

## cyclopentane

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

## 1.1 Product identifier:

|                           |                                  |
|---------------------------|----------------------------------|
| Product name              | : cyclopentane                   |
| Synonyms                  | : pentamethylene                 |
| Registration number REACH | : 01-2119463053-47               |
| Product type REACH        | : Substance/mono-constituent     |
| CAS number                | : 287-92-3                       |
| EC index number           | : 601-030-00-2                   |
| EC number                 | : 206-016-6                      |
| RTECS number              | : GY2390000                      |
| Molecular mass            | : 70.14 g/mol                    |
| Formula                   | : C <sub>5</sub> H <sub>10</sub> |

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

## 1.2.1 Relevant identified uses

Industrial and professional use. Before use: carry out a risk assessment

## 1.2.2 Uses advised against

No uses advised against known

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

Supplier of the safety data sheet

CHEMOGAS NV  
Westvaardijk 85  
B-1850 Grimbergen Belgium  
☎ +32 2 251 60 87  
✉ +32 2 252 17 51  
info@chemogas.com

Distributor of the product

CHEMOGAS NV  
Westvaardijk 85  
B-1850 Grimbergen Belgium  
☎ +32 2 251 60 87  
✉ +32 2 252 17 51  
info@chemogas.com

## 1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

## SECTION 2: Hazards identification

## 2.1 Classification of the substance or mixture:

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

| Class           | Category   | Hazard statements  |
|-----------------|------------|--|
| Flam. Liq.      | category 2 | H225: Highly flammable liquid and vapour.                |
| Aquatic Chronic | category 3 | H412: Harmful to aquatic life with long lasting effects. |

## 2.2 Label elements:



Signal word Danger

## H-statements

H225 Highly flammable liquid and vapour.  
H412 Harmful to aquatic life with long lasting effects.

## P-statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280 Wear protective gloves and eye protection/face protection.  
P233 Keep container tightly closed.

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P273 Avoid release to the environment.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P403 + P235 Store in a well-ventilated place. Keep cool.

## 2.3 Other hazards:

May build up electrostatic charges: risk of ignition  
May be ignited by sparks  
Gas/vapour spreads at floor level: ignition hazard  
Heat may cause pressure rise in tanks/drums: explosion risk  
Not readily biodegradable in water

## SECTION 3: Composition/information on ingredients

### 3.1 Substances:

| Name<br>REACH Registration No    | CAS No<br>EC No       | Conc. (C) | Classification according to CLP               | Note       | Remark           |
|----------------------------------|-----------------------|-----------|---|------------|------------------|
| cyclopentane<br>01-2119463053-47 | 287-92-3<br>206-016-6 | C>99 %    | Flam. Liq. 2; H225<br>Aquatic Chronic 3; H412 | (1)(10)(2) | Mono-constituent |

(1) For H-statements in full: see heading 16  
(2) Substance with a Community workplace exposure limit  
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

### 3.2 Mixtures:

Not applicable

## SECTION 4: First aid measures

### 4.1 Description of first aid measures:

#### General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.

#### After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

#### After skin contact:

Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

#### After eye contact:

Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

#### After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell.

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

#### 4.2.1 Acute symptoms

##### After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Central nervous system depression. Headache. Nausea. Dizziness. Mental confusion. Coordination disorders. Feeling of weakness. Disturbances of consciousness.

##### After skin contact:

ON CONTINUOUS EXPOSURE/CONTACT: Dry skin.

##### After eye contact:

Redness of the eye tissue.

##### After ingestion:

Irritation of the gastric/intestinal mucosa. Diarrhoea. Risk of aspiration pneumonia. AFTER INGESTION OF HIGH QUANTITIES: Central nervous system depression. Symptoms similar to those listed under inhalation.

#### 4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media:

#### 5.1.1 Suitable extinguishing media:

Water spray. Polyvalent foam. AFFF foam. Alcohol-resistant foam. BC powder. Carbon dioxide.

#### 5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

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

Upon combustion: CO and CO<sub>2</sub> are formed.

## 5.3 Advice for firefighters:

### 5.3.1 Instructions:

Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

### 5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

## SECTION 6: Accidental release measures

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

Keep upwind. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed.

#### 6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

#### 6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Suitable protective clothing

See heading 8.2

### 6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Prevent soil and water pollution. Prevent spreading in sewers.

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

Take up liquid spill into inert absorbent material, e.g.: dry sand/earth kieselguhr, powdered limestone vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4 Reference to other sections:

See heading 13.

## SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 7.1 Precautions for safe handling:

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Gas/vapour heavier than air at 20°C. Observe normal hygiene standards. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

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

#### 7.2.1 Safe storage requirements:

Storage temperature: <50 °C. Store below 50°C. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Keep only in the original container. Store only in a limited quantity. Meet the legal requirements.

#### 7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents, highly flammable materials.

#### 7.2.3 Suitable packaging material:

Stainless steel, iron.

#### 7.2.4 Non suitable packaging material:

No data available

### 7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters:

#### 8.1.1 Occupational exposure

##### a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

#### Belgium

|              |  |                        |
|--------------|--|------------------------|
| Cyclopentane | Time-weighted average exposure limit 8 h | 600 ppm                |
|              | Time-weighted average exposure limit 8 h | 1800 mg/m <sup>3</sup> |

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## USA (TLV-ACGIH)

|              |  |         |
|--------------|--|---------|
| Cyclopentane | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 600 ppm |
|--------------|--|---------|

## France

|              |  |                        |
|--------------|--|------------------------|
| Cyclopentane | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 600 ppm                |
|              | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 1720 mg/m <sup>3</sup> |

### b) National biological limit values

If limit values are applicable and available these will be listed below.

#### 8.1.2 Sampling methods

If applicable and available it will be listed below.

#### 8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

#### 8.1.4 DNEL/PNEC values

##### DNEL - Workers

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| Effect level (DNEL/DMEL) | Type                                  | Value                  | Remark |
|--------------------------|---------------------------------------|------------------------|--------|
| DNEL                     | Long-term systemic effects inhalation | 3000 mg/m <sup>3</sup> |        |
|                          | Long-term systemic effects dermal     | 432 mg/kg bw/day       |        |

##### DNEL - General population

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| Effect level (DNEL/DMEL) | Type                                  | Value                 | Remark |
|--------------------------|---------------------------------------|-----------------------|--------|
| DNEL                     | Long-term systemic effects inhalation | 643 mg/m <sup>3</sup> |        |
|                          | Long-term systemic effects dermal     | 214 mg/kg bw/day      |        |
|                          | Long-term systemic effects oral       | 214 mg/kg bw/day      |        |

#### 8.1.5 Control banding

If applicable and available it will be listed below.

## 8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

### 8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work.

#### a) Respiratory protection:

Gas mask with filter type AX at conc. in air > exposure limit.

#### b) Hand protection:

Gloves.

- materials (good resistance)

Nitrile rubber, PVA.

- materials (poor resistance)

Butyl rubber, natural rubber.

#### c) Eye protection:

Protective goggles.

#### d) Skin protection:

Protective clothing.

### 8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

## SECTION 9: Physical and chemical properties

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

|                     |  |
|---------------------|--|
| Physical form       | Liquid                                 |
| Odour               | Petroleum-like odour                   |
|                     | Mild odour                             |
| Odour threshold     | No data available                      |
| Colour              | Colourless to light yellow             |
| Particle size       | Not applicable (liquid)                |
| Explosion limits    | 1.1 - 8.7 vol %                        |
|                     | 41 - 233 g/m <sup>3</sup>              |
| Flammability        | Highly flammable liquid and vapour.    |
| Log Kow             | 3 ; Experimental value ; Other ; 25 °C |
| Dynamic viscosity   | 0.44 mPa.s ; 20 °C                     |
| Kinematic viscosity | No data available                      |

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|                           |  |
|---------------------------|--|
| Melting point             | -94 °C   |
| Boiling point             | 49 °C ; 1013 hPa                                       |
| Flash point               | -25 °C ; 1013 hPa                                      |
| Evaporation rate          | > 1 ; butyl acetate                                    |
| Relative vapour density   | 2.4  |
| Vapour pressure           | 360 hPa ; 20 °C<br>1040 hPa ; 50 °C                    |
| Solubility                | water ; 0.015 g/100 ml ; 25 °C                         |
| Relative density          | 0.75 ; 20 °C   |
| Decomposition temperature | No data available                                      |
| Auto-ignition temperature | 361 °C ; 1013 hPa                                      |
| Explosive properties      | No chemical group associated with explosive properties |
| Oxidising properties      | No chemical group associated with oxidising properties |
| pH                        | No data available                                      |

## 9.2 Other information:

|   |                                |
|---|--------------------------------|
| Minimum ignition energy                       | 0.54 mJ                        |
| Specific conductivity                         | < 10000 pS/m                   |
| Critical temperature                          | 239 °C                         |
| Critical pressure                             | 45100 hPa                      |
| Surface tension                               | 21.88 mN/m ; 25 °C ; 100 vol % |
| Relative density saturated vapour/air mixture | 1.47                           |
| Saturation concentration                      | 1035 g/m <sup>3</sup>          |
| Absolute density                              | 746 kg/m <sup>3</sup>          |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity:

May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Substance has neutral reaction.

### 10.2 Chemical stability:

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions:

Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion.

### 10.4 Conditions to avoid:

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

### 10.5 Incompatible materials:

Oxidizing agents, highly flammable materials.

### 10.6 Hazardous decomposition products:

Upon combustion: CO and CO<sub>2</sub> are formed.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects:

#### 11.1.1 Test results

#### Acute toxicity

##### cyclopentane

| Route of exposure    | Parameter | Method   | Value           | Exposure time | Species           | Value determination | Remark |
|----------------------|-----------|----------|-----------------|---------------|-------------------|---------------------|--------|
| Oral                 | LD50      | OECD 423 | > 5000 mg/kg bw |               | Rat (male/female) | Experimental value  |        |
| Dermal               |           |          |                 |               |                   | Data waiving        |        |
| Inhalation (vapours) | LC50      | OECD 403 | > 25.3 mg/l air | 4 h           | Rat (male/female) | Experimental value  |        |

#### Conclusion

Not classified for acute toxicity

#### Corrosion/irritation

##### cyclopentane

| Route of exposure | Result         | Method                 | Exposure time | Time point      | Species | Value determination | Remark |
|-------------------|----------------|------------------------|---------------|-----------------|---------|---------------------|--------|
| Eye               | Not irritating | OECD 405               | 72 h          | 1; 24; 72 hours | Rabbit  | Read-across         |        |
| Skin              | Not irritating | Equivalent to OECD 404 | 4 h           | 24; 72 hours    | Rabbit  | Read-across         |        |

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Not classified as irritating to the skin  
 Not classified as irritating to the eyes  
 Not classified as irritating to the respiratory system

## Respiratory or skin sensitisation

cyclopentane

| Route of exposure | Result          | Method   | Exposure time | Observation time point | Species             | Value determination | Remark |
|-------------------|-----------------|----------|---------------|------------------------|---------------------|---------------------|--------|
| Skin              | Not sensitizing | OECD 406 | 24 h          | 24; 48 hours           | Guinea pig (female) | Read-across         |        |

### Conclusion

Not classified as sensitizing for skin  
 Not classified as sensitizing for inhalation

## Specific target organ toxicity

cyclopentane

| Route of exposure    | Parameter | Method   | Value       | Organ | Effect    | Exposure time    | Species           | Value determination |
|----------------------|-----------|----------|-------------|-------|-----------|------------------|-------------------|---------------------|
| Oral                 |           |          |             |       |           |                  |                   | Data waiving        |
| Dermal               |           |          |             |       |           |                  |                   | Data waiving        |
| Inhalation (vapours) | NOAEC     | OECD 413 | 30 mg/l air |       | No effect | 90 days (6h/day) | Rat (male/female) | Experimental value  |

### Conclusion

Not classified for subchronic toxicity

## Mutagenicity (in vitro)

cyclopentane

| Result   | Method   | Test substrate              | Effect | Value determination |
|----------|----------|-----------------------------|--------|---------------------|
| Negative | OECD 471 | Bacteria (S.typhimurium)    |        | Experimental value  |
| Negative | OECD 473 | Chinese hamster ovary (CHO) |        | Read-across         |

## Mutagenicity (in vivo)

cyclopentane

| Result   | Method                      | Exposure time | Test substrate      | Organ | Value determination |
|----------|-----------------------------|---------------|---------------------|-------|---------------------|
| Negative | EU Method B.12              | 3 day(s)      | Rat (male/female)   |       | Read-across         |
| Negative | Chromosome aberration assay | 6 h           | Mouse (male/female) |       | Experimental value  |

## Carcinogenicity

cyclopentane

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Organ | Effect |
|-------------------|-----------|--------|-------|---------------|---------|---------------------|-------|--------|
| Inhalation        |           |        |       |               |         | Data waiving        |       |        |
| Dermal            |           |        |       |               |         | Data waiving        |       |        |
| Oral              |           |        |       |               |         | Data waiving        |       |        |

## Reproductive toxicity

cyclopentane

|                        | Parameter    | Method                 | Value    | Exposure time              | Species           | Effect    | Organ | Value determination |
|------------------------|--------------|------------------------|----------|----------------------------|-------------------|-----------|-------|---------------------|
| Developmental toxicity | NOAEC        | Equivalent to OECD 414 | 7000 ppm | 11 days (gestation, daily) | Rat               | No effect |       | Read-across         |
| Maternal toxicity      | NOAEC        | Equivalent to OECD 414 | 2000 ppm | 11 days (gestation, daily) | Rat (female)      | No effect |       | Read-across         |
| Effects on fertility   | NOAEC (P/F1) | Equivalent to OECD 416 | 7000 ppm | 10 week(s)                 | Rat (male/female) | No effect |       | Read-across         |

### Conclusion CMR

Not classified for carcinogenicity  
 Not classified for mutagenic or genotoxic toxicity  
 Not classified for reprotoxic or developmental toxicity

## Toxicity other effects

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No (test) data available

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## Chronic effects from short and long-term exposure

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ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Skin rash/inflammation.

## SECTION 12: Ecological information

### 12.1 Toxicity:

#### cyclopentane

|  | Parameter | Method                 | Value      | Duration  | Species             | Test design   | Fresh/salt water | Value determination         |
|--|-----------|------------------------|------------|-----------|---------------------|---------------|------------------|-----------------------------|
| Acute toxicity fishes                    | LC50      | Equivalent to OECD 203 | 4.26 mg/l  | 96 h      | Oncorhynchus mykiss | Static system | Fresh water      | Read-across                 |
| Acute toxicity invertebrates             | EC50      | Equivalent to OECD 202 | 2.3 mg/l   | 48 h      | Daphnia magna       | Static system | Fresh water      | Read-across                 |
| Toxicity algae and other aquatic plants  | ErC50     | OECD 201               | 10.7 mg/l  | 72 h      | Scenedesmus sp.     | Static system | Fresh water      | Read-across; GLP            |
| Long-term toxicity fish                  | NOELR     |                        | 6.555 mg/l | 28 day(s) | Oncorhynchus mykiss |               | Fresh water      | QSAR; Nominal concentration |
| Long-term toxicity aquatic invertebrates | NOELR     |                        | 11.44 mg/l | 21 day(s) | Daphnia magna       |               | Fresh water      | QSAR; Nominal concentration |

#### Conclusion

Toxic to fishes  
Toxic to invertebrates (Daphnia)  
Harmful to algae  
Harmful to aquatic life with long lasting effects.

### 12.2 Persistence and degradability:

#### cyclopentane

##### Biodegradation water

| Method                                  | Value    | Duration  | Value determination |
|---|----------|-----------|---------------------|
| OECD 301F: Manometric Respirometry Test | 0 %; GLP | 28 day(s) | Experimental value  |

##### Phototransformation air (DT50 air)

| Method | Value      | Conc. OH-radicals    | Value determination |
|--------|------------|----------------------|---------------------|
| Other  | 3.2 day(s) | 5E5 /cm <sup>3</sup> | Calculated value    |

#### Conclusion

Not readily biodegradable in water

### 12.3 Bioaccumulative potential:

#### cyclopentane

##### BCF fishes

| Parameter | Method | Value | Duration | Species             | Value determination |
|-----------|--------|-------|----------|---------------------|---------------------|
| BCF       |        | 70.8  |          | Pimephales promelas | QSAR                |

##### Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------|-------|-------------|---------------------|
| Other  |        | 3     | 25 °C       | Experimental value  |

#### Conclusion

Low potential for bioaccumulation (Log Kow < 4)

### 12.4 Mobility in soil:

#### cyclopentane

##### (log) Koc

| Parameter | Method | Value | Value determination |
|-----------|--------|-------|---------------------|
| log Koc   | Other  | 2.53  | QSAR                |

#### Conclusion

Low potential for adsorption in soil

### 12.5 Results of PBT and vPvB assessment:

Substance does not meet the criteria of PBT, nor the criteria of vPvB according to Annex XIII of Regulation (EC) No 1907/2006, so is neither PBT nor vPvB.

### 12.6 Other adverse effects:

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##### Global warming potential (GWP)

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Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

**Ozone-depleting potential (ODP)**

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

## SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 13.1 Waste treatment methods:

#### 13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

07 01 04\* (wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals: other organic solvents, washing liquids and mother liquors). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Regulation (EU) No 1357/2014.

#### 13.1.2 Disposal methods

Recycle by distillation. Incinerate under surveillance with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into surface water.

#### 13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10\* (packaging containing residues of or contaminated by dangerous substances).

## SECTION 14: Transport information

### Road (ADR)

#### 14.1 UN number:

|           |      |
|-----------|------|
| UN number | 1146 |
|-----------|------|

#### 14.2 UN proper shipping name:

|                      |              |
|----------------------|--------------|
| Proper shipping name | Cyclopentane |
|----------------------|--------------|

#### 14.3 Transport hazard class(es):

|                              |    |
|------------------------------|----|
| Hazard identification number | 33 |
| Class                        | 3  |
| Classification code          | F1 |

#### 14.4 Packing group:

|               |    |
|---------------|----|
| Packing group | II |
| Labels        | 3  |

#### 14.5 Environmental hazards:

|  |    |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

#### 14.6 Special precautions for user:

|                    |  |
|--------------------|--|
| Special provisions |  |
| Limited quantities | Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |

### Rail (RID)

#### 14.1 UN number:

|           |      |
|-----------|------|
| UN number | 1146 |
|-----------|------|

#### 14.2 UN proper shipping name:

|                      |              |
|----------------------|--------------|
| Proper shipping name | Cyclopentane |
|----------------------|--------------|

#### 14.3 Transport hazard class(es):

|                              |    |
|------------------------------|----|
| Hazard identification number | 33 |
| Class                        | 3  |
| Classification code          | F1 |

#### 14.4 Packing group:

|               |    |
|---------------|----|
| Packing group | II |
| Labels        | 3  |

#### 14.5 Environmental hazards:

|  |    |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

#### 14.6 Special precautions for user:

|                    |  |
|--------------------|--|
| Special provisions |  |
| Limited quantities | Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |

### Inland waterways (ADN)

#### 14.1 UN number:

|           |      |
|-----------|------|
| UN number | 1146 |
|-----------|------|

#### 14.2 UN proper shipping name:

|                      |              |
|----------------------|--------------|
| Proper shipping name | Cyclopentane |
|----------------------|--------------|

#### 14.3 Transport hazard class(es):

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|  |  |
|--|--|
| Class                                    | 3  |
| Classification code                      | F1   |
| 14.4 Packing group:                      |  |
| Packing group                            | II   |
| Labels                                   | 3  |
| 14.5 Environmental hazards:              |  |
| Environmentally hazardous substance mark | no   |
| 14.6 Special precautions for user:       |  |
| Special provisions                       |  |
| Limited quantities                       | Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |

## Sea (IMDG/IMSBC)

|  |  |
|--|--|
| 14.1 UN number:  |  |
| UN number  | 1146   |
| 14.2 UN proper shipping name:  |  |
| Proper shipping name   | Cyclopentane   |
| 14.3 Transport hazard class(es):   |  |
| Class  | 3  |
| 14.4 Packing group:  |  |
| Packing group  | II   |
| Labels   | 3  |
| 14.5 Environmental hazards:  |  |
| Marine pollutant   | -  |
| Environmentally hazardous substance mark                                 | no   |
| 14.6 Special precautions for user:                                       |  |
| Special provisions   |  |
| Limited quantities   | Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |
| 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: |  |
| Annex II of MARPOL 73/78   | Not applicable, based on available data  |

## Air (ICAO-TI/IATA-DGR)

|   |              |
|---|--------------|
| 14.1 UN number:   |              |
| UN number   | 1146         |
| 14.2 UN proper shipping name:   |              |
| Proper shipping name  | Cyclopentane |
| 14.3 Transport hazard class(es):  |              |
| Class   | 3            |
| 14.4 Packing group:   |              |
| Packing group   | II           |
| Labels  | 3            |
| 14.5 Environmental hazards:   |              |
| Environmentally hazardous substance mark  | no           |
| 14.6 Special precautions for user:  |              |
| Special provisions  |              |
| Passenger and cargo transport: limited quantities: maximum net quantity per packaging | 1 L          |

## SECTION 15: Regulatory information

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

#### European legislation:

VOC content Directive 2010/75/EU

| VOC content | Remark |
|-------------|--------|
| 100 %       |        |

REACH Annex XVII - Restriction

Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

|              | Designation of the substance, of the group of substances or of the mixture   | Conditions of restriction   |
|--------------|--|---|
| cyclopentane | Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008:<br>(a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 | 1. Shall not be used in:<br>— ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,<br>— tricks and jokes,<br>— games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: |

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|                |  |   |
|----------------|--|---|
|                | <p>categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F;</p> <p>(b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10;</p> <p>(c) hazard class 4.1;</p> <p>(d) hazard class 5.1.</p>  | <p>— can be used as fuel in decorative oil lamps for supply to the general public, and,</p> <p>— present an aspiration hazard and are labelled with R65 or H304,4. 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).5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:</p> <p>a) lamp oils, labelled with R65 or 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”;</p> <p>b) grill lighter fluids, labelled with R65 or 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 may lead to life threatening lung damage”;</p> <p>c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.’</p> |
| · cyclopentane | <p>Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.</p> | <p>1. 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:</p> <ul style="list-style-type: none"> <li>— metallic glitter intended mainly for decoration,</li> <li>— artificial snow and frost,</li> <li>— “whoopie” cushions,</li> <li>— silly string aerosols,</li> <li>— imitation excrement,</li> <li>— horns for parties,</li> <li>— decorative flakes and foams,</li> <li>— artificial cobwebs,</li> <li>— stink bombs.</li> </ul> <p>2. 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:</p> <p>“For professional users only”.3. 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.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.</p>  |

## National legislation The Netherlands

|  |   |
|--|---|
| Waste identification (the Netherlands) | LWCA (the Netherlands): KGA category 03 |
| Waterbezwaarlijkheid                   | 7                                       |

## National legislation Germany

|     |   |
|-----|---|
| WGK | 1; Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2) |
|-----|---|

## National legislation France

No data available

## National legislation Belgium

No data available

## Other relevant data

No data available

## 15.2 Chemical safety assessment:

A chemical safety assessment has been performed.

## SECTION 16: Other information

### Full text of any H-statements referred to under headings 2 and 3:

H225 Highly flammable liquid and vapour.

H412 Harmful to aquatic life with long lasting effects.

(\*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the

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safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

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