



Air/Nitrogen Dioxide Mixture

Safety Data Sheet E-7016

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

Date of issue: 10-15-1979

Revision date: 03-26-2018

Supersedes: 10-15-2016

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : Air/Nitrogen Dioxide Mixture
Other means of identification : Mixture of Nitrogen dioxide in Air
Product group : Standard Mixtures

1.2. Recommended use and restrictions on use

Recommended uses and restrictions : Industrial use

1.3. Supplier

Praxair Canada inc.
1200 – 1 City Centre Drive
Mississauga - Canada L5B 1M2
T 1-905-803-1600 - F 1-905-803-1682
www.praxair.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 Praxair sales representative.

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-CA classification

Compressed gas H280

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms :



GHS04

Signal word : WARNING

Hazard statements : CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
MAY CAUSE FROSTBITE.

Precautionary statements : Do not handle until all safety precautions have been read and understood
Keep away from clothing and other combustible materials
Keep valves and fittings free from oil and grease
Use and store only outdoors or in a well-ventilated area.
In case of fire: Stop leak if safe to do so
Protect from sunlight when ambient temperature exceeds 52°C (125°F).
Use a back flow preventive device in the piping.
Close valve after each use and when empty.
Use only with equipment rated for cylinder pressure.
Do not open valve until connected to equipment prepared for use.
Approach suspected leak area with caution.

2.3. Other hazards

Other hazards not contributing to the : Asphyxiant in high concentrations.

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classification

2.4. Unknown acute toxicity (GHS-CA)

No data available

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	99.72 - 99.9999	Air, compressed / Air, refrigerated liquid / Ambient air
Nitrogen dioxide	(CAS No) 10102-44-0	0.0001 - 0.28	Nitrogen oxide (NO ₂) / Nitrogen peroxide / Nitrogen(IV) oxide / Nitrogen oxide

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : 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 eye contact : 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..

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

No additional information available

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. 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

- Fire hazard : Oxidizing agent; vigorously accelerates combustion. Contact with flammable materials may cause fire or explosion.
- Reactivity : No reactivity hazard other than the effects described in sub-sections below.
- 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.).

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : **WARNING: High-pressure gas.** Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Remove all sources of ignition. If safe to do so. Reduce gas with fog or fine water spray. Stop flow of product if safe to do so. Ventilate area or move container to a well-ventilated area. Before entering the area, especially a confined area, test for sufficient oxygen.

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up : This material is an Asphyxiant Gas. Any leaks should be handled by Emergency Response personnel. For assistance call your supplier.

6.3. Reference to other sections

For further information refer to section 8: Exposure controls/personal protection

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 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, 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

Nitrogen dioxide (10102-44-0)		
USA - ACGIH	ACGIH TLV-TWA (ppm)	0.2 ppm
USA - OSHA	OSHA PEL (Ceiling) (mg/m ³)	9 mg/m ³
USA - OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm
Canada (Quebec)	VEMP (mg/m ³)	5.6 mg/m ³
Canada (Quebec)	VEMP (ppm)	3 ppm
Alberta	OEL STEL (mg/m ³)	9.4 mg/m ³
Alberta	OEL STEL (ppm)	5 ppm
Alberta	OEL TWA (mg/m ³)	5.6 mg/m ³
Alberta	OEL TWA (ppm)	3 ppm
British Columbia	OEL Ceiling (ppm)	1 ppm

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Nitrogen dioxide (10102-44-0)		
Manitoba	OEL TWA (ppm)	0.2 ppm
New Brunswick	OEL STEL (mg/m ³)	9.4 mg/m ³
New Brunswick	OEL STEL (ppm)	5 ppm
New Brunswick	OEL TWA (mg/m ³)	5.6 mg/m ³
New Brunswick	OEL TWA (ppm)	3 ppm
New Foundland & Labrador	OEL TWA (ppm)	0.2 ppm
Nova Scotia	OEL TWA (ppm)	0.2 ppm
Nunavut	OEL STEL (ppm)	5 ppm
Nunavut	OEL TWA (ppm)	3 ppm
Northwest Territories	OEL STEL (ppm)	5 ppm
Northwest Territories	OEL TWA (ppm)	3 ppm
Ontario	OEL TWA (ppm)	3 ppm
Prince Edward Island	OEL TWA (ppm)	0.2 ppm
Québec	VEMP (mg/m ³)	5.6 mg/m ³
Québec	VEMP (ppm)	3 ppm
Saskatchewan	OEL STEL (ppm)	5 ppm
Saskatchewan	OEL TWA (ppm)	3 ppm
Yukon	OEL Ceiling (mg/m ³)	9 mg/m ³
Yukon	OEL Ceiling (ppm)	5 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).

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 : Wear goggles and a face shield when transfilling or breaking transfer connections. Wear safety glasses with side shields. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines. 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.

Skin and body protection : Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible.

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Respiratory protection	: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA). Choose in accordance with provincial directives and regulations. Selection should also be based on the current CSA standards Z94.4, "Selection, care and use of respirators." Respirators should be approved by NIOSH and MSHA. Respiratory protection: Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." 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

Physical state	: Gas
Appearance	: No data available
Colour	: Colourless.
Odour	: No data available.
Odour threshold	: No data available
pH	: Not applicable.
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Vapour pressure	: Not applicable.
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Relative density of saturated gas/air mixture	: No data available
Density	: No data available
Relative gas density	: No data available
Solubility	: Water: No data available
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Viscosity, kinematic (calculated value) (40 °C)	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Flammability (solid, gas)	: Non flammable

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9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : No reactivity hazard other than the effects described in sub-sections below.
Chemical stability : Stable under normal conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Nitrogen dioxide (10102-44-0)

LC50 inhalation rat (ppm)	57.5 ppm/4h
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified 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

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Air/Nitrogen Dioxide Mixture

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

Nitrogen dioxide (10102-44-0)

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/Nitrogen Dioxide Mixture

Log Pow : Not applicable.
Log Kow : Not applicable.
Bioaccumulative potential : No ecological damage caused by this product.

Nitrogen dioxide (10102-44-0)

Log Pow : Not applicable for inorganic gases.

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Nitrogen dioxide (10102-44-0)	
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/Nitrogen Dioxide Mixture	
Mobility in soil	No data available.
Log Pow	Not applicable.
Log Kow	Not applicable.

Nitrogen dioxide (10102-44-0)	
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

Effect on the ozone layer : None.

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Explosive Limit and Limited Quantity Index : 0.125 L

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1956
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

SECTION 15: Regulatory information

15.1. National regulations

Air/Nitrogen Dioxide Mixture	
Listed on the Canadian DSL (Domestic Substances List)	

Nitrogen dioxide (10102-44-0)	
Listed on the Canadian DSL (Domestic Substances List)	

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15.2. International regulations

Nitrogen dioxide (10102-44-0)

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 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

Date of issue : 15/10/1979
Revision date : 26/03/2018
Supersedes : 15/10/2016

Indication of changes:

Training advice : Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard.
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.

Praxair 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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