



Air and Sulfur Dioxide

Safety Data Sheet E-7114

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 06-23-2020

Revision date: 08-03-2023

Supersedes: 07-07-2023

Version: 1.2

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : Air and Sulfur Dioxide
Other means of identification : Sulfur Dioxide: 6.3 - 30.34%
Air (BAL)
Product group : Core Products

1.2. Recommended use and restrictions on use

Recommended uses and restrictions : Industrial use; Use as directed.

1.3. Supplier

Linde Canada inc.
500 — 5015 Spectrum Way
Mississauga - Canada L4W 0E4
T 1-905-803-1600 - F 1-905-803-1682
www.lindecana.ca

1.4. Emergency telephone number

Emergency number : 1-800-363-0042
Call emergency number 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product.
For routine information, contact your supplier or Linde sales representative.

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-CA classification

Gases under pressure : Compressed gas H280
Acute toxicity (inhalation:gas) Category 4 H332
Skin corrosion/irritation, Category 1B H314
Serious eye damage/eye irritation, Category 1 H318

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms :   

Signal word : DANGER

Hazard statements : CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
CAUSES SEVERE SKIN BURNS AND EYE DAMAGE
HARMFUL IF INHALED
CORROSIVE TO THE RESPIRATORY TRACT (This statement supercedes H335)

Precautionary statements : Do not handle until all safety precautions have been read and understood
Do not breathe gas/vapours
Wash exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present

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and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor
Call a POISON CENTER/doctor if you feel unwell
Specific treatment (see First aid measures on this label)
Wash contaminated clothing before reuse.
Store locked up
Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation
Use and store only outdoors or in a well-ventilated place.
Use a back flow preventive device in the piping.
Use only with equipment rated for cylinder pressure.
Close valve after each use and when empty.
Protect from sunlight when ambient temperature exceeds 52°C (125°F).

2.3. Other hazards

Other hazards which do not result in classification : Asphyxiant in high concentrations.

2.4. Unknown acute toxicity (GHS CA)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	CAS No.	% (Vol)	Common Name (synonyms)
Air	(CAS No) 132259-10-0	69.66 – 93.7	Air, compressed / Air, refrigerated liquid / Ambient air
Sulfur dioxide	(CAS No) 7446-09-5	6.3 – 30.34	Sulphur dioxide / Sulphurous anhydride / Sulfur(IV) oxide / Sulfur dioxide, anhydrous / Sulfur oxide (SO2)

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries : No additional information available
Most Important Symptoms/Effects : Asphyxiant in high concentrations.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

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Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.

Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

Other information : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized.).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions, Protective Equipment and Emergency Procedures : General measures : Ensure adequate ventilation. Personal Precautions, Protective Equipment and Emergency Procedures : EVACUATE ALL PERSONNEL FROM AFFECTED AREA. Use appropriate protective equipment. If leak is on user's equipment, be certain to purge piping before attempting repairs. If leak is on a container or container valve contact the closest Linde Canada location.

6.2. Methods and materials for containment and cleaning up

For containment : Try to stop release if safe to do so.

Methods for cleaning up : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 52 °C (125 °F). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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Sulfur dioxide (7446-09-5)		
USA - ACGIH	ACGIH OEL STEL [ppm]	0.25 ppm
USA - OSHA	OSHA PEL TWA [1]	13 mg/m ³
USA - OSHA	OSHA PEL TWA [2]	5 ppm
Canada (Quebec)	VECD (OEL STEL)	13 mg/m ³
Canada (Quebec)	VECD (OEL STEL) [ppm]	5 ppm
Canada (Quebec)	VEMP (OEL TWA)	5.2 mg/m ³
Canada (Quebec)	VEMP (OEL TWA) [ppm]	2 ppm
Alberta	OEL STEL	13 mg/m ³
Alberta	OEL STEL [ppm]	5 ppm
Alberta	OEL TWA	5.2 mg/m ³
Alberta	OEL TWA [ppm]	2 ppm
British Columbia	OEL STEL [ppm]	5 ppm
British Columbia	OEL TWA [ppm]	2 ppm
Manitoba	OEL STEL [ppm]	0.25 ppm
New Brunswick	OEL STEL	13 mg/m ³
New Brunswick	OEL STEL [ppm]	5 ppm
New Brunswick	OEL TWA	5.2 mg/m ³
New Brunswick	OEL TWA [ppm]	2 ppm
New Foundland & Labrador	OEL STEL [ppm]	0.25 ppm
Nova Scotia	OEL STEL [ppm]	0.25 ppm
Nunavut	OEL STEL [ppm]	5 ppm
Nunavut	OEL TWA [ppm]	2 ppm
Northwest Territories	OEL STEL [ppm]	5 ppm
Northwest Territories	OEL TWA [ppm]	2 ppm
Ontario	OEL STEL	10.4 mg/m ³
Ontario	OEL STEL [ppm]	5 ppm
Ontario	OEL TWA	5.2 mg/m ³
Ontario	OEL TWA [ppm]	2 ppm
Prince Edward Island	OEL STEL [ppm]	0.25 ppm
Québec	VECD (OEL STEL)	13 mg/m ³
Québec	VECD (OEL STEL) [ppm]	5 ppm
Québec	VEMP (OEL TWA)	5.2 mg/m ³
Québec	VEMP (OEL TWA) [ppm]	2 ppm
Saskatchewan	OEL STEL [ppm]	5 ppm
Saskatchewan	OEL TWA [ppm]	2 ppm
Yukon	OEL STEL	13 mg/m ³
Yukon	OEL STEL [ppm]	5 ppm
Yukon	OEL TWA	13 mg/m ³
Yukon	OEL TWA [ppm]	5 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Alarm detectors should be used when toxic gases may be released. Product to be handled in a closed system. Ensure exposure is below occupational exposure limits (where available).

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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment

: Gloves. Face shield. Safety glasses.



Hand protection

: Wear work gloves when handling containers. Wear heavy rubber gloves where contact with product may occur.

Eye protection

: Provide readily accessible eye wash stations and safety showers. Wear safety glasses with side shields. Safety eye wear 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. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

Respiratory protection

: **Respiratory protection:** Use air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below OEL (if applicable). Select in accordance with provincial regulations, local bylaws or guidelines. Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection

: Wear cold insulating gloves when transfilling or breaking transfer connections.

Other information

: **Other protection :** Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of flame resistant anti-static safety clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(a) Physical state	: Gas
(b) Colour	: Colourless.
(c) Odour	: No data available.
Odour threshold	: No data available
(d) Melting point	: No data available
Freezing point	: No data available
(e) Boiling point	: No data available
(f) Flammability	: Non flammable
(g) Flammability (solid, gas)	:
(h) Flash point	: No data available
(i) Auto-ignition temperature	: No data available
(j) Decomposition temperature	: No data available
(k) pH	: Not applicable.
(l) Viscosity, kinematic	: Not applicable.
(m) Solubility	: Water: No data available
(n) Partition coefficient – n-octanol/water [log Pow/log Kow]	: Not applicable.
(o) Vapour pressure	: Not applicable.
(p) Density	:
Relative gas density	: No data available
(r) Particle characteristics	: No data available
(v) Oxidizing properties	: None.
(w) Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

Reactivity : No reactivity hazard other than the effects described in sub-sections below.
Chemical stability : Stable under normal conditions.
Conditions to avoid : Avoid moisture in installation systems.

SECTION 11: Toxicological information

11.1 Likely routes of exposure : Inhalation

11.2 Symptoms related to the physical, chemical, and toxicological characteristics : No additional information available

11.3 Delayed and immediate effects and chronic effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : HARMFUL IF INHALED.
Skin corrosion/irritation : CAUSES SEVERE SKIN BURNS.
pH: Not applicable.
Serious eye damage/irritation : CAUSES SERIOUS EYE DAMAGE.
pH: Not applicable.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

11.4 Toxicity

Air and Sulfur Dioxide	
LC50 inhalation rat (ppm)	No data available
ATE CA (Gases)	4152.933 ppmv/4h

Sulfur dioxide (7446-09-5)	
LC50 inhalation rat (ppm)	1260 ppm/4h

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

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12.2. Persistence and degradability

Air and Sulfur Dioxide

Persistence and degradability : No ecological damage caused by this product.

Sulfur dioxide (7446-09-5)

Persistence and degradability : Not applicable for inorganic gases.

Air (132259-10-0)

Persistence and degradability : No ecological damage caused by this product.

12.3. Bioaccumulative potential

Air and Sulfur Dioxide

Log Pow : Not applicable.

Log Kow : Not applicable.

Bioaccumulative potential : No ecological damage caused by this product.

Sulfur dioxide (7446-09-5)

Log Pow : Not applicable for inorganic gases.

Bioaccumulative potential : No data available.

Air (132259-10-0)

Log Pow : Not applicable for inorganic gases.

Bioaccumulative potential : No ecological damage caused by this product.

12.4. Mobility in soil

Air and Sulfur Dioxide

Mobility in soil : No data available.

Log Pow : Not applicable.

Log Kow : Not applicable.

Sulfur dioxide (7446-09-5)

Log Pow : Not applicable for inorganic gases.

Ecology - soil : Because of its high volatility, the product is unlikely to cause ground or water pollution.

Air (132259-10-0)

Log Pow : Not applicable for inorganic gases.

Ecology - soil : No ecological damage caused by this product.

12.5. Other adverse effects

Other adverse effects : May cause pH changes in aqueous ecological systems.

Effect on the ozone layer : None.

SECTION 13: Disposal considerations

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : UN1956

TDG Primary Hazard Classes : 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gases

Proper shipping name : COMPRESSED GAS, N.O.S.

Explosive Limit and Limited Quantity Index : 0.125 L

14.2. Air and sea transport

IMDG

UN-No. (IMDG) : 1956

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Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.
Class (IMDG) : 2.2 - Non-flammable, non-toxic gases

IATA

UN-No. (IATA) : 1956
Proper Shipping Name (IATA) : COMPRESSED GAS, N.O.S.
Class (IATA) : 2 - Gases

SECTION 15: Regulatory information

15.1. National regulations

Sulfur dioxide (7446-09-5)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Sulfur dioxide (7446-09-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Air (132259-10-0)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: Other information

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Indication of changes:

Training advice : Users of breathing apparatus must be trained.

Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Linde Canada asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

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SDS Canada (GHS) - Linde NEW

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