Safety data sheet
Deuterium, compressed

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name
Deuterium, compressed
EC No (from EINECS): 231-952-7
CAS No: 7782-39-0
Index-Nr.
Chemical formula D2
REACH Registration number:
Not available.
Known uses
Electronic industry
Company identification
Linde AG, Linde Gas Division, Seitnerstraße 70, D-82049 Pullach
E-Mail Address Info@de.linde-gas.com
Emergency phone numbers (24h): 089-7446-0

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification acc. to Regulation (EC) No 1272/2008/EC (CLP/GHS)
Press. Gas (Compressed gas) - Contains gas under pressure; may explode if heated.
Flam. Gas 1 - Extremely flammable gas.

Classification acc. to Directive 67/548/EEC & 1999/45/EC
F+; R12
Extremely flammable.
Risk advice to man and the environment
Compressed gas.
Label Elements

- Labelling Pictograms

- Signal word
Danger

- Hazard Statements

H280	Contains gas under pressure; may explode if heated.
H220	Extremely flammable gas.

- Precautionary Statements

Precautionary Statement Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautionary Statement Reaction

P377	Leaking gas fire: Do not extinguish, unless leakcan be stopped safely.
P381	Eliminate all ignition sources if safe to do so.

Precautionary Statement Storage

P403	Store in a well-ventilated place.

Precautionary Statement Disposal
None.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance.
Components/Impurities
Deuterium, compressed
CAS No: 7782-39-0
Index-Nr.:
EC No (from EINECS): 231-952-7
REACH Registration number:
Not available.
Contains no other components or impurities which will influence the classification of the product.

4 FIRST AID MEASURES

Inhalation
In high concentrations may cause asphyxiation. 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.

5 FIRE FIGHTING MEASURES

Specific hazards
Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products
None.
Suitable extinguishing media
All known extinguishants can be used.
Specific methods
If possible, stop flow of product. Move container away or 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
In confined space use self-contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources.
Environmental precautions
Try to stop release.
Clean up methods
Ventilate area.

7 HANDLING AND STORAGE

Handling
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 your gas supplier if in doubt. Keep away from ignition sources (including static discharges). Refer to supplier's handling instructions.
Storage
Secure cylinders to prevent them falling. Segregate from oxidant gases and other oxidants in store. Keep container below 50°C in a well ventilated place. Observe "Technische Regeln Druckgase (TRG) 280 Ziffer 5"

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection
Ensure adequate ventilation. Do not smoke while handling product. Carry working gloves and protection shoes while handling gas cylinders.

9 PHYSICAL AND CHEMICAL PROPERTIES

General information
Appearance/Colour: Colourless gas.
Odour: None.

Important information on environment, health and safety
Molecular weight: 4 g/mol
Melting point: -254 °C
Boiling point: -250 °C
Critical temperature: -235 °C
Autoignition temperature: 560 °C
Flammability range: 6,6 %(V) - 79,6 %(V)
Relative density, gas: 0,14
Relative density, liquid: 0,16
Vapour Pressure 20 °C: Not applicable.
Solubility mg/l water: No reliable data available.
Other data
Burns with a colourless invisible flame.

10 STABILITY AND REACTIVITY

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

11 TOXICOLOGICAL INFORMATION

Acute toxicity
No known toxicological effects from this product.

12 ECOLOGICAL INFORMATION

General
No known ecological damage caused by this product.

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 supplier if guidance is required.
EWC Nr. 16 05 04*

14 TRANSPORT INFORMATION

ADR/RID

Class	2	Classification Code	1F

UN number and proper shipping name
UN 1957 Deuterium, compressed
UN 1957 Deuterium, compressed

Labels	2.1	Hazard number	23

IMDG

Class	2.1

UN number and proper shipping name
UN 1957 Deuterium, compressed

Labels	2.1
Packing Instruction	P200
EmS	FD,SU

IATA

Class	2.1

UN number and proper shipping name
UN 1957 Deuterium, compressed

Labels	2.1
Packing Instruction	P200

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

15 REGULATORY INFORMATION

Further national regulations
Pressure Vessel Regulation
Gefahrstoffverordnung (GefStoffV)
Technische Regeln für Gefahrstoffe (TRGS)
Regulations for the prevention of industrial accidents
Water pollution class
Not polluting to waters according to VwVwS from 17.05.99.

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. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
Advice
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. Details given in this document are believed to be correct at the time of going to press.
Further information
Hommel: Handbook of dangerous goods
Kühn-Birett: Merkblätter gefährliche Arbeitsstoffe
Linde safety advice

End of document