



Safety Data Sheet

Material Name: NITROUS OXIDE

SDS ID: 00232341

Section 1-PRODUCT AND COMPANY IDENTIFICATION

Material Name

NITROUS OXIDE

Synonyms

MTG MSDS 70; NITROGEN OXIDE; NITROGEN (I) OXIDE; NITROGEN OXIDE (N₂O); NITROUS OXIDE, COMPRESSED; DINITROGEN OXIDE; DINITROGEN MONOXIDE; HYPONITROUS ACID ANHYDRIDE; FACTITIOUS AIR; LAUGHING GAS; UN 1070; N₂O;

Product Description

Classification determined in accordance with Compressed Gas Association standards.

Product Use

Industrial and Specialty Gas Applications.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

SPECIALTY CHEMICAL PRODUCTS

1407 Pennsylvania Ave.

South Houston, TX 77587

General Information: 713-944-0900

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 1-703-527-3887 (Call collect)

Section 2 HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Reproductive Toxicity - Category 1A

Specific Target Organ Toxicity - Single Exposure - Category 3

Specific Target Organ Toxicity - Repeated Exposure - Category 1 (Hematopoietic System , Nervous System)

Specific Target Organ Toxicity - Repeated Exposure - Category 2 (blood , liver)

GHS Label Elements

Symbol(s)



Signal Word

Danger

Hazard Statement(s)

May damage fertility or the unborn child.

May cause respiratory irritation. May cause drowsiness or dizziness.

Causes damage to organs through prolonged or repeated exposure.

May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

Obtain special instructions before use.

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



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Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response

IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor if you feel unwell.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards

Rapid release of compressed gas may cause frostbite. Contact with combustible material may cause fire.

Section 3 COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
10024-97-2	NITROUS OXIDE	100.0

Section 4 FIRST AID MEASURES

Inhalation

Remove person to fresh air and keep comfortable for breathing. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Remove contaminated clothing, jewelry, and shoes immediately. In case of frostbite, wash with plenty of water; do not remove clothing. Get immediate medical attention.

Eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

Frostbite, nausea, vomiting, difficulty breathing, headache, dizziness, drowsiness, loss of coordination, fatigue, coma, death.

Delayed

No information on significant adverse effects.

Note to Physicians

For inhalation, consider oxygen.

Section 5- FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Small fires: regular dry chemical, carbon dioxide. Large fires: Use water spray, fog or regular foam.



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Unsuitable Extinguishing Media

Do not direct water at source of leak or safety devices; icing may occur.

Special Hazards Arising from the Chemical

May cause or intensify fire; oxidizer. Sustaining combustion. Containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

Nitrogen. oxygen.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not direct water at source of leak or safety devices; icing may occur. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

Special Protective Equipment and Precautions for Firefighters

Wear personal protective clothing and equipment such as self-contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Stop leak if possible without personal risk. Avoid contact with combustible materials. Keep unnecessary people away, isolate hazard area and deny entry. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Ventilate closed spaces before entering.

Environmental Precautions

Avoid release to the environment.

Section 7 HANDLING AND STORAGE

Precautions for Safe Handling

Keep valves and fittings free from oil and grease. Keep/Store away from clothing/combustible materials. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid release to the environment.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Keep separated from incompatible substances. Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.105. U.S. OSHA 29 CFR 1910.101.

Incompatible Materials

combustible materials, metals, bases, reducing agents, peroxides, metal salts, metal oxides

Section 8- EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

NITROUS OXIDE	1002497-2
ACGIH:	50 ppm TWA



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NIOSH:	25 ppm TWA (over the time exposed to waste anesthetic gas); 46 mg/m3 TWA (over the time exposed to waste anesthetic gas)
Mexico:	50 ppm TWA [VLE-PPT]

ACGIH - Threshold Limit ValuesBiological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

For the gas: Protective clothing is not required, but recommended. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. For Unknown Concentrations or Immediately Dangerous to Life or Health -. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Glove Recommendations

For the gas: Protective gloves are not required, but recommended. For the liquid: Wear chemical resistant, insulated gloves.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Not available	Physical State	Not available
Odor	Not available	Color	Not available
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	Not available
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	Not available
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	Not available
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	Not available



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Water Solubility	Not available	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Molecular Weight	Not available		

Solvent Solubility
Soluble

sulfuric acid, alcohol, alkali solutions, ether, oils

Section 10- STABILITY AND REACTIVITY

Reactivity

May explode if heated in closed container.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. Avoid contact with combustible materials.

Incompatible Materials

combustible materials, metals, bases, reducing agents, peroxides, metal salts, metal oxides

Hazardous decomposition products

oxides of nitrogen

Section 11 TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

Frostbite, nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, loss of coordination, fatigue, coma.

Skin Contact

Frostbite, blisters.

Eye Contact

Frostbite, blurred vision.

Ingestion

Ingestion of a gas is unlikely.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

NITROUS OXIDE (1002497-2)

Inhalation LC50 Mouse >500000 ppm 4 h (no deaths occurred)

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

Frostbite, nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, loss of coordination, fatigue, coma.



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Delayed Effects

No information on significant adverse effects.

Irritation/Corrosivity Data

May cause skin irritation and eye irritation.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

NITROUS OXIDE	1002497-2
ACGIH:	A4 - Not Classifiable as a Human Carcinogen

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available.

Reproductive Toxicity

May damage fertility or the unborn child.

Specific Target Organ Toxicity Single Exposure

central nervous system.

Specific Target Organ Toxicity Repeated Exposure

No target organs identified.

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

Section 12 ECOLOGICAL INFORMATION

Ecotoxicity

Avoid release to the environment.

Component Analysis Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility

No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 TRANSPORT INFORMATION

US DOT Information:

No Classification assigned.

International Bulk Chemical Code



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This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 REGULATORY INFORMATION

U.S. Federal Regulations

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), 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) reporting categories

Reproductive Toxicity; Specific Target Organ Toxicity

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
NITROUS OXIDE	1002497-2	Yes	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)



WARNING

This product can expose you to chemicals including NITROUS OXIDE, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

NITROUS OXIDE	1002497-2
Repro/Dev. Tox	developmental toxicity, 8/1/2008
	female reproductive toxicity, initial date 8/1/08

Component Analysis - Inventory

NITROUS OXIDE (1002497-2)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Section 16- OTHER INFORMATION

Summary of Changes

Updated: 02/17/2016

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA -



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Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL), KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

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