.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)								
Country	Name of substance	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Source
AT	pentane	109-66-0	MAK	600	1.800			GKV
CH	pentane	109-66-0	MAK	600	1.800	1.200	3.600	SUVA
DE	pentane	109-66-0	AGW	1.000	3.000	2.000	6.000	TRGS 900
EU	pentane	109-66-0	IOELV	1.000	3.000			2006/15/EC

Notation

STEL

short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA

time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	3.000 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	432 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

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### Relevant DNELs of components

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
isopentane	78-78-4	DNEL	432 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
isopentane	78-78-4	DNEL	3.000 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects

### Environmental values

#### Relevant PNECs and other threshold levels

End-point	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	880 µg/l	aquatic organisms	water	intermittent release
PNEC	230 µg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	230 µg/l	aquatic organisms	marine water	short-term (single instance)
PNEC	3.600 µg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	1,2 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	1,2 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
PNEC	0,55 mg/kg	terrestrial organisms	soil	short-term (single instance)

## 8.2 Exposure controls

### Appropriate engineering controls

General ventilation.

### Individual protection measures (personal protective equipment)

#### Eye/face protection

Wear eye/face protection.

#### Skin protection

##### - hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

##### - type of material

PE: polyethylene, CR: chloroprene (chlorobutadiene) rubber, IIR: isobutene-isoprene (butyl) rubber

##### - material thickness

> 0,35 mm

##### - breakthrough times of the glove material

0,4 mm

>120 minutes (permeation: level 4)

##### - other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

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### Respiratory protection

[In case of inadequate ventilation] wear respiratory protection. Combination filtering device (EN 141). Type: AX (gas filters and combined filters against low-boiling point organic compounds, colour code: Brown).

### Environmental exposure controls

Use appropriate container to avoid environmental contamination. 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	-129,7 °C at 1.013 mbar
Boiling point or initial boiling point and boiling range	36 °C at 1.013 mbar
Evaporation rate	not determined
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	1,4 vol% - 7,8 vol%
Flash point	-48 °C at 1.013 mbar
Auto-ignition temperature	260 °C at 1.013 mbar
pH (value)	not determined

### Solubility(ies)

Water solubility	38,5 mg/l at 20 °C
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### Partition coefficient

Partition coefficient n-octanol/water (log value)	3,45 (pH value: 7, 25 °C)
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Vapour pressure	570 hPa at 20 °C
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### Density and/or relative density

Density	0,63 g/cm³ at 20 °C
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Particle characteristics	not relevant (liquid)
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### 9.2 Other information

Information with regard to physical hazard classes	there is no additional information
Other safety characteristics	
Temperature class (EU, acc. to ATEX)	T3 (maximum permissible surface temperature on the equipment: 200°C)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

### 10.4 Conditions to avoid

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

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

### 10.5 Incompatible materials

Oxidisers

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

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

Acute toxicity			
Exposure route	Endpoint	Value	Species
oral	LD50	>2.000 mg/kg	rat
inhalation: vapour	LC50	>25,3 mg/l/4h	rat

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**Skin corrosion/irritation**

Shall not be classified as corrosive/irritant to skin.

**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.

**Reproductive toxicity**

Shall not be classified as a reproductive toxicant.

**Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**

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

**Aspiration hazard**

May be fatal if swallowed and enters airways.

**Other information**

Repeated exposure may cause skin dryness or cracking.

**11.2 Information on other hazards**

There is no additional information.

**SECTION 12: Ecological information**

**12.1 Toxicity**

Acc. to 1272/2008/EC: Toxic to aquatic life with long lasting effects.

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV): WGK 2, hazardous to water (Germany)

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
EC50	2,8 mg/l	aquatic invertebrates	48 h
LL50	27,55 mg/l	fish	96 h
EL50	48,11 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (acute) of components					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
butane	106-97-8	LC50	49,9 mg/l	fish	96 h
butane	106-97-8	EC50	19,37 mg/l	algae	96 h

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### Aquatic toxicity (acute) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
isobutane	75-28-5	LC50	49,9 mg/l	fish	96 h
isobutane	75-28-5	EC50	19,37 mg/l	algae	96 h
isopentane	78-78-4	LL50	34,05 mg/l	fish	96 h
isopentane	78-78-4	EL50	59,44 mg/l	aquatic invertebrates	48 h
isopentane	78-78-4	EC50	5,2 mg/l	algae	96 h
isopentane	78-78-4	LC50	12,8 mg/l	fish	96 h

## 12.2 Persistence and degradability

### Biodegradation

The substance is readily biodegradable. The relevant substances of the mixture are readily biodegradable. Data are not available.

### Process of degradability

Process	Degradation rate	Time
oxygen depletion	3 %	7 d

### Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
isopentane	78-78-4	oxygen depletion	71,43 %	28 d		ECHA

## 12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	3,45 (pH value: 7, 25 °C)
BCF	171 (ECHA)

### Bioaccumulative potential of components

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
butane	106-97-8		1,09 (pH value: 7, 20 °C)	
isopentane	78-78-4		4 (pH value: 6,6, 25 °C)	

## 12.4 Mobility in soil

Data are not available.

## 12.5 Results of PBT and vPvB assessment

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

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### 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

Waste treatment-relevant information

Solvent reclamation/regeneration.

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. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

### 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.

### Remarks

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

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADR/RID/ADN	UN 1265
IMDG-Code	UN 1265
ICAO-TI	UN 1265

### 14.2 UN proper shipping name

ADR/RID/ADN	PENTANES
IMDG-Code	PENTANES
ICAO-TI	Pentanes

### 14.3 Transport hazard class(es)

ADR/RID/ADN	3
IMDG-Code	3
ICAO-TI	3

### 14.4 Packing group

ADR/RID/ADN	I
IMDG-Code	I
ICAO-TI	I

### 14.5 Environmental hazards

hazardous to the aquatic environment

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### 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.

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

##### Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - additional information

Classification code F1  
Danger label(s) 3, fish and tree



Environmental hazards yes (hazardous to the aquatic environment)  
Excepted quantities (EQ) E3  
Limited quantities (LQ) 0  
Transport category (TC) 1  
Tunnel restriction code (TRC) D/E  
Hazard identification No 33

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

Marine pollutant yes (hazardous to the aquatic environment)  
Danger label(s) 3, fish and tree



Special provisions (SP) -  
Excepted quantities (EQ) E3  
Limited quantities (LQ) 0  
EmS F-E, S-D  
Stowage category E

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

Environmental hazards yes (hazardous to the aquatic environment)  
Danger label(s) 3



Excepted quantities (EQ) E3

### 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)

##### Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	CAS No	Restriction	No
pentane	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
pentane	flammable / pyrophoric		R40	40

##### Legend

R3

- Shall not be used in:
  - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
  - tricks and jokes,
  - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
- Articles not complying with paragraph 1 shall not be placed on the market.
- Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
  - can be used as fuel in decorative oil lamps for supply to the general public, and
  - present an aspiration hazard and are labelled with H304.
- Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
- Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
  - lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
  - grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter fluid may lead to life threatening lung damage";
  - lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;

R40

- Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
  - metallic glitter intended mainly for decoration,
  - artificial snow and frost,
  - 'whoopie' cushions,
  - silly string aerosols,
  - imitation excrement,
  - horns for parties,
  - decorative flakes and foams,
  - artificial cobwebs,
  - stink bombs.
- Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
  - 'For professional users only'.
- By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
- The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

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

not listed

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### Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
P5a	flammable liquids (cat. 1)	10 50	49)

#### Notation

- 49) - flammable liquids, category 1, or  
- flammable liquids category 2 or 3 maintained at a temperature above their boiling point, or  
- other liquids with a flash point  $\leq 60$  °C, maintained at a temperature above their boiling point

### 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)

not listed

### Regulation on persistent organic pollutants (POP)

not listed

### National regulations (Germany)

#### Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV)

Wassergefährdungsklasse, WGK 2 hazardous to water  
(water hazard class)

Index number 452

### Technical instructions on air quality control (Germany)

Number	Group of substances	Class	Conc.	Mass flow	Mass concentration	Notation
5.2.5	organic substances		$\geq 25$ wt%	0,5 kg/h	50 mg/m <sup>3</sup>	3)

#### Notation

- 3) a total mass flow of 0.50 kg/h or a total mass concentration of 50 mg/m<sup>3</sup>, each of which to be indicated as total carbon, shall not be exceeded (except organic particulate matter)

### National inventories

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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
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

### Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
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
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
TSCA	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)
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$ .	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ .
3.1		Impurities and additives, classification acc. to GHS: change in the listing (table)
3.1		Remarks: For full text of abbreviations: see SECTION 16
12.6	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$ .	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ .



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### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR/RID/ADN	Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)
AGW	Workplace exposure limit
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Asp. Tox.	Aspiration hazard
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
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 identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Flam. Gas	Flammable gas
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
GKV	Grenzwerteverordnung
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

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Abbr.	Descriptions of used abbreviations
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
IOELV	Indicative occupational exposure limit value
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
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
log KOW	n-Octanol/water
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Press. Gas	Gas under pressure
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)
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
SUVA	Grenzwerte am Arbeitsplatz, Suva
SVHC	Substance of Very High Concern
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances, Germany)
TRGS 900	Arbeitsplatzgrenzwerte (TRGS 900)
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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

Code	Text
H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful 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.