

Safety Data Sheet



Division of Fresno Oxygen

Barnes Welding Supply/Barnes Specialty Gases

Division of Fresno Oxygen

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Document #: G-136

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Section 1: Product and Company Identification

Barnes Welding Supply / Barnes Specialty Gases - Division of Fresno Oxygen

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FOR CHEMICAL EMERGENCIES DURING TRANSPORTATION ONLY CALL INFOTRAC 1-800-535-5053

Product Name: Racing Grade Nitrous Oxide
Part Number: NO RAC56

Synonyms:
Recommended Use:
Usage Restrictions:

Section 2: Hazards Identification



Hazard Classification:
Gases Under Pressure
Oxidizing Gas (Category 1)

Hazard Statements:
Contains gas under pressure; may explode if heated
May cause or intensify fire; oxidizer

Precautionary Statements

Prevention:
Keep reduction valves/valves and fittings free from oil and grease.
Keep and store away from clothing and combustible materials.

Response:
In case of fire: Stop leak if safe to do so.

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Nitrous Oxide	10024-97-2	99
Sulfur Dioxide	7446-09-5	1

	Chemical Substance	Chemical Family	Trade Names
Nitrous Oxide	NITROUS OXIDE	Inorganic gases	DINITROGEN MONOXIDE; FACTITIOUS AIR; LAUGHING GAS; HYPONITROUS ACID ANHYDRIDE; NITROGEN (I) OXIDE; NITROGEN OXIDE; STCC 4904340; UN 1070; NITROGEN OXIDE (N2O); DINITROGEN OXIDE; NITROUS OXIDE, COMPRESSED; N2O
Sulfur Dioxide	SULFUR DIOXIDE	Inorganic gases	SULFUROUS ACID ANHYDRIDE; SULFUROUS OXIDE; SULPHUR DIOXIDE; SULFUROUS ANHYDRIDE; FERMENTICIDE LIQUID; SULFUR DIOXIDE(SO2); SULFUR OXIDE; SULFUR OXIDE(SO2); STCC 4904290; UN 1079; O2S

Section 4: First Aid Measures

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Nitrous Oxide	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. Get immediate medical attention.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Sulfur Dioxide	Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.	Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Nitrous Oxide	Non-flammable. Use suitable extinguishing media for surrounding fire.	Non-flammable	• Non-flammable
Sulfur Dioxide	Non-flammable. Use suitable extinguishing media for surrounding fire.	None known	• Non-flammable • Non-flammable

Section 6: Accidental Release Measures

	Personal Precautions	Environmental Precautions	Methods for Containment
Nitrous Oxide	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Avoid contact with combustible materials.	No adverse effects expected.	Stop leak if possible without personal risk.
Sulfur Dioxide	Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet.	Avoid contamination of environment.	Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material.

	Methods for Cleanup	Other Information
Nitrous Oxide	Stop leak, evacuate and ventilate area.	None
Sulfur Dioxide	Stop leak, evacuate area. Contact emergency personnel.	Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

Section 7: Handling and Storage

	Handling	Storage
Nitrous Oxide	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.105.	Keep separated from incompatible substances.
Sulfur Dioxide	Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125F (52C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.	Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier.

Section 8: Exposure Controls/Personal Protection

	Exposure Guidelines
Nitrous Oxide	NITROUS OXIDE: 50 ppm ACGIH TWA 25 ppm (46 mg/m3) NIOSH recommended TWA (halogenated anesthetic gas)
Sulfur Dioxide	SULFUR DIOXIDE: 2 ppm (5 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 5 ppm (13 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5 ppm (13 mg/m3) OSHA TWA 2 ppm ACGIH TWA 5 ppm ACGIH STEL 2 ppm (5 mg/m3) NIOSH recommended TWA 10 hour(s) 5 ppm (13 mg/m3) NIOSH recommended STEL

Engineering Controls
Handle only in fully enclosed systems.

	Eye Protection	Skin Protection	Respiratory Protection
Nitrous Oxide	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.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Non-flammable
Sulfur Dioxide	Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	For the gas: Wear appropriate chemical resistant clothing. For the liquid: Wear appropriate protective, cold insulating clothing.	Non-flammable

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

	Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Nitrous Oxide	Gas	Clear	Colorless	N/A	Gas	Sweet odor	Sweet taste
Sulfur Dioxide	Gas	Clear	Colorless	N/A	Gas	Irritating odor	N/A

	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Nitrous Oxide	Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable
Sulfur Dioxide	Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable

	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
Nitrous Oxide	-128 F (-89 C)	-132 F (-91 C)	760 mmHg @ -88 C	1.53 (Air=1)	Not applicable	59% @ 25 C	Not applicable	Not available	Not applicable	0.0145 cP @ 25 C

	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
Sulfur Dioxide	14 F (-10 C)	-99 F (-73 C)	2432 mmHg @ 20 C	2.26 (Air=1)	1.462 @ -10 C	22.8% @ 0 C	Acidic in solution	3-5 ppm	>1 (butyl acetate=1)	Not available

	Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
Nitrous Oxide	44.01	N2-O	1.8122 g/L @ 25 C	Not available	Not applicable	Not applicable	Soluble: Sulfuric acid, alcohol, alkali solutions, ether, oils
Sulfur Dioxide	64.06	S-O2	0.169	Not available	Not available	Not applicable	Soluble: Alcohol, acetic acid, sulfuric acid, ether, chloroform, benzene, sulfuryl chloride, nitrobenzenes, toluene, acetone

Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
Nitrous Oxide	Stable at normal temperatures and pressure. Decomposes to nitrogen and oxygen at high temperatures	Stable at normal temperatures and pressure. Decomposes to nitrogen and oxygen at high temperatures	Combustible materials, metals, bases, reducing agents, peroxides, metal salts, metal oxides, hydrogen
Sulfur Dioxide	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Combustible materials, metals, bases, oxidizing materials, halogens, metal carbide, metal oxides, peroxides, reducing agents, potassium, sodium, nitril chloride, acrolein, metal oxides, carbide

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
Nitrous Oxide	Oxides of nitrogen	Will not polymerize.
Sulfur Dioxide	Forms sulfurous acid solution on reaction with water.	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

	Oral LD50	Dermal LD50	Inhalation
Nitrous Oxide	Not available	Not available	Nausea, vomiting, symptoms of drunkenness, hyperactivity or drowsiness, hearing loss, suffocation, death
Sulfur Dioxide	LC50, 1 hr, rat = 2520 ppm	Not available	Allergic reactions, burns, toxic

	Eye Irritation	Skin Irritation	Sensitization
Nitrous Oxide	Liquid: frostbite, blurred vision	Liquid: blisters, frostbite	Potentially fatal if inhaled, central nervous system depression, difficulty breathing
Sulfur Dioxide	Corrosive, burns	Corrosive, burns	TERATOGEN/EMBRYOTOXIN - can harm the unborn child, based on human information. Acute toxicity, Category 3, Inhalation; H331: Toxic if inhaled. Skin corrosion, Category 1B; H314: Causes severe skin burns and eye damage.

Chronic Effects

	Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Nitrous Oxide	IARC: Human Inadequate Evidence, Animal Inadequate Evidence, Group 3 (Anesthetics, volatile); ACGIH: A4 -Not Classifiable as a Human Carcinogen	Available.	Available.	No data
Sulfur Dioxide	IARC: Human Inadequate Evidence, Animal Limited Evidence, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen	Available.	Available.	No data

Section 12: Ecological Information

Fate and Transport

	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Nitrous Oxide	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available
Sulfur Dioxide	Fish toxicity: 3000 ug/L 0.667-0.833 hour(s) (Avoidance) Atlantic menhaden (Brevortia tyrannus) Invertebrate toxicity: Not available Algal toxicity: 500 ug/L 6 day(s) (Cellular) Green algae (Rhizoclonium hieroglyphicum) Phyto toxicity: Not available Other toxicity: >=150 ug/L NR hour(s) (Biochemical) Duckweed (Lemna minor)	Not available	Not available	Not available

Section 13: Disposal Considerations

Nitrous Oxide	Dispose in accordance with all applicable regulations.
Sulfur Dioxide	Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

DOT Information For This Mixture

Shipping Name	Compressed gas, oxidizing, n.o.s. (Nitrous Oxide, Sulfur Dioxide)
UN Number	UN3156
Hazard Class	2.2
Hazard Information	Non-Flammable Gas Oxidizer Sub

Individual Component Information

	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Nitrous Oxide	Nitrous oxide	UN1070	2.2	Not applicable	2.2, 5.1	N/A	N/A	N/A
Sulfur Dioxide	Sulfur dioxide	UN1079	2.3	Not applicable	2.3, 8	Forbidden	Forbidden	Toxic-Inhalation Hazard Zone C

Canadian Transportation of Dangerous Goods

	Shipping Name	UN Number	Class	Packing Group / Risk Group
Nitrous Oxide	Nitrous oxide	UN1070	2.2, 5.1	Not applicable
Sulfur Dioxide	Sulfur dioxide	UN1079	2.3, 8	Not applicable

Section 15: Regulatory Information

U.S. Regulations

	CERCLA Sections	SARA 355.30	SARA 355.40
Nitrous Oxide	Not regulated.	Not regulated.	Not regulated.
Sulfur Dioxide	Not regulated.	500 LBS TPQ	500 LBS RQ

SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
Nitrous Oxide	Yes	No	No	No	Yes
Sulfur Dioxide	Yes	Yes	No	No	Yes

SARA 372.65

Nitrous Oxide	Not regulated.
Sulfur Dioxide	Not regulated.

OSHA Process Safety

Nitrous Oxide	Not regulated.
Sulfur Dioxide	1000 LBS TQ

State Regulations

	CA Proposition 65
Nitrous Oxide	WARNING: This product can expose you to chemicals including Nitrous Oxide which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov .
Sulfur Dioxide	WARNING: This product can expose you to chemicals including sulfur dioxide, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov .

Canadian Regulations

	WHMIS Classification
Nitrous Oxide	A.C.
Sulfur Dioxide	AD1

National Inventory Status

	US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Nitrous Oxide	Listed on inventory.	Not listed.	Not determined.
Sulfur Dioxide	Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

	NFPA Rating
Nitrous Oxide	HEALTH=1 FIRE=0 REACTIVITY=0
Sulfur Dioxide	HEALTH=3 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard