

Hydrogen/Nitrogen

(mixtures containing more than 5.7% hydrogen)

PRODUCT: HYDROGEN/NITROGEN MSDS NR : 302-10-0005 BOC VERSION: 1.05 DATE: 03/03/05 PAGE: 1/1

1 IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY

Product name	Hydrogen/nitrogen
Company identification	See end of page 2.
Emergency phone Nos	See end of page 2.

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/ Preparation	Preparation
Components/ Impurities	Contains at least 5.7% of Hydrogen (F+;R12) (EINECS No. 215-605-7). Contains Nitrogen (EINECS No. 231-783-9).
EEC Nr (from EINECS)	Not applicable for preparations.

3 HAZARDS IDENTIFICATION

Hazards identification	Extremely flammable. Compressed gas.
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4 FIRST AID MEASURES

Inhalation	In high concentrations may cause asphyxiation and death. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Ingestion	Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards	Exposure to fire may cause containers to rupture/explode. Inform Fire Brigade
Hazardous combustion products	None
Suitable extinguishing media	All known extinguishants can be used.
Specific methods	If possible, stop flow of product. Move away from container and cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Special protective equipment for fire fighters	Use self-contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Post warning signs (including no smoking).
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Leak not ignited

Extinguish all sources of ignition in the immediate area. Close the cylinder valve.

If leak continues, evacuate the area, and avoiding sources of ignition and minimising personal risk move the leaking cylinder to a safe outside area. Notify BOC.

Post warning notices and prevent access to the area.

Do not attempt to tighten the cylinder valve in the body of the cylinder. Do not tamper with the safety devices.

Leak Ignited

Raise fire alarm.

Close cylinder valve if safe to do so. Call fire brigade. Evacuate the area. If possible apply copious quantities of water from a hose to the affected cylinder(s) from a protected position until the cylinder(s) are cold.

Do not move cylinders until cold.

Environmental precautions Try to stop release.

Clean up methods Ventilate area.

7 HANDLING AND STORAGE

Handling and storage

Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact BOC if in doubt. Keep away from ignition sources (including static discharges). Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection Ensure adequate ventilation. Do not smoke while handling product.

9 PHYSICAL AND CHEMICAL PROPERTIES

Relative density, gas	Lighter or similar to air
Solubility mg/l water	Not known.
Appearance/Colour	Colourless gas
Odour	None

10 STABILITY AND REACTIVITY

Stability and reactivity Can form explosive mixture with air. May react violently with oxidants.

11 TOXICOLOGICAL INFORMATION

General No known toxicological effects from this product.

12 ECOLOGICAL INFORMATION

General No ecological damage caused by this product.

SAFETY DATA SHEET

13 DISPOSAL CONSIDERATIONS

General Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Contact BOC if guidance is required.

14 TRANSPORT INFORMATION

Proper Shipping Name Compressed gas, flammable, N.O.S. (Hydrogen, Nitrogen)

UN Nr 1954

Class 2.1

ADR/RID Classification Code 1F

ADR/RID Hazard Nr 23

Labelling ADR Label 2.1: flammable gas

Other transport information Avoid transport on vehicles where the load space 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 they are firmly secured and:

- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548 Not applicable for preparations.

EC Classification F+;R12

Labelling of cylinders

- **Symbols** Label 2.1: Flammable gas
- **Risk phrases** R12 Extremely flammable.
- **Safety phrases** S9 Keep container in well-ventilated place.
S16 Keep away from ignition sources – No smoking.
S33 Take precautionary measures against static discharges.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Before using this product in any new process or experiment, a through material compatibility and safety study should be carried out.

Always leak check cylinders when first collected, delivered or used using an approved leak detection fluid.

Details given in this document are believed to be correct at the time of going to press.

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

For further safety information please refer to "Safe Under Pressure" and "Guidance for carriage of gas cylinders on vehicles", both of which are available from your local BOC outlet.

CYLINDER CHARACTERISTICS

Cylinder Size	Maximum Filled Pressure at 15°C (bar)	Approx. Dimensions incl. valve and guard where supplied (mm)	Approx. Full Cylinder weight (kg)	Manifolded Cylinder Pallets (MCPs)	Maximum Filled Pressure at 15°C (bar)	Approx. Dimensions incl. cylinders (mm)	Max. Gross Weight (kg)
N	200	1460 x 230	82	WN (15 x N)	200	1290 x 1810 x 840	1500



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