

carbon monoxide, compressed

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

1.1 Product identifier:

| | |
|---------------------------|--|
| Product name | : carbon monoxide, compressed |
| Synonyms | : AH1; carbonic oxide; carbon monooxide; carbon monoxide; carbon oxide; carbon oxide (CO); CO, compressed; monoxide of carbon; process stream; S-038 |
| Registration number REACH | : 01-2119480165-39 |
| Product type REACH | : Substance/mono-constituent |
| CAS number | : 630-08-0 |
| EC index number | : 006-001-00-2 |
| EC number | : 211-128-3 |
| RTECS number | : FG3500000 |
| Molecular mass | : 28.01 g/mol |
| Formula | : CO |

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

Distributor of the product

CHEMOGAS NV
Westvaartdijk 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. Gas | category 1 | H220: Extremely flammable gas. |
| Press. Gas | Compressed gas | H280: Contains gas under pressure; may explode if heated. |
| Repr. | category 1A | H360D: May damage the unborn child. |
| Acute Tox. | category 3 | H331: Toxic if inhaled. |
| STOT RE | category 1 | H372: Causes damage to organs through prolonged or repeated exposure if inhaled. |

2.2 Label elements:



carbon monoxide, compressed

**Signal word**

Danger

H-statements

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H360D May damage the unborn child.
H331 Toxic if inhaled.
H372 Causes damage to organs through prolonged or repeated exposure if inhaled.

P-statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves and protective clothing.
P260 Do not breathe gas.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Supplemental information

Restricted to professional users.

2.3 Other hazards:

May build up electrostatic charges: risk of ignition
May be ignited by sparks
Produces effects on the nervous system
Obstructs oxygen absorption if inhaled

SECTION 3: Composition/information on ingredients

3.1 Substances:

| Name REACH Registration No | CAS No EC No | Conc. (C) | Classification according to CLP | Note | Remark |
|-------------------------------------|-----------------------|-----------|---|------------|------------------|
| carbon monoxide 01-2119480165-39 | 630-08-0 211-128-3 | C>99% | Flam. Gas 1; H220 Press. Gas - Compressed gas; H280 Repr. 1A; H360D Acute Tox. 3; H331 STOT RE 1; H372 | (1)(10)(2) | Mono-constituent |

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

(1) For H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

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.

After inhalation:

Remove the victim into fresh air. Immediately consult a doctor/medical service.

After skin contact:

Rinse with water. Take victim to a doctor if irritation persists.

After eye contact:

Rinse with water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Not applicable.

4.2 Most important symptoms and effects, both acute and delayed:**4.2.1 Acute symptoms****After inhalation:**

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Feeling of weakness. Headache. Nausea. Vomiting. Dizziness. Visual disturbances. Auditory disturbances. Mental confusion. Rapid respiration. Accelerated heart action. Emotional instability. Impaired memory. Coordination disorders. Respiratory difficulties. Disturbances of consciousness. Brain affection. Cramps/uncontrolled muscular contractions. Respiratory collapse. ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Cardiac and blood circulation effects. Impairment of the nervous system.

After skin contact:

Unlikely to cause harmful effects.

After eye contact:

Unlikely to cause harmful effects.

After ingestion:

Not applicable.

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. BC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture:

5.3 Advice for firefighters:

5.3.1 Instructions:

If no hazard for/from the surroundings: controlled burning. If hazardous substances are nearby: consider extinguishment. Extinguish only if gas supply/leak can be shut afterwards. 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.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep upwind. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing.

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.

6.3 Methods and material for containment and cleaning up:

Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. 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. Observe very strict hygiene - avoid contact.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: <50 °C. Store below 50°C. Store in a dark area. Keep container in a well-ventilated place. Fireproof storeroom. Keep locked up. Provide for an automatic sprinkler system. Provide the tank with earthing. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, combustible materials, oxidizing agents, highly flammable materials, metals, halogens.

7.2.3 Suitable packaging material:

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Stainless steel, carbon steel.

7.2.4 Non suitable packaging material:

Nickel, iron.

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.

The Netherlands

| | | |
|--------------|---|----------------------|
| Koolmonoxide | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 25 ppm |
| | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 29 mg/m ³ |

Belgium

| | | |
|--------------------|--|----------------------|
| Carbone (oxyde de) | Time-weighted average exposure limit 8 h | 25 ppm |
| | Time-weighted average exposure limit 8 h | 29 mg/m ³ |

USA (TLV-ACGIH)

| | | |
|-----------------|--|--------|
| Carbon monoxide | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 25 ppm |
|-----------------|--|--------|

Germany

| | | |
|--------------------|---|----------------------|
| Kohlenstoffmonoxid | Time-weighted average exposure limit 8 h (TRGS 900) | 30 ppm |
| | Time-weighted average exposure limit 8 h (TRGS 900) | 35 mg/m ³ |

France

| | | |
|--------------------|--|----------------------|
| Carbone (oxyde de) | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 50 ppm |
| | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 55 mg/m ³ |

UK

| | | |
|-----------------|---|-----------------------|
| Carbon monoxide | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 30 ppm |
| | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 35 mg/m ³ |
| | Short time value (Workplace exposure limit (EH40/2005)) | 200 ppm |
| | Short time value (Workplace exposure limit (EH40/2005)) | 232 mg/m ³ |

b) National biological limit values

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

8.1.2 Sampling methods

| Product name | Test | Number |
|-----------------|-------|--------|
| Carbon Monoxide | NIOSH | 6604 |
| Carbon Monoxide | OSHA | ID 209 |
| Carbon Monoxide | OSHA | ID 210 |

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

carbon monoxide, compressed

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|-----------------------|--------|
| DNEL | Long-term systemic effects inhalation | 23 mg/m ³ | |
| | Acute systemic effects inhalation | 117 mg/m ³ | |
| | Long-term local effects inhalation | 23 mg/m ³ | |
| | Acute local effects inhalation | 117 mg/m ³ | |

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

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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 very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

a) Respiratory protection:

Gas mask with filter type CO. Self-contained breathing apparatus.

b) Hand protection:

Gloves.

- materials (good resistance)

Polyethylene, PVC, viton.

- materials (less resistance)

Natural rubber, neoprene.

c) Eye protection:

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 | Compressed gas |
| Odour | Odourless |
| Odour threshold | Not applicable |
| Colour | Colourless |
| Particle size | Not applicable (gas) |
| Explosion limits | 12.50 - 74 vol % 145 - 870 g/m ³ |
| Flammability | Extremely flammable gas. |
| Log Kow | 1.78 ; Weight of evidence approach |
| Dynamic viscosity | No data available |
| Kinematic viscosity | No data available |
| Melting point | -205 °C |
| Boiling point | -192 °C |
| Flash point | No data available |
| Evaporation rate | No data available |
| Relative vapour density | 0.970 |
| Vapour pressure | 30609 hPa ; -143 °C |
| Solubility | water ; 0.023 g/100 ml ethanol ; 0.19 g/100 ml acetone ; 0.25 g/100 ml |
| Relative density | 0.790 ; -192 °C |
| Decomposition temperature | No data available |
| Auto-ignition temperature | 605 °C |
| 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 | < 0.3 mJ |
| Critical temperature | -140 °C |
| Critical pressure | 35000 hPa |
| Surface tension | 0.098 N/m ; -192 °C |
| Absolute density | 1.25 kg/m ³ |

SECTION 10: Stability and reactivity

10.1 Reactivity:

May build up electrostatic charges: risk of ignition. May be ignited by sparks.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

Reacts with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Reacts on exposure to light with (some) halogens: release of (highly) toxic gases/vapours. Violent to explosive reaction with (some) halogens compounds. Reacts upon a rise of pressure with (some) metals: release of explosive compounds.

10.4 Conditions to avoid:

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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:

Combustible materials, oxidizing agents, highly flammable materials, metals, halogens.

10.6 Hazardous decomposition products:

No data available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

carbon monoxide, compressed

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|--------------------|-----------|------------------------|----------|---------------|------------|---------------------|--------|
| Oral | | | | | | Data waiving | |
| Dermal | | | | | | Data waiving | |
| Inhalation (gases) | LC50 | Equivalent to OECD 403 | 1300 ppm | 4 h | Rat (male) | Experimental value | |

Conclusion

Toxic if inhaled.

Not classified as acute toxic in contact with skin

Not classified as acute toxic if swallowed

Corrosion/irritation

carbon monoxide, compressed

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|-------------------|--------|--------|---------------|------------|---------|---------------------|--------|
| Eye | | | | | | Data waiving | |
| Skin | | | | | | Data waiving | |

Conclusion

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

carbon monoxide, compressed

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|--------------------|--------|--------|---------------|------------------------|---------|---------------------|--------|
| Skin | | | | | | Data waiving | |
| Inhalation (gases) | | | | | | Data waiving | |

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

carbon monoxide, compressed

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|--------------------|-----------|--------|---------|-------------------------|---------------------------------------|-------------------------------|--------------|---------------------|
| Oral | | | | | | | | Data waiving |
| Dermal | | | | | | | | Data waiving |
| Inhalation (gases) | LOAEC | | 200 ppm | Heart and blood vessels | Cardiac and blood circulation effects | 72 weeks (daily, 5 days/week) | Rat (female) | Experimental value |

Conclusion

Causes damage to organs through prolonged or repeated exposure if inhaled.

Not classified as sub-chronically toxic in contact with skin

Not classified as sub-chronically toxic if swallowed

Mutagenicity (in vitro)

carbon monoxide, compressed

No (test) data available

Mutagenicity (in vivo)

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[carbon monoxide, compressed](#)

No (test)data available

Carcinogenicity

[carbon monoxide, compressed](#)

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Organ | Effect |
|--------------------|-----------|------------------------|---------|-------------------------------|--------------|---------------------|-------|------------------------|
| Inhalation (gases) | NOAEC | Equivalent to OECD 453 | 200 ppm | 72 weeks (daily, 5 days/week) | Rat (female) | Experimental value | | No carcinogenic effect |

Reproductive toxicity

[carbon monoxide, compressed](#)

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|------------------------|-----------|--------|---------|----------------------------|----------------|-----------|-------|---------------------|
| Developmental toxicity | NOAEC | | 65 ppm | 12 days (gestation, daily) | Mouse | No effect | | Experimental value |
| Maternal toxicity | NOAEC | | 500 ppm | 12 days (gestation, daily) | Mouse (female) | No effect | | Experimental value |
| Effects on fertility | | | | | | | | Data waiving |

Conclusion CMR

May damage the unborn child.

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Toxicity other effects

[carbon monoxide, compressed](#)

No (test)data available

Chronic effects from short and long-term exposure

[carbon monoxide, compressed](#)

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Cardiac and blood circulation effects. Impairment of the nervous system.

SECTION 12: Ecological information

12.1 Toxicity:

[carbon monoxide, compressed](#)

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|--------|------------|----------|-------------|-------------|------------------|---------------------|
| Acute toxicity fishes | LC50 | | 672.6 mg/l | 96 h | Pisces | | | QSAR |
| Acute toxicity invertebrates | LC50 | | 307.5 mg/l | 48 h | Daphnia sp. | | | QSAR |
| Toxicity algae and other aquatic plants | EC50 | | 124.4 mg/l | 96 h | Algae | | | QSAR |

Conclusion

Slightly harmful to fishes

Slightly harmful to invertebrates (Daphnia)

Slightly harmful to algae

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2 Persistence and degradability:

[carbon monoxide, compressed](#)

Half-life soil (t1/2 soil)

| Method | Value | Primary degradation/mineralisation | Value determination |
|--------|-------|------------------------------------|----------------------|
| | | | Not applicable (gas) |

Conclusion

Biodegradability: not applicable

12.3 Bioaccumulative potential:

[carbon monoxide, compressed](#)

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------|-------|-------------|-----------------------------|
| | | 1.78 | | Weight of evidence approach |

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Conclusion

Low potential for bioaccumulation (Log Kow < 4)

12.4 Mobility in soil:

carbon monoxide, compressed

Volatility (Henry's Law constant H)

| Value | Method | Temperature | Remark | Value determination |
|--------------------------------|--------|-------------|--------|---------------------|
| 115561 atm m ³ /mol | | 25 °C | | Calculated value |

Conclusion

Not applicable (gas)

12.5 Results of PBT and vPvB assessment:

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6 Other adverse effects:

carbon monoxide, compressed

Global warming potential (GWP)

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).

16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing dangerous substances).

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

Refer to manufacturer/supplier for information on recovery/ recycling. 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.

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 | 1016 |
|-----------|------|

14.2 UN proper shipping name:

| | |
|----------------------|-----------------------------|
| Proper shipping name | Carbon monoxide, compressed |
|----------------------|-----------------------------|

14.3 Transport hazard class(es):

| | |
|------------------------------|-----|
| Hazard identification number | 263 |
| Class | 2 |
| Classification code | 1TF |

14.4 Packing group:

| | |
|---------------|---------|
| Packing group | |
| Labels | 2.3+2.1 |

14.5 Environmental hazards:

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

14.6 Special precautions for user:

| | |
|--------------------|-------|
| Special provisions | |
| Limited quantities | none. |

Rail (RID)

14.1 UN number:

| | |
|-----------|------|
| UN number | 1016 |
|-----------|------|

14.2 UN proper shipping name:

| | |
|----------------------|-----------------------------|
| Proper shipping name | Carbon monoxide, compressed |
|----------------------|-----------------------------|

14.3 Transport hazard class(es):

| | |
|------------------------------|-----|
| Hazard identification number | 263 |
|------------------------------|-----|

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| | |
|---------------------|-----|
| Class | 2 |
| Classification code | 1TF |

14.4 Packing group:

| | |
|---------------|---------------|
| Packing group | |
| Labels | 2.3+2.1 (+13) |

14.5 Environmental hazards:

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

14.6 Special precautions for user:

| | |
|--------------------|-------|
| Special provisions | |
| Limited quantities | none. |

Inland waterways (ADN)

14.1 UN number:

| | |
|-----------|------|
| UN number | 1016 |
|-----------|------|

14.2 UN proper shipping name:

| | |
|----------------------|-----------------------------|
| Proper shipping name | Carbon monoxide, compressed |
|----------------------|-----------------------------|

14.3 Transport hazard class(es):

| | |
|---------------------|-----|
| Class | 2 |
| Classification code | 1TF |

14.4 Packing group:

| | |
|---------------|---------|
| Packing group | |
| Labels | 2.3+2.1 |

14.5 Environmental hazards:

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

14.6 Special precautions for user:

| | |
|--------------------|-------|
| Special provisions | |
| Limited quantities | none. |

Sea (IMDG/IMSBC)

14.1 UN number:

| | |
|-----------|------|
| UN number | 1016 |
|-----------|------|

14.2 UN proper shipping name:

| | |
|----------------------|-----------------------------|
| Proper shipping name | Carbon monoxide, compressed |
|----------------------|-----------------------------|

14.3 Transport hazard class(es):

| | |
|-------|-----|
| Class | 2.3 |
|-------|-----|

14.4 Packing group:

| | |
|---------------|-----------|
| Packing group | |
| Labels | 2.3 + 2.1 |

14.5 Environmental hazards:

| | |
|--|----|
| Marine pollutant | - |
| Environmentally hazardous substance mark | no |

14.6 Special precautions for user:

| | |
|--------------------|-------|
| Special provisions | |
| Limited quantities | none. |

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

| | |
|--------------------------|----------------|
| Annex II of MARPOL 73/78 | Not applicable |
|--------------------------|----------------|

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

| | |
|-----------|-----------|
| Transport | Forbidden |
| UN number | 1016 |

14.2 UN proper shipping name:

| | |
|----------------------|-----------------------------|
| Proper shipping name | Carbon monoxide, compressed |
|----------------------|-----------------------------|

14.3 Transport hazard class(es):

| | |
|-------|-----|
| Class | 2.3 |
|-------|-----|

14.4 Packing group:

| | |
|---------------|--|
| Packing group | |
| Labels | |

14.5 Environmental hazards:

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

14.6 Special precautions for user:

| | |
|---|----|
| Special provisions | A2 |
| Passenger and cargo transport: limited quantities: maximum net quantity per packaging | |

SECTION 15: Regulatory information

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

European legislation:

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VOC content Directive 2010/75/EU

| VOC content | Remark |
|-------------|----------------------------|
| | Not applicable (inorganic) |

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 |
|-----------------|---|--|
| carbon monoxide | Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows: - Reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5 - Reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6 | Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30:1. Shall not be placed on the market, or used, — as substances, — as constituents of other substances, or, — in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: — either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or, — the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows: "Restricted to professional users".2. By way of derogation, paragraph 1 shall not apply to: (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC; (b) cosmetic products as defined by Directive 76/768/EEC; (c) the following fuels and oil products: — motor fuels which are covered by Directive 98/70/EC, — mineral oil products intended for use as fuel in mobile or fixed combustion plants, — fuels sold in closed systems (e.g. liquid gas bottles); (d) artists' paints covered by Directive 1999/45/EC; (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date. |
| carbon monoxide | 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. | 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: — 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.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: "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. |

National legislation The Netherlands

| | |
|---|---|
| Waste identification (the Netherlands) | LWCA (the Netherlands): KGA category 06 |
| SZW - List of reprotoxic substances (development) | Hazardous to the foetus |
| Waterbezwaarlijkheid | 5 |

National legislation Germany

| | |
|------------------------|---|
| Schwangerschaft Gruppe | B |
| WGK | 1; Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2) |
| TA-Luft | 5.2.7.1.3 |

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2 Chemical safety assessment:

Publication date: 2015-06-25

Reference number: 3400

Product number: 10448

Revision number: 0000

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carbon monoxide, compressed

A chemical safety assessment has been performed.

SECTION 16: Other information

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

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

H331 Toxic if inhaled.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure if inhaled.

(*) = 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 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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