

Safety data sheet Arsine

Creation date : 01.11.2005
Revision date : 04.11.2005

Version : 3.0

DE / E

SDS No. : 005
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1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name

Arsine

Chemical formula AsH₃

Known uses

Not known.

Company identification

Linde AG, Gas and Engineering, Linde Gas Division Seitnerstraße
70, D-82049 Höllriegelskreuth

Emergency phone numbers: 089-7446-0

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance

Components/Impurities

CAS Nr: 7784-42-1

EEC Nr (from EINECS) : 232-066-3

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

3 HAZARDS IDENTIFICATION

Classification

Extremely flammable.

Very toxic by inhalation.

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Risk advice to man and the environment

Liquefied gas

4 FIRST AID MEASURES

Inhalation

Toxic by inhalation. Fatal intoxication possible with low concentrations. Symptoms may include dizziness, headache, nausea and loss of co-ordination. Possible symptoms are in addition upper belly pain, jaundice, blue discoloration and red to dark-brown urine. 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.

Hazardous combustion products

If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Arsenic and its oxides

Suitable extinguishing media

All known extinguishants can be used.

Specific methods

If possible, stop flow of product. Use of water may result in the formation of very toxic aqueous solutions. Specialist clean-up methods may be required. 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. Extinguish any other fire.

Special protective equipment for fire fighters

Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area. Eliminate ignition sources. Ensure adequate air ventilation. Use self-contained breathing apparatus and chemically protective clothing.

Environmental precautions

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

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

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value

Value type	value	Note
TLV (ACGIH)	0,05 ppm	ACGIH 1995 - 1996
Germany - MAK	0,05 ppm	TRGS 900

Personal protection

Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes. Do not smoke while handling product. Keep self contained breathing apparatus readily available for emergency use. While using gas cylinders use protective gloves and shoes

9 PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance/Colour: Colourless gas

Odour: Garlic like Poor warning properties at low concentrations.

Important information on environment, health and safety

Molecular weight: 78 g/mol

Melting point: -117 °C

Boiling point: -62,5 °C

Critical temperature: 100 °C

Autoignition temperature: 285 °C

Flammability range: 3,9 %(V) - 77,8 %(V)

Relative density, gas: 2,7

Relative density, liquid: 1,6

Vapour Pressure 20 °C: 15 bar

Solubility mg/l water: 778 mg/l

Other data

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity

Can form explosive mixture with air. May react violently with oxidants.

11 TOXICOLOGICAL INFORMATION

Acute toxicity

Damage to red blood cells (haemolytic poison). Damage to central nervous system. Fatal intoxication possible with low concentrations.
LC50/1h (ppm) 20 ppm

12 ECOLOGICAL INFORMATION

General

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Toxic to water organisms.

13 DISPOSAL CONSIDERATIONS

General

Avoid discharge to atmosphere. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Contact supplier if guidance is required.

EWC Nr. 16 05 04

14 TRANSPORT INFORMATION

ADR/RID

Class	2	Classification Code	2TF
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UN number and proper shipping name

UN 2188 Arsine

UN 2188 Arsine

ADR/RID-Labels	2.3, 2.1	Hazard number	263
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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 - there is adequate ventilation. - compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548

033-006-00-7

EC Classification

F+; R12 | T+; R26 | Xn; R48/20 | N; R50/53

Labelling

- Symbols

F+	Extremely flammable.
T+	Very toxic.
N	Dangerous for the environment.

- Risk Phrases

R12	Extremely flammable.
R26	Very toxic by inhalation.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R50/53	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

- Safety Phrases

S9	Keep container in well ventilated place.
S16	Keep away from ignition source - No smoking.
S28	After contact with skin, wash immediately with plenty of water.
S33	Take precautionary measures against static discharges.
S36/37	Wear suitable protective clothing and gloves.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60	This material and its container must be disposed of as hazardous waste.
S61	Avoid release to the environment. Refer to special instructions/Safety data sheets.

Further national regulations

Regulations for the prevention of industrial accidents

Pressure Vessel Regulation

Gefahrstoffverordnung (GefStoffV)

Technical Regulations for hazardous substances (TRGS)

Water pollution class

according to §19 WGH Annex 1 : WGK 3 (highly water endangering)

16 OTHER INFORMATION

Ensure all national/local regulations are observed. Ensure operators understand the flammability hazard. Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard. 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 informations

Hommel: Handbook of dangerous goods

Kühn-Birett: Merkblätter gefährliche Arbeitsstoffe

Linde safety advice

End of document