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

### 1.1. Product identifier

Trade name	Phosgene
Chemical description	Phosgene, Carbonyl chloride
CAS N°	75-44-5
CE N°	200-870-3
Index N°	006-002-00-8
Registration n°	01-2119946799-13
Chemical formula	CCl <sub>2</sub> O

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

Relevant identified uses	Industrial and professional Test gas/Calibration gas Chemical reaction / Synthesis 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]

Physical hazards	Gases under pressure : Liquefied gas	H280
	Skin corrosion/irritation, Category 1B	H314

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Serious eye damage/eye irritation, Category 1 H318

Acute toxicity (inhalation: gas) Category 1 H330

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]

### Hazard pictograms



GHS04

GHS05

GHS06

### Signal word

Danger

### Hazard statements

H280	Contains gas under pressure; may explode if heated
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H330	Fatal if inhaled
EUH071	Corrosive to the respiratory tract

### Precautionary statements

P260	Do not breathe gas, vapours
P280	Wear protective gloves, protective clothing, eye protection, face protection
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
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
P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention
P410+403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

## 2.3. Other hazards

None

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Name	Product identifier	Concentration	Classification
Phosgene	(CAS-No.) 75-44-5 (EC-No.) 200-870-3 (EC Index-No.) 006-002-00-8 (Registration-No.) 01-2119946799-13	<= 100%	Press. Gas (Liq.), H280 Acute Tox. 1 (Inhalation: gas), H330 Skin Corr. 1B, H314 Eye Dam. 1, H318

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>	Remove contaminated clothing and shoes immediately. Wash with soap and plenty of water. Take victim immediately to hospital. 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 severe chemical burns to skin and cornea. Suitable first-aid treatment should be immediately available. Seek medical advice before using product

Prolonged exposure to small concentrations may result in pulmonary oedema

Delayed adverse effects possible

Material is destructive to tissue of the mucous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea

Refer to section 11

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

No data available

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

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

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

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

#### **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 : none that are more hazardous than the product itself

#### **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

Evacuate personnel to a safe place

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)

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

See also sections 8 and 13

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**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 measures to prevent the accumulation of electrostatic charges  
 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  
 Containers should not be stored in conditions likely to encourage corrosion  
 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
Phosgene	75-44-5	TWA	0.1 ppm	SUVA: Limit values of exposure to workstations
			0.41 mg/m <sup>3</sup>	
		OEL	0.2 ppm	SUVA: Limit values of exposure to workstations
			0.82 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 flammable / toxic gases / vapours are likely to be released

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

**Eye/face protection**

Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166

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#### Skin / hand protection

Wear protective gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical hazards  
Wear cold insulating gloves when transferring or disconnecting transfer lines Standard EN 511 - Insulating gloves against cold  
Wearing chemical resistant gloves Standard EN 374-Protective gloves against chemicals

##### For short-term use

Material: Nitrile rubber

Penetration time:> 30 min

Glove thickness: 0.4 mm

##### For long-term use

Material: Fluoroelastomer

Penetration time:> 480 min

Glove thickness: 0.7 mm

Have appropriate, chemical-resistant protective clothing ready for use in emergencies

#### Respiratory protection

When the risk assessment shows that the use of respirable respirators is appropriate, use a full face mask with EN 14387 multipurpose cartridge. If the mask is the only means of protection, use a full face respirator. Use NIOSH (US) or CEN (EU) tested and approved equipment

### 8.2.3. Environmental exposure controls

-

## SECTION 9: Physical and chemical properties

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

#### Appearance

• Physical state at 20°C / 101.3kPa	Gas
• Colour	Colourless
Odour	No data available
Odour threshold	No data available
pH	No data available
Melting point / Freezing point	-128°C
Boiling point	7.4°C
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data available
Vapour pressure [20°C]	1.6 bar
Vapour pressure [50°C]	4 bar
Vapour density	No data available
Relative density, liquid (water=1)	1.4

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<b>Relative density, gas (air=1)</b>	3.5
<b>Water solubility</b>	No data available (React with water)
<b>Partition coefficient n-octanol/water (Log Kow)</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidising properties</b>	No data available

### **9.2. Other information**

<b>Molar mass</b>	99 g/mol
<b>Critical temperature [°C]</b>	182°C
<b>Relative vapour density</b>	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**


Forms hydrogen chloride and carbon dioxide with water

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

No data available

### **10.5. Incompatible materials**

Amines, alcohols  
 Reacts with water to form corrosive acids  
 May react violently with alkalis  
 With water causes rapid corrosion of some metals  
 Reacts with most metals in the presence of moisture, liberating hydrogen, an extremely flammable gas  
 For additional information on compatibility refer to ISO 11114

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#### **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**

<b>Acute toxicity</b>	Fatal if inhaled Pulmonary pathology after acute exposures showed bronchoconstriction, hyaline membrane formation, pulmonary oedema and emphysema
<b>Skin corrosion/irritation</b>	Causes severe skin burns and eye damage
<b>Serious eye damage/irritation</b>	Causes serious eye damage
<b>Respiratory or skin sensitisation</b>	No data available
<b>Germ cell mutagenicity</b>	No data available
<b>Carcinogenicity</b>	No data available
<b>Reproductive toxicity</b>	No data available
<b>STOT-single exposure – Target organ(s)</b>	Severe corrosion to the respiratory tract at high concentrations
<b>STOT-repeated exposure</b>	No data available
<b>Ingestion hazard</b>	No data available

### **SECTION 12: Ecological information**

#### **12.1. Toxicity**

<b>Assessment</b>	Classification criteria are not met
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#### **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



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### 12.6. Other adverse effects

May cause pH changes in aqueous ecological systems

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Product</b>	<p>Must not be released into the atmosphere</p> <p>Burn in a chemical incinerator equipped with an afterburner and scrubber</p> <p>Return to the supplier the product not consumed in its original container</p>
<b>Contaminated container</b>	<p>Eliminate as unused product</p> <p>Contact the supplier if instructions are needed</p>
<b>OMoD Code</b>	<p>16 05 04</p> <p>Gases in pressure containers containing dangerous substances</p>

## SECTION 14: Transport information

### 14.1. UN number

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
1076	1076	1076

### 14.2. UN proper shipping name

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

### 14.3. Transport hazard class(es)

Labelling



ADR/RID  
IMDG  
IATA

**2.3 : Toxic gases.**  
8 : Corrosive substances

### 14.4. Packing group

ADR/RID  
IMDG  
IATA

Not established

### 14.5. Environmental hazards

ADR/RID

None

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IMDG None

ICAO-TI / IATA-DGR None

#### **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**

#### **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 CSA has not yet been carried out

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

**Indication of changes** Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

**Abbreviations and acronyms**

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS : Chemical Abstract Service number (USA)

CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CSA : Chemical Safety Assessment

EIGA : European Industrial Gases Association

EINECS : European Inventory of Existing Commercial Chemical Substances

EN : European Standard

ATE : Acute Toxicity Estimate

IATA : International Air Transport Association

IMDG Code : International Maritime Dangerous Goods Code

LC50 : Lethal Concentration to 50 % of a test population


OMoD : Swiss Ordinance on the movement of waste

PBT : Persistent, Bioaccumulative and Toxic

PPE: Personal Protection Equipment

REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

RID : Regulations concerning the international carriage of dangerous goods by rail

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RMM : Risk Management Measures  
 STOT-SE : Specific Target Organ Toxicity - Single Exposure  
 UN : United Nations  
 vPvB : Very Persistent and Very Bioaccumulative  
 WGK: Water Hazards Class

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

#### Hazard statements

H280 Contains gas under pressure; may explode if heated  
 H314 Causes severe skin burns and eye damage  
 H318 Causes serious eye damage  
 H330 Fatal if inhaled  
 EUH071 Corrosive to the respiratory tract

#### Precautionary statements

P260 Do not breathe gas, vapours  
 P280 Wear protective gloves, protective clothing, eye protection, face protection  
 P303+P361+P353+P315 IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention  
 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  
 P305+P351+P338+P315 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention  
 P410+403 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