



العالمية للغازات

International Gases Company

Safety Data Sheet

According to Regulation (EC) No. 1272/2008, Regulation (EC) 1907/2006

1. Identification of the substance/mixture and of the responsible company

1.1. Product Identifier: Carbon Monoxide (CO)

CARBON OXIDE; CARBON OXIDE (CO); CARBONE (OXYDE DE); CARBONIC OXIDE; CARBONIO (OSSIDO DI); EXHAUST GAS; FLUE GAS; KOHLENMONOXID; KOHLENOXYD; KOOLMONOXYDE; OXYDE DE CARBONE; WEGLA TLENEK UN 1016; CO

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

Identified uses: Used as a reducing agent in metallurgical processes; in organic synthesis; in the manufacture of metal carbonyls.

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

International Acetyls Company (IAC)
PO Box 12021
Post Coe 31961
Jubail Industrial City
Kingdom of Saudi Arabia

Website: www.sipchem.com/en/affiliates.htm

1.4. Emergency telephone number: 00966-359 9985 (24 hours)

2. Hazards Identification

Carbon Monoxide CAS 630-08-0 Purity: >99%

Trace Impurities: Ethanol

2.1. Classification of the substance or mixture:

Classification of Labeling in accordance with the CLP Regulations:

Index No	International Chemical Identification	EC No	CAS No	Classification		Labeling			Specific Conc. Limits, M-factors	Notes
				Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard statement Code(s)		
006-001-00-2	Carbon Monoxide	211-128-3	630-08-0	F+, R12 T, R23 T, R48/23 R61	H220 H280 H331 H360	GHS02 GHS04 GHS06 GHS08	H220 H280 H331 H360	H360D H372	100	E

Classification according to Regulation 1272/2008/EC (CLP)

Basis for Classification This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation, GHS)

CARBON MONOXIDE (630-08-0)**Symbol(s):**

Signal Word: Danger

Hazard(s):

H220: Extremely flammable gas

H280: Contains gas under pressure, may explode when heated

H331: Toxic if inhaled

H360D: May damage the unborn child.

H372: Causes damage to organs through prolonged or repeated exposure

Prevention:

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash ... thoroughly after handling.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P270: Do not eat, drink or smoke when using this product.

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ... on this label).

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P410+P403: Protect from sunlight. Store in a well-ventilated place.

Disposal:**P501:** Dispose of contents/container to ...**SAFETY DATA SHEET**

Emergency overview: DANGER! POISON! Colorless gas; odorless. Acute Effects: chemical asphyxia, frostbite, headache, mental confusion, vomiting, giddiness, exhaustion, collapse, unconsciousness, coma, convulsions, death, cerebral edema, angina pectoris, myocardial infarction.

Highly flammable Compressed gas!**Potential chronic health effects:****CARCINOGENIC EFFECTS:** No reported carcinogenic effects.**MUTAGENIC EFFECTS:** No assigned mutagenic effect classification.**REPRODUCTION TOXICITY:** Reproductive effects reported in mammals and invitro tests. May harm unborn fetus.

2.2. Label: See table above.

2.3. Other hazards: None known.

3. Composition/information on ingredients

Formula	CO
CAS-No.	630-08-0
Index-No.	607-022-00-5
EC-No.	211-128-3
Mol Wt.	28 g/mol

4. First Aid Measures

4.1. Description of first aid measures

Eye Contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: Wash out mouth and water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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

Symptoms of overexposure may result in changes in body temperature, changes in blood pressure, nausea, vomiting, loss of appetite, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, hallucinations, pain in extremities, tremors, loss of coordination, hearing loss, visual disturbances, eye damage, suffocation, blood disorders, heart damage, nerve damage, birth defects, brain damage

SAFETY DATA SHEET according to Regulation (EC) No. 1272/2008, Regulation (EC) No.1907/2006

Carbon Monoxide, rev 1 2/2012

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

Symptoms of poisoning resulting from carbon monoxide exposure include respiratory disorders, diarrhea and shock. Carbon monoxide competes with oxygen for hemoglobin binding sites and has a 240-fold affinity for these sites compared to oxygen. In addition to oxygen deficiency further disability is produced by the formation of carboxymyoglobin in muscles, to produce disturbances in muscle metabolism, particularly that of the heart. Hyperbaric oxygen is the most efficient treatment of carbon monoxide and dramatically reduces the biological half-life of carboxyhemoglobin. Although less effective, 100% oxygen by mask is useful if hyperbaric facilities are not available. Stimulant drugs are not indicated.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Use dry chemical, CO₂, water spray (fog) or foam

Unsuitable extinguishing media: Do not use water jet.

5.2. Special hazards arising from the substance or mixture:

Flammable. In a fire or if heated, a pressure increase will occur and the container may burst, with risk of subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Firewater runoff to sewer may create fire or explosion hazard.

5.3. Advice for fire fighters:

Special protective equipment for fire fighters: Fire fighters must wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Further information: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving a personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Do not allow fire extinguishing water to contaminate surface or groundwater systems. Ventilate to disperse carbon monoxide gasses in area.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Evacuate the danger zone; follow emergency precautions. Secure emergency assistance immediately. Avoid contact with the material; do not breath gas, vapors or aerosol. If possible, provide additional ventilation.

Advice for emergency responders: Do not take action without proper training and emergency equipment. See Section 8 for additional information. Evacuate surrounding areas. Eliminate all ignition sources including flares and all open flames. Avoid all contact with spiller material. Ventilate area thoroughly. Maintain adequate ventilation and wear appropriate respiratory protection.

6.2. Environmental precautions:

Avoid dispersal of released material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and materials for containment:

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Ventilate area thoroughly. Use spark-proof tools and explosion proof equipment. Contaminated absorbent material may adsorb CO and pose the similar hazard(s) as the released product.

6.4. Reference to other sections:

See disposal instruction 13 and exposure controls Section 8.

7. Handling and storage

7.1. Precautions for safe handling:

Observe all label precautions. Use appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate air supply respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on protection against fire and explosion: Keep away from flames and sources of ignition – including static.

7.2. Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Pressurized container. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3. Specific end uses:

No other additional special end uses are anticipated.

8. Exposure controls/personal protection

8.1. Control parameters:

Personal, workplace or environmental monitoring may be necessary to ensure exposures are below recommended and legal limits.

Exposure Limits

CARBON MONOXIDE (630-08-0)

ACGIH: 25 ppm TWA

NIOSH: 35 ppm TWA; 40 mg/m³ TWA

200 ppm Ceiling 22.9 mg/m³ Ceiling
1200 ppm IDLH

OSHA (US): 50 ppm TWA; 55 mg/m³ TWA

Mexico: 50 ppm TWA LMPE-PPT; 55 mg/m³ TWA LMPE-PPT

EU 30 ppm MAK

Exposure Limits for Chemicals which may be generated during processing

This material has no components listed.

8.2. Exposure controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or

statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures:

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Discard contaminated clothing or wash thoroughly before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is required.

Glove material: butyl or nitrile rubber
Glove thickness: 0.7 mm or thicker
Break through time: > 240 minutes

Other protective equipment: Flame retardant antistatic protective clothing

Respiratory protection: Carbon monoxide does not have odor warning properties. Only SCBA or an air supply respirator should be worn if a risk assessment indicates that respiratory protection is necessary. Air purifying respirators may not be effective. Respirator selection must be based upon known or measured levels of exposure.

Environmental exposure controls: Ventilation and engineering controls to protect workers and ventilate work area to at or below recommended employee exposure levels. Technical measures are preferred over use of personal protective equipment. Environmental controls, such as scrubber or thermal oxidizer may be required to prevent process releases to the atmosphere. Do not release into the atmosphere—risk of fire or explosion.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Physical State: Gas	Appearance: Not available
Color: colorless	Physical Form: compressed gas
Odor: odorless	Odor Threshold: Not available
Taste: tasteless	Melting Point: -199 °C
Boiling Point: -192 °C liquid	LEL: 12.0 - 12.5 %
UEL: 74 %	Autoignition: 609 - 650 °C
Vapor Pressure: 760 mmHg -191 °C	Vapor Density (air = 1): 0.968

Density: 1.250 g/L @ 0 °C	Water Solubility: 2.3 % 20 °C
Viscosity: 0.01657 cP 0 °C	Molecular Weight: 28.01
Molecular Formula: C-O	

Solvent Solubility

Soluble: alcohol, benzene, acetic acid, ethyl acetate, chloroform, cuprous chloride solutions

10. Stability and reactivity

- 10.1. Reactivity:
Will not polymerize. Vapors may form explosive mixture with air.
- 10.2. Chemical stability:
Stable at normal temperature and pressures.
- 10.3. Possibility of hazardous reactions:
Will not polymerize. May decompose, exotherm or catch fire with mixed with incompatible materials.
- 10.4. Conditions to avoid:
Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers. Do not store at elevated temperatures.
- 10.5. Incompatible materials:
Combustible materials, halogens, lithium, metal oxides, metals, oxidizing materials
- 10.6. Hazardous decomposition products:
Carbon oxides.

11. Toxicological information

- 11.1. Information on toxicological effects:
- | | |
|--|-----------------------------|
| <u>Acute oral toxicity LD50 rat:</u> | N/A ingestion gas unlikely |
| <u>Acute inhalation toxicity LC50 rat:</u> | 1800 ppm/4 hr (RTECS) |
| <u>Inhalation (man) TC_{LO}:</u> | 150 ppm/24h (RTECS) |
| <u>Inhalation (man) LC_{LO}:</u> | 4000 ppm/30m (RTECS) |
| <u>Inhalation (man) TC_{LO}:</u> | 650 ppm/45m(RTECS) |
| <u>Acute dermal toxicity LD50 rabbit:</u> | N/A no data available |
| <u>Skin irritation:</u> | No skin irritation reported |
| <u>Eye irritation:</u> | No eye irritation reported |

<u>Sensitization:</u>	<i>Not sensitizing</i>
<u>Genotoxicity:</u>	
Mutagenicity:	2500 ppm/10 min mouse (RTECS)
Reproductive effects	65-200 ppm Guinea pig/pregnant inhalation 180 ppm Rabbit/pregnant 24 hr See RTECS for additional data
<u>Specific target organ toxicity - single exposure:</u>	<i>Blood, haemopoetic system</i>
<u>Specific target organ toxicity - repeated exposure:</u>	<i>Blood, haemopoetic system</i>
<u>Aspiration hazard:</u>	<i>Product is toxic by inhalation</i>

11.2. Additional information:

Further data: Headache, nausea in high concentrations. Handle using good occupational and environmental health practices.

12. Ecological information

12.1. Toxicity

<u>Toxicity in fish LC50:</u>	1.5 ppm/1-6 hr/minnows and sunfish
<u>Toxicity to daphnia and other aquatic invertebrates:</u>	<i>No data</i>
<u>Toxicity to algae:</u>	<i>No data</i>
<u>Toxicity to bacteria:</u>	<i>No data</i>

12.2. Persistence and degradability:

Readily biodegradable

12.3. Bio accumulative potential:

Not expected (compressed gas)

12.4. Mobility in soil:

No information available.

12.5. Results of PBT and vPvB assessment:

Not classified as PBT or vPvB.

12.6. Other adverse effects:

Additional ecological information: Do not allow product to enter surface waters, wastewater or soil.

13. Disposal considerations

Waste treatment methods: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some residual product (i.e. cylinders and containers not completely empty). This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Subject to disposal regulations in the U.S.-- EPA 40 CFR 262 Hazardous Waste Number(s): D001.

14. Transport Information

The transport regulations are cited according to international and/or harmonized transport regulations. Possible national deviations and country specific requirements are not considered.

U.S. DOT

SAFETY DATA SHEET according to Regulation (EC) No. 1272/2008, Regulation (EC) No.1907/2006

Carbon Monoxide, rev 1 2/2012

Shipping Name: Carbon monoxide, compressed
Hazard Class: 2.3

UN/NA #: UN1016
Required Label(s): 2.3, 2.1
Additional Info.: Toxic-Inhalation Hazard Zone D

TDG/ADR Information
Shipping Name: Carbon monoxide, compressed
Hazard Class: 2.3
UN #: UN1016
Required Label(s): 2.3, (2.1)

ADR Tunnel Code Restrictions
This list contains tunnel restriction codes for those substances and/or chemically related entries which are found in chapter 3.2 of the ADR regulations.

CARBON MONOXIDE (630-08-0) Restriction(s): B/D [UN1016]

RID Information
Shipping Name: Carbon monoxide, compressed
Hazard Class: 2
UN #: UN1016
Required Label(s): 2.3, 2.1, (+13)

IATA/ICAO Information
Shipping Name: Carbon monoxide, compressed
Hazard Class: 2.3
UN #: UN1016

IMDG Information
Shipping Name: Carbon monoxide, compressed
Hazard Class: 2.3
UN #: UN1016
Required Label(s): 2.1

15. Regulatory information

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

U.S. Federal Regulations

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** Yes **Reactive:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
CARBON MONOXIDE	630-08-0	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of SAFETY DATA SHEET according to Regulation (EC) No. 1272/2008, Regulation (EC) No.1907/2006
Carbon Monoxide, rev 1 2/2012

1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

CARBON MONOXIDE (630-08-0)

0.1 %

Germany Water Classification

CARBON MONOXIDE (630-08-0)

ID Number 257, hazard class 1 - low hazard to waters

REACH List of Substances Subject to Restriction (Annex XVII) - Reg. (EU) No. 1907/2006

This list includes substances subject to Restriction. Under REACH, these substances are subject to restrictions on manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

CARBON MONOXIDE (630-08-0)

Use restricted. See item 30.

Symbol(s)

F+ Extremely Flammable

T Toxic

Risk Phrases

R12 Extremely flammable.

R23 Toxic by inhalation.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R61 May cause harm to unborn child.

Safety Phrases

S53 Avoid exposure - obtain special instructions before use.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
CARBON MONOXIDE	630-08-0	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

Globally Harmonized System of Classification and Labelling (GHS)

The listed component(s) of this material have been checked for country-specific published classifications according to the Globally Harmonized System of Classification and Labelling (GHS).

European Union GHS Classifications

Classifications below according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP).

CARBON MONOXIDE (630-08-0)

Flammable gases - Category 1

H220 Extremely flammable gas.

Gases under pressure

H280 Contains gas under pressure, may explode when heated.

Acute toxicity - Inhalation - Category 3

H331 Toxic if inhaled.

Reproductive Toxicity - Category 1A

H360D May damage the unborn child.

Specific target organ toxicity - Repeated exposure - Category 1

H372 Causes damage to organs through prolonged or repeated exposure.

European Union GHS Labelling Information

Labelling information below is according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP).

CARBON MONOXIDE (630-08-0)

Symbol(s):



Signal Word: Danger

Hazard(s):

H220: Extremely flammable gas

H280: Contains gas under pressure, may explode when heated

H331: Toxic if inhaled

H360D: May damage the unborn child.

H372: Causes damage to organs through prolonged or repeated exposure

Prevention:

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash ... thoroughly after handling.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P270: Do not eat, drink or smoke when using this product.

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ... on this label).

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P410+P403: Protect from sunlight. Store in a well-ventilated place.

Disposal:

P501: Dispose of contents/container to ...

Japan GHS Classifications

Classifications below published under Japan's Chemicals Classification Program according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

CARBON MONOXIDE (630-08-0)

Flammable gases - Category 1

H220 Extremely flammable gas.

SAFETY DATA SHEET according to Regulation (EC) No. 1272/2008, Regulation (EC) No.1907/2006

Carbon Monoxide, rev 1 2/2012

Gases under pressure - Compressed gas

H280 Contains gas under pressure, may explode when heated.

Acute toxicity - Inhalation - Gas - Category 3

H331 Toxic if inhaled.

Toxic to reproduction - Category 1A

H360 May damage fertility or the unborn child.

Specific target organ toxicity/Single exposure Category 1

H370 Causes damage to cardiovascular system and/or nervous system.

Specific target organ toxicity - Repeated exposure - Category 2

H373 May cause damage to blood and/or heart through prolonged or repeated exposure.

Japan GHS Labelling Information

Labelling information below according to classifications published by Japan's Chemicals Classification Program according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

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P264: Wash ... thoroughly after handling.

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Disposal:

P501: Dispose of contents/container to ...

Korea GHS Classifications (SV)

Classifications below published by Korea's Ministry of Environment (MOE), Ministry of Employment and Labor (MOEL) or Office of National Emergency Management (NEMA, physical hazards only).

CARBON MONOXIDE (630-08-0)

MOEL:

Flammable gases - Category 1

H220 Extremely flammable gas.

Gases under pressure

H280 Contains gas under pressure, may explode when heated.

Acute toxicity - Inhalation - Gas - Category 3

H331 Toxic if inhaled.

Reproductive Toxicity - Category 1A

H360 May damage fertility or the unborn child.

Specific target organ toxicity - Single exposure - Category 1

H370 Causes damage to circulatory system and/or nervous system.

Specific target organ toxicity - Repeated exposure - Category 2

H373 May cause damage to blood and/or heart through prolonged or repeated exposure.

Korea GHS Labelling Information

Labelling information below according to classifications published by Korea's Ministry of Environment (MOE), Ministry of Employment and Labor (MOEL) or Office of National Emergency Management (NEMA, physical hazards only).

CARBON MONOXIDE (630-08-0) Symbol(s):



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Disposal:

P501: Dispose of contents/container to ...

New Zealand GHS Classifications

Classifications below according to the Environmental Risk Management Authority's (ERMA) Hazardous Substances and New Organisms (HSNO) Act, as amended.

CARBON MONOXIDE (630-08-0)

Flammable gases - Category 1

H220 Extremely flammable gas.

Acute toxicity - Inhalation - Category 3

H331 Toxic if inhaled.

Reproductive Toxicity - Category 1

H360 May damage fertility or the unborn child.

Specific target organ toxicity - Repeated exposure - Inhalation - Category 1

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

Hazardous to aquatic environment - chronic hazard - Category 4

H413 May cause long lasting harmful effects to aquatic life.

New Zealand GHS Labelling Information

Labelling information below according to classifications published by New Zealand's Environmental Risk Management Authority's (ERMA) Hazardous Substances and New Organisms (HSNO) Act, as amended.

CARBON MONOXIDE (630-08-0) Symbol(s):



Signal Word: Danger

Hazard(s):

H220: Extremely flammable gas

H331: Toxic if inhaled

H360: May damage fertility or the unborn child

H372: Causes damage to organs through prolonged or repeated exposure

H413: May cause long lasting harmful effects to aquatic life

Prevention:

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash ... thoroughly after handling.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P270: Do not eat, drink or smoke when using this product.

P273: Avoid release to the environment.

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ... on this label).

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

Taiwan GHS Classifications

Information below presented according to Taiwan's Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs. This agency has published a series of standards (CNS 15030 1-27 Chemical Classification and Labelling) which provide guidance on classification and labelling of chemicals according to GHS.

CARBON MONOXIDE (630-08-0)

Taiwan:

Flammable gases - Category 1

Gases under pressure

Acute toxicity - Inhalation - Category 3

Reproductive Toxicity - Category 1

H220 Extremely flammable gas.

H280 Contains gas under pressure, may explode when heated.

H331 Toxic if inhaled.

H360 May damage fertility or the unborn child.

Specific target organ toxicity - Repeated exposure - Category 1

H372 Causes damage to organs through prolonged or repeated exposure.

Taiwan GHS Labelling Information

Labelling information below according to classifications published by Taiwan's Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs. This agency has published a series of standards (CNS 15030 1-27 Chemical Classification and Labelling) which provide guidance on classification and labelling of chemicals according to GHS.

CARBON MONOXIDE (630-08-0) Symbol(s):



Signal Word: Danger

Hazard(s):

H220: Extremely flammable gas

H280: Contains gas under pressure, may explode when heated

H331: Toxic if inhaled

H360: May damage fertility or the unborn child

H372: Causes damage to organs through prolonged or repeated exposure

Prevention:

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash ... thoroughly after handling.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P270: Do not eat, drink or smoke when using this product.

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ... on this label).

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

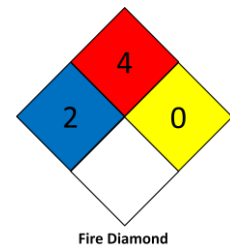
P410+P403: Protect from sunlight. Store in a well-ventilated place.

Disposal:

P501: Dispose of contents/container to ...

15.2. **Chemical Safety Assessment:**

Sipchem has not conducted a chemical safety assessment for this product.



16. Other information

16.1. Training Advice:

Provide safety information, instruction and training to operators handling Carbon Monoxide.

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