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| MATERIAL SAFETY DATA SHEET |
| Title: COMPRESSED BTEX STANDARD SAFETY DATA SHEET |
| Date of Issue: 1 October 2021 |
| Date of Next Review: 1 October 2026 |

MATERIAL SAFETY DATA SHEET
COMPRESSED GAS NOT OTHERWISE SPECIFIED:
BTEX STANDARD



IDENTIFICATION:

Chemical Name: Compressed Gas, Not Otherwise Specified (Contains Nitrogen)

Synonyms: BTEX Standard

UN Number: 1956

Use: Industrial and Speciality Gas Applications

HAZARDS IDENTIFICATION:

Dangerous Goods Class and Subsidiary Risk: 2.2

HSNO Classification: Not Hazardous

Hazard Statement:

Contains gas under pressure; may explode if heated.

Precautionary Statements:

Read label before use.
Read Safety Data Sheet before use.
Protect from sunlight and heat.
Store in a well-ventilated place.
Wear protective gloves and eye protection.

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| Prepared By: | MAM | Document Number: | MSDS032 | Number of Copies | 1 |
| Authorised By: | WJM | Issue Date: | 01/10/2021 | File Location: | MASTER FILE |
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| COMPOSITION / INGREDIENTS: |
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| Chemical Entity | CAS Number | Proportion |
|------------------------|-------------------|-------------------|
| Nitrogen | 7727-37-9 | Balance Gas |
| Benzene | 71-43-2 | 200 ppb – 2 ppm |
| Toluene | 108-88-3 | 200 ppb – 2 ppm |
| Xylene | 106-42-34 | 200 ppb – 2 ppm |
| Hexaflourobenezene | 392-56-3 | 200 ppb – 2 ppm |
| Octafluorotoluene | 434-64-0 | 200 ppb – 2 ppm |
| Tetrafluorobenezene | 327-54-8 | 200 ppb – 2 ppm |
| Dodecane | 112-40-3 | 200 ppb – 2 ppm |
| Isobutane | 75-28-5 | 200 ppb – 2 ppm |
| Ethylene | 74-85-1 | 200 ppb – 2 ppm |

Contains no other components or impurities that will influence the classification of the product.

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| FIRST AID MEASURES: |
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Health Effects

Acute

Swallowed: Not applicable to gases.

Eye: Immediately flush eyes thoroughly with water for at least 15 minutes.

Skin: Not irritating to the skin.

Inhaled: BTEX is non-toxic at normal temperature and pressure.

By diluting the oxygen concentration in air below the level necessary to support life, it can act as an asphyxiant.

Effects of oxygen deficiency are:

16%: breathing and pulse rate increased, impaired thinking and attention, reduced coordination;

14%: Abnormal fatigue upon exertion, emotional upset, faulty coordination, poor judgement;

12.5%: Very poor judgement and coordination, impaired respiration that can cause permanent hear damage, nausea and vomiting;

below 10%: Inability to perform various movements, loss of consciousness, convulsions, and death.

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First Aid

Inhalation:

In high concentrations may cause headaches, nausea and vomiting which may lead to unconsciousness as well as asphyxiation. Symptoms may include loss of mobility/consciousness. Remove victim to uncontaminated area whilst wearing self-contained breathing apparatus.

Victim may not be aware of asphyxiation.

Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Advice to Doctor

Advise doctor that victim has been exposed to an oxygen deficient atmosphere.

General:

Rescuers should not enter an oxygen deficient atmosphere without using self-contained full face positive pressure breathing equipment.

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| FIRE FIGHTING MEASURES: |
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Flammability:

Non Flammable.

Fire/Explosion Hazard:

Non-flammable, however exposure to fire may cause container to rupture/explode. Cylinders involved in a fire/explosion may rocket. Move cylinders from vicinity of fire if safe to do so.

Cool cylinders by spraying flooding quantities of water from a protected location. If unable to keep cylinders cool, evacuate area, minimum distance 200 meters.

Extinguishing Media:

Use appropriate media to extinguish source of surrounding fire. Cool cylinders with water if possible.

Hazchem Code: 2 TE

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| ACCIDENTAL RELEASE MEASURES: |
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Personal Protection:

Personnel engaged in the movement of cylinders shall be provided with safety footwear, safety glasses and leather or PVC gloves. Full cover overalls are recommended. If cylinder is leaking, evacuate area of personnel.

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Reference Guide:

Standard SNZ HB 76:2008 Dangerous Goods – Initial Emergency Response Guide.
 AS/NZS 1337 – Eye Protection for Industrial Applications
 AS/NZS 2161.1 – Occupational Protective Gloves – Selection, use and maintenance
 AS/NZS 1715 – Selection, Use and Maintenance of Respiratory Protective Devices
 AS/NZS 1716 – Respiratory Protective Devices

General:

Only experienced and properly instructed personnel should handle compressed gases. Cylinder contents and identification labels provided by the supplier must not be removed or defaced. Colour coding should not be the only criterion used for content identification

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| HANDLING AND STORAGE: |
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Handling

Flammability: Non Flammable.

General:

Only experienced and properly instructed personnel should handle compressed gases. Cylinder contents and identification labels provided by the supplier must not be removed or defaced. Colour coding should not be the only criterion used for content identification.

Approved Handlers:

Approved handlers are not required, non-hazardous gas (HSNO).

Storage:

Storage of compressed gas cylinders shall be in compliance with New Zealand HSNO Regulations.
 Cylinders will be kept away from ignition sources (including static discharges).
 Cylinders shall be stored in a cool, dry, well-ventilated area out of direct sunlight and away from heat and ignition sources.
 No part of cylinders shall be exposed to temperatures above 50°C.
 Cylinders shall be stored upright on a level, fireproof floor, secured in position, and protected from damage.
 Full cylinders shall be stored separately from empties.
 Cylinders should be moved by hand-truck or cart designed for that purpose.

Separation:

Avoid any contact with oil or grease particularly to the cylinder valve.
 Southern Shield can be stored with most common substances.

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| EXPOSURE CONTROLS / PERSONAL PROTECTION: |
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Exposure Standards:

| INGREDIENT | REFERENCE | TWA | | STEL | |
|--------------------|-----------|-------------------|-------------------|------|-------------------|
| | | ppm | mg/m ³ | ppm | mg/m ³ |
| Nitrogen | SW | ASPHYXIANT | | | |
| Benzene | | 1 | 3.2 | - | - |
| Toluene | | 50 | 191 | 150 | 574 |
| Xylene | | 80 | 350 | 150 | 655 |
| Hexafluorobenzene | | 0.8 | 6.6 | | |
| Octafluorotoluene | | 3 | 30 | | |
| Tetrafluorobenzene | | 4.8 | 30 | | |
| Dodecane | | N/E | N/E | N/K | N/K |
| Isobutane | | 1000 | - | - | - |
| Ethylene | | ASPHYXIANT | | | |

Engineering Controls:

Provide adequate local exhaust and dilution via general ventilation and supply sufficient replacement air to maintain oxygen levels above 19%.

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.

Provide adequate local exhaust and dilution (general) ventilation and supply sufficient replacement air to maintain oxygen concentration above 19%.

Personal Protection:

Personnel engaged in the movement of cylinders shall be provided with safety footwear, safety glasses and leather or PVC gloves.

Full cover overalls are recommended. In areas where equipment failure may cause an immediate high concentration of BTEX ensure adequate ventilation and have approved self-contained, full face respiratory equipment readily available for emergencies.

Equipment employed shall be designed to withstand process pressure and temperature.

Reference Guide:

AS/NZS 1337 – Eye Protection for Industrial Applications

AS/NZS 2161.1 – Occupational Protective Gloves – Selection, use and maintenance

AS/NZS 1715 – Selection, Use and Maintenance of Respiratory Protective Devices

AS/NZS 1716 – Respiratory Protective Devices

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| PHYSICAL AND CHEMICAL PROPERTIES: |
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Physical Properties

Appearance: Colourless Gas
Odour: Slight Odour,
Flammability: Non Flammable
Flash Point: Not relevant
Boiling Point: Not Applicable
Melting Point: Not Available
Evaporation Rate: Not Available
pH: Not Available
Vapour Density: Not Available
Specific Gravity: Not Available
Solubility (water): Not Available
Vapour Pressure: Not Available
Upper Explosion Limit: Not Relevant
Lower Explosion Limit: Not Relevant
Partial Coefficient: Not Available
Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Explosive Properties: Not Available
Oxidising Properties: Not Available
Odour Threshold: Not Available

Other Properties

% Volatiles: 100%

STABILITY AND REACTIVITY:

Flammability:

BTEX is non- flammable.

Materials Compatibility: Not applicable.

Stability: Stable under normal conditions

TOXICOLOGY INFORMATION:

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Acute Toxicity:

Based on available data, the classification criteria are not met.

| Ingredient | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|-------------------|-------------------|----------------------|---------------------------------------|
| Isopentane | < 2000 m/kg (rat) | - | > 20 mg/L (rat) |
| N-Hexane | 25 g/kg (rat) | 3000 mg/kg (rabbit) | 48000 ppm /4 hours (rat) |
| Benzene | 930 mg/kg (rat) | 48 mg/kg (mouse) | 9980 ppm (mouse) |
| Cyclohexane | 813 mg/kg (mouse) | - | 70 g/m ³ (mammal) |
| Ethylbenzene | 3500 mg/kg (rat) | 17800 mg/kg (rabbit) | 50 mg/m ³ /2 hours (mouse) |
| Toluene | 5580 mg/kg (rat) | 5000 mg/kg (rabbit) | 25.7 – 30 mg/L/4 hours (rat) |

Skin: Not classified as a skin irritant
Eye: Not classified as an eye irritant
Sensitivity: Not classified as causing skin or respiratory sensitization
Mutagenicity: Not classified as a mutagen
Carcinogenicity: Contains trace quantities of Benzene. Benzene is classified as carcinogenic to humans (IARC Group 1)
Reproductive: Not classified as a reproductive toxin
STOT- Single exposure: Asphyxiant. Effects are proportional to Oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness
STOT – Repeated exposure: Not classifies as causing organ damage from repeated exposure
Aspiration: Not applicable to gases and gas mixtures

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| ECOLOGICAL INFORMATION: |
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Toxicity:

No ecological damage caused by this product

Persistence and Degradability:

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

Bio Accumulative Potential:

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This product does not bioaccumulation

Mobility in Soil:

The substance is a gas, this is not applicable.

Adverse effects:

Not other adverse effects

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| DISPOSAL CONSIDERATIONS: |
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Cylinders to be returned to manufacturer or supplier for disposal of contents.

Dispose in accordance with relevant local legislation

Do not discharge into any place where its accumulation could be dangerous.

Discharge to atmosphere in in large quantities should be avoided

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| TRANSPORT INFORMATION: |
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UN Number: 1956

Proper Shipping Name: COMPRESSED GAS, N.O.S (contains Nitrogen)

Dangerous Goods Class and Subsidiary Risk: 2.2

Packing Group: Not applicable

Hazchem Code: 2 TE

Other Information:

Avoid transport on vehicles where the load is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers:

Ensure that containers are firmly secured.
Ensure cylinder valve is closed and not leaking.
Ensure there is adequate ventilation.
Compliance with applicable regulations.

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| REGULATORY INFORMATION: |
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Environmental Protection Agency Register Approval No: HSR002533

HSNO Controls:

Hazardous Substances (Compressed Gases) Regulations 2004.

Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004.

Approved Handlers: Approved handlers are not required, non-hazardous gas (HSNO).

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| OTHER INFORMATION: |
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Compressed BTEX is supplied in high pressure gas cylinders

Cylinder Valve Outlet:

Industrial: AS 2473.2 Type 50

References:

NZS 5433:2007 Transport of Dangerous Goods on Land

EPA Website – Approvals Register – www.epa.govt.nz

SNZ HB76:2008 Dangerous Goods – Initial Emergency Response Guide

AS1678 2C1 Emergency Procedure Guide – Transport – Non-Flammable, Compressed Gas

AS 4484-2004 - Gas Cylinders for Industrial, Scientific, medical and refrigerant use -

Labelling and colour coding

AS 2473.2-2007 - Valves for compressed gas outlets - Part 2 Outlet connections (threaded) and stem (inlet) threads

AS 2473.3-2007 - Valves for compressed gas outlets - Part 3 Outlet connections for medical gases (including pin-indexed yoke connections)

Operators Handbook for the Transport of Dangerous Goods by Road – NZ Road Transport & Logistics Industry Training Organisation

NZCIC Code of Practice – Preparation of Safety Data Sheets

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| MSDS SUMMARY: |
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This MSDS summarises to our best knowledge, at the date of issue, the health and safety hazard information regarding this product and general guidance on how to safely handle the product in the workplace. All due care has been taken to include accurate and up-to-date information in this MSDS.

Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace in conjunction with other products. If

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clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Southern Gas Services Limited.

As far as lawfully possible, no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS can be accepted.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is available on request.

This MSDS has been prepared in accordance with NZCIC Code of Practice – Preparation of Safety Data Sheets.

This MSDS is subject to change without notice.

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