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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Trade name	Arsine adsorbed
Chemical description	Arsine adsorbed
CAS N°	7784-42-1
CE N°	232-066-3
Index N°	033-006-00-7
Registration n°	01-2120048082-66
Chemical formula	AsH <sub>3</sub>

This gas can be packaged in SDS®, SAGE® or PDS® gas source packaging. This cylinder contains an adsorbent material that allows the gaseous contents to be at subatmospheric pressures. There is no possibility of contact with or exposure to the adsorbent material. This SDS only addresses the hazards of gas

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Industrial and professional Test gas/Calibration gas Laboratory use Contact supplier for more information on uses
Uses advised against	Consumer use not recommended

### 1.3. Details of the supplier of the safety data sheet

Company identification	MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier
Phone number	+41 (0) 26 676 94 94
E-mail address	<a href="mailto:info@multigas.ch">info@multigas.ch</a>


### 1.4. Emergency telephone numbers

145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51  
+41 (0) 26 676 94 94 (Multigas)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]






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<b>Hazards</b>	Flammable gases, Category 1	H220
	Acute toxicity (oral) - Category 3	H301
	Acute toxicity (inhalation: gas) Category 1	H330
	Specific Toxicity for Certain Target Organs - Single Exposure - Class 1 (cardiovascular system, central nervous system, circulatory system, kidneys, liver, respiratory system)	H370
	Toxicity to Certain Target Organs - Repeated Exposure - Category 1 (circulatory system)	H372
	Aquatic Acute 1 - H400	H400
	Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

## 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

<b>Hazard pictograms</b>					
	GHS02	GHS04	GHS06	GHS08	GHS09
	<b>Signal word</b>				
	Danger				
	<b>Hazard statements</b>				
H220	Extremely flammable gas				
H301	Toxic if swallowed				
H330	Fatal if inhaled				
H370	Causes damage to organs. (cardiovascular system, central nervous system, circulatory system, kidneys, liver, respiratory system)				
H372	Causes damage to organs through prolonged or repeated exposure exposure (circulatory system)				
H400	Very toxic to aquatic life				
H410	Very toxic to aquatic life with long lasting effects				
<b>Precautionary statements</b>					
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking				
P260	Do not breathe gas, vapours				
P273	Avoid release to the environment				
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention				
P308+P313	IF exposed or concerned: Get medical advice				
P410+P403	Protect from sunlight. Store in a well-ventilated place				

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P405 Store locked up

### 2.3. Other hazards

Contact with liquid may cause cold burns/frostbite

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name	Product identifier	Concentration	Classification
Arsine	(CAS-No.) 7784-42-1 (EC-No.) 232-066-3 (EC Index-No.) 033-006-00-7 (Registration-No.) 01-2120048082-66	<= 100%	mFla. Gas 1 - H220 Acute Tox. (Oral) 3 - H301 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Remark(s): U Self-classified: Acute Tox. (Gas) 1 - H330 STOT SE 1 - H370 STOT RE 1 - H372

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

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

### 3.2. Mixtures

Not established


## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General advice</b>	See a doctor. Show this safety data sheet to the attending physician
<b>In case of inhalation</b>	In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor
<b>In case of skin contact</b>	In case of splashing liquid: Rinse with water for at least 15 minutes. See a doctor
<b>In case of eyes contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a doctor
<b>In case of ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

### 4.2. Most important symptoms and effects, both acute and delayed

May cause asphyxiation at high concentration. Symptoms may be loss of consciousness or motor skills. The victim may not be aware of asphyxiation  
Refer to Section 11

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#### **4.3. Indication of any immediate medical attention and special treatment needed**

May be fatal if inhaled. Contact with liquefied gas can cause injury (frostbite) due to rapid cooling by evaporation

Treat with a corticosteroid spray as soon as possible after inhalation. Thaw the frozen parts with lukewarm water. Do not rub the affected areas. Seek immediate medical attention

### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

**Suitable extinguishing media**                      Water spray or water mist. Dry powder. Foam. Carbon dioxide

**Unsuitable extinguishing media**                      Do not use water jet

#### **5.2. Special hazards arising from the substance or mixture**

**Specific hazards**    In case of fire or excessive heat, hazardous combustion products may be produced

Exposure to fire may cause containers to rupture/explode

**Hazardous combustion products**                      In case of fire or excessive heat, hazardous combustion products may be produced such as : Arsenic and its oxides

#### **5.3. Additional information**

Cool endangered receptacles with water spray jet from a protected position

### **SECTION 6: Accidental release measures**

#### **6.1. Personal precautions, protective equipment and emergency procedures**

Avoid breathing vapours, spray mists or gases

Provide adequate ventilation

Eliminate ignition sources

Evacuate personnel to a safe place

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous

Vapours may accumulate in low areas

Personal protective equipment, see section 8


#### **6.2. Environmental precautions**

Try to stop the leak

#### **6.3. Methods and material for containment and cleaning up**

Ventilate the area

Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost)

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#### **6.4. Reference to other sections**

See also sections 8 and 13

### **SECTION 7: Handling and storage**

#### **7.1. Precautions for safe handling**

Avoid contact with skin and eyes  
 Avoid breathing vapour or mist  
 Keep away from sources of ignition - No smoking  
 Take precautionary measures against static discharge  
 For precautions, see section 2.2

#### **7.2. Conditions for safe storage, including any incompatibilities**

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place  
 Content under pressure

#### **7.3. Specific end use(s)**

None

### **SECTION 8: Exposure controls/personal protection**

#### **8.1. Control parameters**

##### **Components with occupational exposure limits**


Component	CAS N°	Exposure value type	Control parameter	Source
Arsine	7784-42-1	TWA	0.05 ppm	SUVA: Limit values of exposure to workstations
			0.16 mg/m <sup>3</sup>	
		Recommended limit value	0.0006 ppm	NIOSH 6001 / 2007 [15-minutes]
			0.002 mg/m <sup>3</sup>	

#### **8.2. Exposure controls**

##### **8.2.1. Appropriate engineering controls**

Provide adequate general and local exhaust ventilation  
 Gas detectors should be used when toxic gases may be released

##### **8.2.2. Individual protection measures, e.g. personal protective equipment**

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<b>Eye/face protection</b>	Wear goggles and a face shield when transfilling or breaking transfer connections Standard EN 166
<b>Skin / hand protection</b>	Wear protective gloves when handling gas cylinders. Standard EN 388- Gloves for protection against mechanical risks Wearing chemical resistant gloves Standard EN 374-Protective gloves against chemicals
<b>Respiratory protection</b>	Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

### 8.2.3. Environmental exposure controls


Avoid any spill or leak if it can be done safely

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

• <b>Physical state at 20°C / 101.3kPa</b>	Gas
• <b>Colour</b>	Colourless
<b>Odour</b>	No data available
<b>Odour threshold</b>	No data available
<b>pH</b>	No data available
<b>Melting point / Freezing point</b>	-117°C
<b>Boiling point</b>	-62.5°C
<b>Flash point</b>	No data available
<b>Evaporation rate</b>	No data available
<b>Flammability (solid, gas)</b>	Extremely flammable gas
<b>Explosive limits</b>	3.9 – 77.8%
<b>Vapour pressure [20°C]</b>	14.7 bar
<b>Vapour pressure [50°C]</b>	No data available
<b>Vapour density</b>	No data available
<b>Relative density, liquid (water=1)</b>	1.6
<b>Relative density, gas (air=1)</b>	2.7
<b>Water solubility</b>	0.28 g/l
<b>Partition coefficient n-octanol/water (Log Kow)</b>	No data available
<b>Auto-ignition temperature</b>	285°C
<b>Decomposition temperature</b>	300°C
<b>Viscosity</b>	No data available
<b>Explosive properties</b>	No data available

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**Oxidising properties** No data available

### **9.2. Other information**

**Molar mass** 78 g/mole  
**Critical temperature [°C]** 100.0°C  
**Relative density, gas** Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

## SECTION 10: Stability and reactivity

### **10.1. Reactivity**

No reactivity hazard other than the effects described in sub-sections below

### **10.2. Chemical stability**

Stable under recommended storage conditions

### **10.3. Possibility of hazardous reactions**

Can form explosive mixture with air  
 May react violently with oxidants

### **10.4. Conditions to avoid**

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

### **10.5. Incompatible materials**

Combustible material, halogens, oxidizing material  
 For compatibility see the latest version of ISO 11114


### **10.6. Hazardous decomposition products**

Under normal conditions of storage and use, hazardous decomposition products should not be produced

## SECTION 11: Toxicological information

### **11.1. Chemical safety assessment**

**Acute toxicity** Fatal if inhaled.  
**Skin corrosion/irritation** No data available  
**Serious eye damage/irritation** No data available  
**Respiratory or skin sensitisation** No data available  
**Germ cell mutagenicity** No data available

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<b>Carcinogenicity</b>	There is no human epidemiological study on the carcinogenicity of arsenic trihydride
<b>Reproductive toxicity</b>	No data available
<b>STOT-single exposure – Target organ(s)</b>	The toxicity of arsenic trihydride is mainly hematological and renal, but also hepatic, neurological and pulmonary
<b>STOT-repeated exposure</b>	The toxicity of arsenic trihydride is mainly hematological and renal, but also hepatic, neurological and pulmonary
<b>Ingestion hazard</b>	No data available

**SECTION 12: Ecological information**

**12.1. Toxicity**

**Assessment** Very toxic to aquatic life with long lasting effects

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

**12.6. Other adverse effects**


No data available

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

<b>Product</b>	Must not be discharged to atmosphere Burn in a chemical incinerator equipped with an afterburner and scrubber Return surplus and non-recyclable solutions to a licensed waste disposal company
<b>Contaminated container</b>	Eliminate as unused product Contact the supplier if instructions are needed
<b>OMoD Code</b>	16 05 04 Gases in pressure containers containing dangerous substances



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**SECTION 14: Transport information**

**14.1. UN number**

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
3522	3522	3522

**14.2. UN proper shipping name**

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Arsine adsorbed	Arsine adsorbed	Arsine adsorbed

**14.3. Transport hazard class(es)**

Labelling



ADR/RID  
IMDG  
IATA

2.3 : Toxic gases  
2.1 : Flammable gases  
Environmentally hazardous substances

**14.4. Packing group**

ADR/RID  
IMDG  
IATA

Not established

**14.5. Environmental hazards**

ADR/RID

Environmentally hazardous substance / mixture

IMDG

Marine pollutant

ICAO-TI / IATA-DGR

Environmentally hazardous substance / mixture


**14.6. Special precautions for user**

No data available

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable

**SECTION 15: Regulatory information**

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### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

### **15.2. Chemical safety assessment**

A chemical risk assessment (CSA) does not need to be done for this product

### **SECTION 16: Other information**


<b>Indication of changes</b>	Revised safety data sheet in accordance with commission regulation (EU) No 2015/830
<b>Abbreviations and acronyms</b>	<p>ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>CAS : Chemical Abstract Service number (USA)</p> <p>CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</p> <p>CSA : Chemical Safety Assessment</p> <p>EIGA : European Industrial Gases Association</p> <p>EINECS : European Inventory of Existing Commercial Chemical Substances</p> <p>EN : European Standard</p> <p>ATE : Acute Toxicity Estimate</p> <p>IATA : International Air Transport Association</p> <p>IMDG Code : International Maritime Dangerous Goods Code</p> <p>LC50 : Lethal Concentration to 50 % of a test population</p> <p>OMoD : Swiss Ordinance on the movement of waste</p> <p>PBT : Persistent, Bioaccumulative and Toxic</p> <p>PPE: Personal Protection Equipment</p> <p>REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006</p> <p>RID : Regulations concerning the international carriage of dangerous goods by rail</p> <p>RMM : Risk Management Measures</p> <p>STOT-SE : Specific Target Organ Toxicity - Single Exposure</p> <p>UN : United Nations</p> <p>vPvB : Very Persistent and Very Bioaccumulative</p> <p>WGK: Water Hazards Class</p>

### **Full text of H, EUH and P statements used in sections 2 and 3**

#### **Hazard statements**

H220

Extremely flammable gas

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H301	Toxic if swallowed
H330	Fatal if inhaled
H370	Causes damage to organs. (cardiovascular system, central nervous system, circulatory system, kidneys, liver, respiratory system)
H372	Causes damage to organs through prolonged or repeated exposure exposure (circulatory system)
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

**Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260	Do not breathe gas, vapours
P273	Avoid release to the environment
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention
P308+P313	IF exposed or concerned: Get medical advice
P410+P403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

**Disclaimer of liability**

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press  
They do not claim to be exhaustive and should be considered as a guide