

SIG SOUTHERN INDUSTRIAL GAS SDN BHD


SAFETY DATA SHEET

PURIFIED NITROGEN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name	Purified Nitrogen
Synonyms	Nitrogen, compressed ; Nitrogen, gas.
Chemical Formula	N ₂
CAS No	7727-37-9
Use of Substance	Compressed gas, shielding gas in gas welding.
Manufacturer	SOUTHERN INDUSTRIAL GAS SDN. BHD. PLO 137, Kawasan Perindustrian Senai III, 81400 Senai, Johor.
Contact Number	07-598 3863
Emergency Phone Number (24 hr)	07-598 3863

2. HAZARDS IDENTIFICATION

Chemical Name	CAS No.	Classification Code	Labeling		
			H-code	Signal Word	Hazard Pictogram
Nitrogen	7727-37-9	Press. Gas	H 280	Warning	

Classification of the substance	Press. Gas	: Gases under pressure (Compressed gas)
Hazard Statement	H 280	: Contains gas under pressure; may explode if heated.
Precautionary Statement	P403	: Store in a well-ventilated place
Other Hazards	Simple asphyxiant.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name	Ingredient	CAS Number	Specification	OSHA-PEL
Purified Nitrogen	Nitrogen	7227-37-9	>99.999%	None established

*Contains no other components or impurities which influence the classification of the product.

4. FIRST AID MEASURES

Eye Contact

None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and get medical attention immediately.

Inhalation

Product is a simple asphyxiant.
High concentrations may exclude an adequate supply of oxygen to the lungs.
Move exposed person to fresh air.
If not breathing, provide artificial respiration or oxygen by trained personnel.
Loosen tight clothing such as a collar, tie, belt or waistband.
Get medical attention if symptoms occur.

Skin Contact

None required for gas. For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.

Ingestion

Ingestion is not considered as a potential route of exposure.

Most important symptoms and effects, both acute and delayed

May be harmful, Nausea, Headache, Vomiting

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

Unsuitable extinguishing media

None known

Special hazards arising from the chemical

Exposure to fire may cause containers to rupture / explode.

Special protective equipment and precautions for fire fighters

In case of fire: Stop leak if safe to do so.
Continue water spray from protected position until container stays cool.
Use extinguishants to contain the fire.

Isolate the source of the fire or let it burn out.
 Continue spray water from protected area until the container stays cool.
 Use Self-contained breathing apparatus while in confined space.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area.
 Provide adequate ventilation.
 Eliminate ignition sources.
 Post warning notices (including no smoking).
 Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

Environmental precautions

Try to stop release.
 Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.

Clean up methods

Provide adequate ventilation.

7. HANDLING AND STORAGE

Precaution for safe handling

Only properly trained or experienced persons should handle the gases under pressure.
 Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.
 Use only spark-proof tools and explosion-proof equipment.
 Purge system with dry inert gas (e.g. Nitrogen) before gas is introduced and when system is placed out of service.
 Protect cylinders from physical damage; do not drag, roll, slide or drop.
 Do not heat cylinder by any means to increase the discharge rate of product from the cylinder.
 Use a check valve in the discharge line to prevent hazardous back flow into the cylinder.
 Contact your gas supplier if in doubt.
 To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Condition for safe storage

Store in segregated and approved area.
 Keep away from ignition sources (including static discharges).
 Keep container below 50°C in a well-ventilated place.
 Use a 'first-in-first-out' inventory system to prevent full cylinders being stored for excessive periods of time.
 Earth-ground and bond all lines and equipment associated with the hydrogen system.
 Separate hydrogen from oxygen and other oxidizers by a minimum distance of 20 ft or by a 5 ft high barrier with a minimum fire

resistance rating of a half an hour.
Keep cylinder stored upright.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	Exposure Limit – None established.
Appropriate engineering controls	<p>Ensure adequate air ventilation.</p> <p>Use local exhaust and general explosive proof ventilation systems to prevent buildup of flammable concentrations.</p> <p>Small quantities can be handled in forced ventilation hoods.</p> <p>If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres.</p> <p>Gas detectors should be used when quantities of flammable gases/vapors may be released.</p> <p>System under pressure should be regularly checked for leakage.</p> <p>Always use a flashback arrestor on both the torch and cylinder ends of a hose.</p>
Personal protection equipment	<p>Wear goggles for eye protection.</p> <p>Contact lens should not be worn when working.</p> <p>Wear suitable hand, body and head protection.</p>

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless, gas
Odour	Odorless
Odour threshold	No information available
pH	Not applicable
Melting point / Freezing point	-259.2 °C
Boiling point	-252.8 °C
Flash point	Not applicable for gases and gas mixtures.
Evaporation rate	Not applicable
Flammability	Extremely flammable in the presence of the following materials or conditions: oxidizing materials.
Upper/lower explosive limit	LOWER: 4 % UPPER: 75 %
Vapour pressure	Not applicable
Vapour density (Air =1)	0.07
Relative density	Not applicable
Solubility (H₂O)	0.019 (vol/vol)
Partition coefficient	Not available
Auto ignition temperature	500 – 571 °C
Decomposition temperature	Not available
Viscosity	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	Unreactive under normal conditions.
Chemical Stability	Stable under normal conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Condition to avoid	Heat, flames and sparks. May decompose violently at high temperature and/ or pressure in the presence of a catalyst.
Incompatible materials	Oxidizing agents Lithium Hydrogen ignites in bromine fluoride and explodes in nitrile fluoride.
Hazardous decomposition products	None

11. TOXICOLOGICAL INFORMATION**Information on toxicological effects**

Acute toxicity	Oral: LD ₅₀ > No information available. Dermal: LD ₅₀ > No information available. Inhalation: LC ₅₀ > No information available. Inhalation: No known significant effects or critical hazards
Skin corrosion / irritation	No specific data.
Serious eye damage/ irritation	No specific data.
Respiratory or skin sensitisation	No specific data.
Germ cell mutagenicity	No specific data.
Carcinogenicity product	No specific data.
Reproductive toxicity product	No specific data.
Specific target organ toxicity – single exposure product.	No specific data.

**Specific target organ toxicity –
repeated exposure product**

No specific data.

Aspiration hazard product

Not applicable to gases and gas mixtures.

12. ECOLOGICAL INFORMATION

Ecotoxicity effect

Acute toxicity product

No ecological damage caused by this product

Additional ecological information

No ecological damage caused by this product

Persistence and degradability

Not applicable to gases and gas mixtures.

Bioaccumulative potential

Not available

Mobility in soil

Not available

Other adverse effects

No other adverse effects are identified

Hydrogen does not contain any class 1 or class II ozone depleting chemicals.

Hydrogen is not listed as a marine pollutant.

13. DISPOSAL CONSIDERATIONS

**Waste from residue / unused
product**

Do not discharge into areas where there is a risk of forming an explosive mixture with air.

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

Contaminated packaging

Do not reuse empty containers.

Empty remaining contents.

Dispose of container and unused contents in accordance with local and national regulation.

Return cylinder to supplier

14. TRANSPORT INFORMATION

UN Number

UN 1049

UN proper shipping name

Hydrogen, Compressed

Transport hazard class(es)

2.1

Packing group

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Environmental hazards

None

Special precautions for user

None

**Transport in bulk according to Annex
II of MARPOL73/78 and the IBC
Code**

Not applicable

Revision Date: 22 October 2014

Information

Ensure the driver is understand well on the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Secured the product containers before transporting it.

Ensure that the cylinder valve is closed and not leaking.

Container valve guards or caps should be in place.

Ensure adequate air ventilation.

15. REGULATORY INFORMATION

Contact local government authority.

16. OTHER INFORMATION**Date of Preparation / Revision of SDS**

22-October-2014 / Rev. 01

Legend to the abbreviations and acronyms used**Classification of the substance**

Flam. Gas 1 : Flammable gases category 1
Press. Gas : Gases under pressure
(Compressed gas)

Hazard Statement

H 220 : Extremely flammable gas
H 280 : Contains gas under pressure; may explode if heated.

Precautionary Statement

P210 : Keep away from heat/ sparks/ open flames/ hot surfaces – No smoking
P377 : Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 : Eliminate all ignition sources if safe to do so.
P403 : Store in a well-ventilated place

Abbreviations

LC₅₀ : median lethal concentration
LD₅₀ : median lethal dose
PEL : Permissible exposure limits

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