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

1.1. Product identifier

| | |
|----------------------|-----------------|
| Trade name | Carbon monoxide |
| Chemical description | Carbon monoxide |
| CAS N° | 630-08-0 |
| CE N° | 211-128-3 |
| Index N° | 006-001-00-2 |
| Registration n° | 01-211948165-39 |
| Chemical formula | CO |

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

| | |
|--------------------------|--|
| Relevant identified uses | Industrial and professional Contact supplier for more information on uses |
| Uses advised against | Consumer use not recommended |

1.3. Details of the supplier of the safety data sheet

| | |
|------------------------|---|
| Company identification | MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier |
| Phone number | +41 (0) 26 676 94 94 |
| E-mail address | info@multigas.ch |

1.4. Emergency telephone numbers


145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51
+41 (0) 26 676 94 94 (Multigas)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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





| | | |
|-------------------------|--|-------|
| Physical hazards | Flammable gases, Category 1 | H220 |
| | Gases under pressure : Compressed gas | H280 |
| Health hazards | Acute toxicity (inhalation: gas) Category 3 | H331 |
| | Reproductive toxicity, Category 1A | H360D |
| | Specific target organ toxicity — Repeated exposure, Category 1 | H372 |

| | | |
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For the complete H-sentences texts mentioned in that chapter, refer to Section 16


2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

| | |
|---------------------------------|--|
| Hazard pictograms |     |
| | GHS02 GHS04 GHS06 GHS08 |
| Signal word | Danger |
| Hazard statements | |
| 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 |
| Precautionary statements | |
| P202 | Do not handle until all safety precautions have been read and understood |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking |
| P260 | Do not breathe gas, vapours |
| P304+P340+P315 | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention |
| P308+P313 | IF exposed or concerned: Get medical advice |
| P377 | Leaking gas fire: Do not extinguish, unless leak can be stopped safely |
| P381 | In case of leakage, eliminate all ignition sources |
| P410+P403 | Protect from sunlight. Store in a well-ventilated place |
| P405 | Store locked up |

2.3. Other hazards

None

| | | |
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SECTION 3: Composition/information on ingredients

3.1. Substances

| Name | Product identifier | Concentration | Classification |
|-----------------|---|---------------|---|
| Carbon monoxide | (CAS-No.) 630-08-0 (EC-No.) 211-128-3 (EC Index-No.) 006-001-00-2 (Registration-No.) 01-2119480165-39 | ≤ 100% | Flam. Gas 1, H220 Press. Gas (Comp.), H280 Acute Tox. 3 (Inhalation: gas), H331 Repr. 1A, H360D STOT RE 1, H372 |

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

Contains no other components or impurities which will influence the classification of the product

3.2. Mixtures

Not established

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|--------------------------------|---|
| General advice | See a doctor. Show this safety data sheet to the attending physician |
| In case of inhalation | In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor |
| In case of skin contact | Adverse effects not expected from this product |
| In case of eyes contact | Adverse effects not expected from this product |
| In case of ingestion | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor |

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

Symptoms may include dizziness, headache, nausea and loss of coordination
Delayed adverse effects possible
Refer to section 11


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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|---------------------------------------|--|
| Suitable extinguishing media | All known extinguishing agents can be used |
| Unsuitable extinguishing media | Do not use water jet to extinguish |

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5.2. Special hazards arising from the substance or mixture

| | |
|--------------------------------------|--|
| Specific hazards | In case of fire or excessive heat, hazardous combustion products may be produced Exposure to fire may cause containers to rupture/explode |
| Hazardous combustion products | In case of fire or excessive heat, hazardous combustion products may be produced such as : carbon oxides |

5.3. Additional information

Cool endangered receptacles with water spray jet from a protected position

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, spray mists or gases
Provide adequate ventilation
Evacuate personnel to a safe place
Personal protective equipment, see section 8

6.2. Environmental precautions

Try to stop the leak

6.3. Methods and material for containment and cleaning up

Ventilate area

6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid breathing vapour or mist
Keep away from sources of ignition - No smoking
Provide adequate ventilation
For precautions, see section 2.2

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place
Content under pressure

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| | |
|--|-------------------|
| Odour | No data available |
| Odour threshold | No data available |
| pH | No data available |
| Melting point / Freezing point | -205°C |
| Boiling point | -191.5°C |
| Flash point | No data available |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Explosive limits | 10.9 -76% |
| Vapour pressure [20°C] | No data available |
| Vapour pressure [50°C] | No data available |
| Vapour density | No data available |
| Relative density, liquid (water=1) | 0.79 |
| Relative density, gas (air=1) | 0.97 |
| Water solubility | 27 mg/l (20°C) |
| Partition coefficient n-octanol/water (Log Kow) | No data available |
| Auto-ignition temperature | 609°C |
| Decomposition temperature | No data available |
| Viscosity | No data available |
| Explosive properties | No data available |
| Oxidising properties | No data available |

9.2. Other information

| | |
|----------------------------------|-----------|
| Molar mass | 28 g/mole |
| Critical temperature [°C] | -140°C |
| Relative vapour density | 0.97 |

SECTION 10: Stability and reactivity
10.1. Reactivity


No data available

10.2. Chemical stability

Stable under recommended storage conditions

10.3. Possibility of hazardous reactions

Can form explosive mixture with air

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May react violently with oxidants

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces

10.5. Incompatible materials

Air, Oxidisers

For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: Toxicological information

11.1. Chemical safety assessment

| | |
|---|--|
| Acute toxicity | Toxic if inhaled |
| Skin corrosion/irritation | No data available |
| Serious eye damage/irritation | No data available |
| Respiratory or skin sensitisation | No data available |
| Germ cell mutagenicity | No data available |
| Carcinogenicity | No data available |
| Reproductive toxicity | May damage the unborn child |
| STOT-single exposure – Target organ(s) | Suppresses the oxygen uptake by red blood cells - blood |
| STOT-repeated exposure | Causes damage to organs through prolonged or repeated exposure - heart |
| Ingestion hazard | No data available |

SECTION 12: Ecological information

12.1. Toxicity


| | |
|-------------------|-------------------|
| Assessment | No data available |
|-------------------|-------------------|

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

| | | |
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12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------|---|
| Product | <p>Must not be discharged to atmosphere</p> <p>Burn in a chemical incinerator equipped with an afterburner and scrubber</p> <p>Return surplus and non-recyclable solutions to a licensed waste disposal company</p> |
| Contaminated container | <p>Eliminate as unused product</p> <p>Contact the supplier if instructions are needed</p> |
| OMoD Code | <p>16 05 04</p> <p>Gases in pressure containers containing dangerous substances</p> |

SECTION 14: Transport information

14.1. UN number

| Transport par road/rail ADR / RID | Transport by sea IMDG | Transport by air IATA |
|--------------------------------------|--------------------------|--------------------------|
| 1016 | 1016 | 1016 |

14.2. UN proper shipping name

| Transport par road/rail ADR / RID | Transport by sea IMDG | Transport by air IATA |
|--------------------------------------|----------------------------|----------------------------|
| Carbon monoxide compressed | Carbon monoxide compressed | Carbon monoxide compressed |


14.3. Transport hazard class(es)

Labelling



ADR/RID
IMDG
IATA

2.3 : Toxic gases
2.1 : Flammable gases

| | | |
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14.4. Packing group

| | |
|-------------------------|-----------------|
| ADR/RID IMDG IATA | Not established |
|-------------------------|-----------------|

14.5. Environmental hazards

| | |
|--------------------|------|
| ADR/RID | None |
| IMDG | None |
| ICAO-TI / IATA-DGR | None |

14.6. Special precautions for user

No data available

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

Not applicable

SECTION 15: Regulatory information

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


This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

15.2. Chemical safety assessment

A CSA has been carried out

SECTION 16: Other information

| | |
|-----------------------------------|---|
| Indication of changes | Revised safety data sheet in accordance with commission regulation (EU) No 2015/830 |
| Abbreviations and acronyms | <p>ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>CAS : Chemical Abstract Service number (USA)</p> <p>CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</p> <p>CSA : Chemical Safety Assessment</p> <p>EIGA : European Industrial Gases Association</p> <p>EINECS : European Inventory of Existing Commercial Chemical Substances</p> <p>EN : European Standard</p> <p>ATE : Acute Toxicity Estimate</p> <p>IATA : International Air Transport Association</p> <p>IMDG Code : International Maritime Dangerous Goods Code</p> <p>LC50 : Lethal Concentration to 50 % of a test population</p> |

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|-----------|---|
| OMoD : | Swiss Ordinance on the movement of waste |
| PBT : | Persistent, Bioaccumulative and Toxic |
| PPE: | Personal Protection Equipment |
| REACH : | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID : | Regulations concerning the international carriage of dangerous goods by rail |
| RMM : | Risk Management Measures |
| STOT-SE : | Specific Target Organ Toxicity - Single Exposure |
| UN : | United Nations |
| vPvB : | Very Persistent and Very Bioaccumulative |
| WGK: | Water Hazards Class |

Full text of H, EUH and P statements used in sections 2 and 3

Hazard statements

| | |
|-------|--|
| 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 |

Precautionary statements

| | |
|----------------|---|
| P202 | Do not handle until all safety precautions have been read and understood |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking |
| P260 | Do not breathe gas, vapours |
| P304+P340+P315 | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention |
| P308+P313 | IF exposed or concerned: Get medical advice |
| P377 | Leaking gas fire: Do not extinguish, unless leak can be stopped safely |
| P381 | In case of leakage, eliminate all ignition sources |
| P410+P403 | Protect from sunlight. Store in a well-ventilated place |
| P405 | Store locked up |

Disclaimer of liability

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide