



SAFETY DATA SHEET

This Safety Data Sheet complies with the Canadian Hazardous Product Regulations, the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910 (OSHA HCS)

1. Product and Supplier Identification

- 1.1 **Product:** Sherlock Gasleak Detector
- 1.2 **Product Use:** Metalworking Product
- 1.3 **Producer:** Bison International
Dr. A.F. Philipsstraat 9,
NL-4462 EW Goes
Netherlands
Supplier: JSA Sales,
75A Clipper Street,
Coquitlam, B.C.
Canada, V3K 6X2
- 1.4 **Emergencies (24-hour number):** +31 113 235700
Facsimile: +31 113 232077
Telephone: +1 (604) 525-4774

2. Hazards Identification

2.1 Classification of product or mixture
Note to reader: This product in an untested mixture and GHS classification is based on the classification of the ingredients and their concentrations. Proprietary ingredients , if any, do NOT exhibit any health effects not listed in this SDS.

GHS Classification: Oxidizing Gases, Category 1
Gases Under Pressure (Liquefied Gas)
Specific Target Organ Toxicity- Single Exposure (Respiratory)
Category 3
Reproductive Toxicity, Category 2 (inhalation)

2.2 GHS Label Elements, including precautionary statements

Pictogram:



Signal Word: Danger

GHS Hazard Statements: H270: May cause or intensify fire, oxidizer
H280: Contains gas under pressure, may explode if heated
H336: May cause drowsiness or dizziness
H362: Suspected of damaging fertility or the unborn child

GHS Precautionary Statements:

- Prevention:** P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P220: Keep away from clothing and other combustible materials.
P244: Keep valves and fittings free from oil and grease.
P261: Avoid breathing gas
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective equipment.
- Response:** P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313: IF exposed or concerned: Get medical attention.
P312: Call a POISON CENTRE or doctor if you feel unwell.
P370+P376: In case of fire: Stop leak 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 and container according to instructions in Section 13.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: Simple asphyxiant

2.4 Additional Information

Primary Routes of Entry:

- Skin Contact: Yes (frostbite, expanding liquefied gas)
Skin Absorption: No
Eye Contact: No
Ingestion: No
Inhalation: Yes

Target Organs: May cause damage to the following organs: the reproductive system, upper respiratory tract, central nervous system (CNS).

Emergency Overview: Colourless gas with a slightly sweet odour. Oxidizer! Contact with combustible materials may cause fire or explosion. Explosive when mixed with fuels. Compressed gas! Confined space hazard. Gas can replace oxygen in the air. May be a reproductive hazard! Can cause embryotoxic, fetotoxic effects, based on human information.

Effects of Short-Term (Acute) Exposure:

Inhalation: Occupational exposure to nitrous oxide usually ranges between 400 and 3000 ppm. Exposure to concentrations of 100,000 ppm and higher can affect behavior and the ability to carry out mental tasks. This effect has also been demonstrated in volunteers exposed to a very low concentration (50 ppm for 3-4 hours) At levels of 330,000 ppm, volunteers have shown reduced sensitivity to pain. At levels of 400,000 to 700,000 ppm reversible blood system changes occur including suppressed bone marrow activity. Exposure to higher concentrations may result in numbness or a drunkenness feeling.

Skin Contact: No ill effects expected except if spray directed at skin, frostbite may occur.

Eye Contact: See skin contact.

Ingestion: Not a route of entry for gases.

Effects of Long-Term (Chronic) Exposure: Repeated exposure to nitrous oxide can damage the peripheral nervous system. A condition called polyneuropathy has been observed. While this condition may improve over time, it is not completely reversible. Symptoms may include: numbness, a burning or prickling sensation on the skin, poor muscle coordination and clumsiness.

If exposure continues, weakness, disturbances in walking, impotence and signs of degeneration of the spinal cord can occur.

Exposure to high concentrations of nitrous oxide can suppress bone marrow activity decreasing the number of circulating blood cells.

Based on human information, prolonged exposure to nitrous oxide can cause embryotoxic, fetotoxic and teratogenic effects.

Medical Conditions Aggravated By Exposure: None known.

3. Composition

3.4 Mixture composition

Component	% (w/w)	GHS Classification
Nitrous Oxide CAS No. 10024-97-2 (propellant)	50 - 70	Oxidizing Gas, Category 1 Gas under pressure STOT-SE (respiratory), Category 3 Reproductive Toxicity, Category 2
1,2-Propylene Glycol CAS No 57-55-6	10 - 20	No classification.
Non-hazardous ingredients	10 - 20	Not applicable

4. First Aid Measures

4.1 Description of First Aid Measures

General advice: The main route of entry is by inhalation. Expanding gases in contact with the skin can cause frostbite and skin burns. Do not spray on skin or into eyes. Provide general supportive measures (comfort, warmth, rest).

Consult a doctor and/or the nearest Poison Control Centre for all serious exposures.

All first aid procedures should be periodically reviewed by a doctor familiar with the material and its conditions of use in the workplace.

In case of eye contact: If sprayed directly into the eye causing frostbite, quickly remove victim from source of contamination. Immediately and briefly flush with lukewarm, gently flowing water until the chemical is removed. DO NOT attempt to re-warm the eye(s). Cover both eyes with a sterile dressing. DO NOT allow victim to drink alcohol or smoke. Quickly transport victim to an emergency care facility.

In case of skin contact: If sprayed directly on skin causing frostbite, quickly remove victim from source of contamination and briefly flush with lukewarm, gently flowing water until the chemical is removed. DO NOT attempt to re-warm the affected area on site. DO NOT rub area or apply dry heat. Transport to a medical facility if the frostbite is severe.

In case of inhalation: Take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Remove the source of contamination or move victim to fresh air and obtain medical advice.

If ingestion: Not a route of entry.

4.2 Most important symptoms and effects, both acute and delayed

Effects of Short-Term (Acute) Exposure:

Inhalation: Occupational exposure to nitrous oxide usually ranges between 400 and 3000 ppm. Exposure to concentrations of 100,000 ppm and higher can affect behavior and the ability to carry out mental tasks. This effect has also been demonstrated in volunteers exposed to a very low concentration (50 ppm for 3-4 hours) At levels of 330,000 ppm, volunteers have shown reduced sensitivity to pain. At levels of 400,000 to 700,000 ppm reversible blood system changes occur including suppressed bone marrow activity. Exposure to higher concentrations may result in numbness or a drunkenness feeling.

Skin Contact: No ill effects expected except if spray directed at skin, frostbite may occur.

Eye Contact: See skin contact.

Ingestion: Not a route of entry for gases.

Effects of Long-Term (Chronic) Exposure: Repeated exposure to nitrous oxide can damage the peripheral nervous system. A condition called polyneuropathy has been observed. While this condition may improve over time, it is not completely reversible. Symptoms may include: numbness, a burning or prickling sensation on the skin, poor muscle coordination and clumsiness. If exposure continues, weakness, disturbances in walking, impotence and signs of degeneration of the spinal cord can occur.

Exposure to high concentrations of nitrous oxide can suppress bone marrow activity decreasing the number of circulating blood cells.

Medical Conditions Aggravated By Exposure: None known.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. Fire Fighting Measures

5.1 Extinguishing Media

Suitable extinguishing media: Use extinguishing media appropriate to surrounding fire conditions, such as dry chemical powder, carbon dioxide, or foam. Use water in large quantities for fires involving nitrous oxide.

Unsuitable extinguishing media: Not known

5.2 Special hazards arising from mixture: Oxidizing gas. Do not spray toward ignition sources, heat or flame.

Protective Equipment: Wear protective equipment detailed in Section 8.

Advice for firefighters: Cool containers exposed to flames with water until well after the fire is out. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Use pressurized air mask if product is involved in a fire.

5.3 Further Information:

Sensitivity to Impact: No
Sensitivity to Static Discharge: No

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:

HEALTH: 0
FLAMMABILITY: 0
REACTIVITY: 0
SPECIAL HAZARD: OX

HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS):

HEALTH HAZARD: 0
CHRONIC HEALTH HAZARD: *
FLAMMABILITY: 1
PHYSICAL HAZARD: 3

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

If excessive volume of gas expelled, keep unnecessary personnel away and ventilate area to dilute and eliminate nitrous oxide concentration. If safe to do so, remove all sources of ignition, flame or heat.

Respiratory Protection: No specific recommendation.

Skin protection: Depending upon the conditions of use, protective gloves made from chemical resistant nitrile rubber, PVC, PE or neoprene. Neoprene aprons or suitable clothing to prevent skin contact.

Eye and Face Protection: Tightly sealed goggles and/or face shield must be worn when a possibility exists for eye contact. Contact lenses should not be worn.

Footwear: No specific recommendation.

Other: Emergency eyes wash fountains should be available in vicinity of use.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Follow cleanup methods as described in Section 6.3

6.3 Methods and materials for containment and cleanup

No recommendation.

Remedial Measures: No recommendation.

Large Spills: No recommendation.

Small Spills: No recommendation.

6.4 Reference to other sections

For disposal, see Section 13

7. Handling and Storage

7.1 Precautions for safe handling

Handling Procedures: Do not breathe gas. Do not spray onto skin or into eyes. Only use outside or in a well-ventilated area. This material is an oxidizer and a compressed gas. Before handling, it is extremely important that proper ventilation systems are in place and person handling this material are properly trained regarding its hazards and safe use.

This material cannot be used where it may come in contact with materials that burn. Eliminate all ignition sources. Post "No Smoking" signs in use area. Do not use near welding operations, flames, or hot surfaces.

7.2 Conditions for safe storage, including incompatibilities

Storage: Store the product in a cool, dry, well ventilated area away from flammable materials and corrosive atmospheres, in a fireproof area. Store away from heat and ignition sources and out of direct sunlight. The storage area should be posted with "No Smoking" signs.

7.3 Specific end use(s)

No other uses except those mentioned in Section 1.2

8. Exposure Controls, Personal Protection

8.1 Control parameters

Components with workplace control parameters

ACGIH Threshold Limit Values

<u>Components</u>	<u>Type</u>	<u>Value</u>
Nitrous Oxide CAS No. 10024-97-2	TWA	50 ppm

WEEL (USA Workplace Environmental Exposure Limits

<u>Components</u>	<u>Type</u>	<u>Value</u>
1,2-Propylene Glycol CAS No 57-55-6	TWA	10 mg/m ³

Note: Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area.

ACGIH , American Conference of Governmental Industrial Hygienists.

8.2 Exposure Controls

Engineering Controls: When using indoors, ensure adequate ventilation by using local exhaust.

Respiratory Protection: No specific recommendation.

Skin protection: Depending upon the conditions of use, protective gloves made from chemical resistant nitrile rubber, PVC, PE or neoprene. Neoprene aprons or suitable clothing to prevent skin contact.

Eye and Face Protection: Tightly sealed goggles and/or face shield must be worn when a possibility exists for eye contact. Contact lenses should not be worn.

Footwear: No specific recommendation.

Other: Emergency eyes wash fountains should be available in vicinity of use.

Control of environmental exposure:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Aerosol, colourless
Odour:	Slightly sweet
Odour Threshold:	Not available
pH:	Not available
Melting Point/Freezing Point:	Not available
Initial Boiling Point:	100°C
Pour Point:	Not available
Flash Point:	Not available
Evaporation Rate:	Not available
Flammability:	Not available
Upper Explosion Limit:	12.5% (V), (1,2-Propylene Glycol)
Lower Explosion Limit:	2.6% (V), (1,2-Propylene Glycol)
Vapour Pressure:	58,500 hPa @20°C (Nitrous Oxide)
Vapour Density:	1.52 (air =1), (Nitrous Oxide)
Relative Density:	1.04 @ 20°C (water = 1)
Solubility:	Fully miscible
Partition Coefficient:	Not available
Autoignition Temperature:	371°C (1,2-Propylene Glycol)
Decomposition Temperature:	Not available
Explosive Properties:	Not available
Oxidizing Properties:	Not available
Percent Volatiles:	Not available
Viscosity, cSt@40°C:	Not available
Viscosity, cSt@100°C:	Not available
Viscosity Index:	Not available
Total Acid Number:	Not available

9.2 Other safety information: None

10. Stability and Reactivity

10.1 Reactivity

Hazardous polymerization will not occur. Oxidizer.

10.2 Chemical Stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

COMBUSTIBLE MATERIALS (e.g. wood, paper, oil, grease) - may ignite.

COMBUSTIBLE GASES (e.g. ammonia, carbon monoxide, hydrogen, hydrogen sulfide and phosphine) or DIETHYL ETHER - form explosive mixtures.

POWDERED ALUMINUM, HYDRAZINE or LITHIUM HYDRIDE - form flammable mixtures, some of which may ignite spontaneously.

AMORPHOUS BORON, GASEOUS SODIUM, TIN(II)OXIDE or TUNGSTEN CARBIDE - ignite when heated in nitrous oxide.

HYDROGEN - lowers the ignition temperature.

PHENYLLITHIUM - forms unstable lithium phenylazoxide.

PLASTIC TUBES (e.g polyvinyl chloride, silicone rubber or red rubber) - surgical tubes have been ignited by surgical lasers or electrocautery in atmospheres enriched by nitrous oxide.

SILANE - detonates very easily.

10.6 Hazardous decomposition products

Hazardous decomposition products formed during fire conditions, nitrogen oxides. At elevated temperatures (above 649°C) decomposes into nitrogen and oxygen. This decomposition may become explosive at high temperatures. Decomposition will occur at lower temperatures in the presence of catalytic surfaces such as silver, platinum, cobalt, copper oxides or nickel oxides.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

No GHS classification.

Skin corrosion/irritation

No GHS classification.

Serious eye damage/eye irritation

No GHS classification.

Respiratory or skin sensitization

No GHS classification.

Germ Cell Mutagenicity

No GHS classification

Carcinogenicity

No GHS classification

Reproductive toxicity

Reproductive Toxicity, Category 2, H362: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity – Single exposure

Specific Target Organ Toxicity- Single Exposure (Respiratory), Category 3, H336: May cause drowsiness or dizziness

Specific Target Organ Toxicity – Repeated exposure

No GHS classification.

Aspiration Hazard

No GHS Classification

Aquatic Toxicity

No GHS classification.

Additional information

Nitrous Oxide, CAS No. 10024-97-2 (propellant)

1,2-Propylene Glycol, CAS No. 57-55-6

Produces anesthetic effects when inhaled

LC₅₀: 160 mg/m³ (inhalation/rat, 6 hour)

LD₅₀: 21800 mg/kg (oral/rat)

LD₅₀:20800 mg/kg (dermal/rabbit)

12. Ecological Information

12.1 Toxicity

1,2-Propylene Glycol, CAS No. 57-55-6

To fish: Mortality NOEC: Pimephales promelas (Fathead Minnow), 52930 mg/l, 96 hour
To Daphnia Mortality NOEC: Daphnia Magna (Water Flea) 13,020 mg/l, 48 hour
and other EC₅₀, Daphnia Magna (Water Flea) >10,000 mg/l, 48 hour
aquatic
invertebrates:

12.2 Persistence and degradability

Biodegrades readily in terrestrial and aquatic environments.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not conducted

12.6 Other adverse effects

No data available

13. Disposal Considerations

13.1 Waste treatment methods

Product: Review federal, provincial or state, and local government requirements prior to disposal. Store material for disposal as indicated in Storage Conditions. Disposal by controlled incineration may be acceptable.

Contaminated Packaging:

Contaminated packagings should be emptied as much as possible before disposal.

14. Transport Information

Transport of Dangerous Goods (TDG and CLR): UN 1950, AEROSOLS, Class 2.2

United States Department of Transport (49CFR): UN 1950, AEROSOLS, Class 2.2

International Air Transport Association (IATA): UN 1950, AEROSOLS, Class 2.2

International Maritime Organization (IMO): UN 1950, AEROSOLS, Class 2.2

EmS No. F-D, S-U, For AEROSOLS with a maximum capacity of 1 litre: Stowage category "A", segregate as for Class 9 but "away from" sources of heat and "Separated from" Class 1 except division 1.4. For AEROSOLS with a capacity above 1 litre: Stowage Category "B", segregate as for the appropriate division of Class 2.

15. Regulatory Information

CANADIAN FEDERAL REGULATIONS:

CEPA, DOMESTIC SUBSTANCES LIST: Listed

UNITED STATES REGULATORY INFORMATION

SARA 302 Components: None subject to this regulation

SARA 313 Components: None subject to this regulation

SARA 311/312 Hazards: Nitrous Oxide: Fire hazard, Sudden release of pressure, Immediate(acute) health

16. Other Information

Original Preparation Date: September 3, 2008

Prepared by: KJ Pearson, West Vancouver, BC

Disclaimer: This Safety Data Sheet (SDS) was prepared using information provided by CCINFO, ingredient supplier SDS and other relevant sources. This product has been classified using weight of evidence, expert judgment and previous testing as per Part 1.3 of the Fifth Edition of The Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The information in this SDS is offered for your consideration and guidance when exposed to this product. JSA Sales and Bison International expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

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