

## Methyl Chloride

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

#### 1.1. Product identifier

<b>Name of product</b>	Methyl chloride Art-Nr(n): 2600
<b>Name of substance</b>	Chloromethane (Methyl chloride)
<b>Index No</b>	602-001-00-7
<b>EC No</b>	200-817-4
<b>REACH registration number</b>	01-2119493708-22
<b>CAS No</b>	74-87-3

#### Manufacturer / Distributor:

##### **Ehsan International Gases**

40/9, Aurangabad, Nazimabad  
#3, Karachi 74600, Pakistan.  
+92 21 36612091 – 36612907

[info@ehsan.com.pk](mailto:info@ehsan.com.pk)

[www.ehsan.com.pk](http://www.ehsan.com.pk)

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

##### Identified uses

##### ! Sector of uses [SU]

- SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys) SU11  
- Manufacture of rubber products
- SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen) SU24  
- Scientific research and development
- SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9  
- Manufacture of fine chemicals

##### ! Product categories [PC]

- PC19 - Intermediate
- PC21 - Laboratory chemicals

##### ! Process categories [PROC]

- PROC1 - Use in closed process, no likelihood of exposure
- PROC2 - Use in closed, continuous process with occasional controlled exposure
- PROC3 - Use in closed batch process (synthesis or formulation)
- PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC15 - Use as laboratory reagent

##### ! Environmental release categories [ERC]

- ERC8b - Wide dispersive indoor use of reactive substances in open systems
- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
- ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

##### Uses advised against

## Methyl Chloride

### ! Remark

Do not use for private purposes (household).

### Recommended intended purpose(s)

Basic substance.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to 67/548/EEC or 1999/45/EC

F+; R12  
Carc. Cat. 3; R40  
Xn; R48/20  
Repr. Cat. 3; R62  
Repr. Cat. 3; R63

### ! R-phrases

62 Possible risk of impaired fertility.  
63 Possible risk of harm to the unborn child.  
12 Extremely flammable.  
40 Limited evidence of a carcinogenic effect.  
48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure	Hazard statements for physical hazards
<b>Flam. Gas 1</b>	<b>H220</b>		H220 Extremely flammable.
<b>Liquef. Gas</b>	<b>H280</b>		H280 Contains gas under pressure; may explode if heated.
<b>Carc. 2</b>	<b>H351</b>		<b>Hazard statements for health hazards</b> H351 Suspected of causing cancer.
<b>Repr. 2</b>	<b>H361</b>		
<b>STOT RE 2</b>	<b>H373</b>		

H361 Suspected of damaging fertility or the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure.

### ! Additional hints

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

### 2.2. Label elements

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



GHS02



GHS04



GHS08

### Signal word

## Methyl Chloride

Danger

### Hazard statements for physical hazards

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

### Hazard statements for health hazards

- H351 Suspected of causing cancer.  
H361 Suspected of damaging fertility or the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure.

### Precautionary Statements

#### Prevention

- P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
P260 Do not breathe gas/vapours.  
P280 ! Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

- P308 + P313 IF exposed or concerned: Get medical advice/attention.

#### ! Storage

- P403 Store in a well-ventilated place.

#### Hazardous ingredients for labeling

methyl chloride

#### 2.3. Other hazards

#### ! Adverse physicochemical effects

In the case of insufficient ventilation and/or through the formation of a explosive/highly flammable mixture is possible.

#### ! Adverse human health effects and symptoms

Contact with liquid may cause cold burns/frostbite.  
Asphyxiant in high concentrations.

#### ! Information pertaining to special dangers for human and environment

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

## SECTION 3: Composition/ information on ingredients

### 3.1. Substances

CAS No 74-87-3

Chloromethane (Methyl chloride)

EC No 200-817-4

Index No 602-001-00-7

REACH registration number 01-2119493708-22

### 3.2. Mixtures

not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

Remove contaminated soaked clothing immediately.

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Adhere to personal protective measures when giving first aid.  
Seek medical advice immediately.

### **! In case of inhalation**

Remove the casualty into fresh air and keep him immobile.  
In the event of pulmonary irritation treat initially with corticoid spray, e.g. Ventolair- or Pulmicort- metered-dose aerosol (Ventolair and Pulmicort are registered trademarks).  
Seek medical treatment immediately.  
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

### **! In case of skin contact**

In case of contact with skin wash off with warm water.  
In case of frostbite rinse with plenty of water. Don't remove clothing.  
In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

### **In case of eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Call for a doctor immediately.

### **In case of ingestion**

Ingestion is not considered a potential route of exposure.

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

#### **! Physician's information / possible symptoms**

The following symptoms may occur in case of strong exposition:  
Eye defects  
Unconsciousness  
Cardiac arrhythmia (disordered cardiac rhythm).  
Delirious state vomiting Headache  
Nausea  
Confusion  
Trembling, clouded awareness, convulsions with delay of several hours  
Dizziness  
Contact with liquid may cause cold burns/frostbite.

#### **! Physician's information / possible dangers**

Risk of cardiac rhythm disturbances  
Risk of deterioration due to consumption of alcohol.  
Risk of reduced reactions (sedative)

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

#### **! Treatment (Advice to doctor)**

Treat symptoms.  
Do not give any preparations of the adrenalin-ephedrine group.  
Pulmonary oedema prophylaxis.  
Symptoms may not occur until several hours.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

#### **! Suitable extinguishing media**

Foam  
Dry powder  
Carbon dioxide  
Water spray jet

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### ! Unsuitable extinguishing media

Full water jet

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

In case of fire formation of dangerous gases possible.

Formation of explosive gas mixtures in air.

In the event of fire the following can be released:

Carbon monoxide (CO)

Hydrogen chloride (HCl)

Phosgene

### 5.3. Advice for firefighters

#### Special protective equipment for fire-fighters

Use breathing apparatus with independent air supply ( isolated ). Wear full protective clothing.

#### Additional information

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture / explode.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur.

Extinguish any other fire.

## SECTION 6: Accidental release measures

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

See chapter 8.

Remove persons to safety.

Evacuate area.

Eliminate all ignition sources if safe to do so.

Keep away sources of ignition.

### 6.2. Environmental precautions

If possible, stop flow of product.

Eliminate ignition sources.

Do not discharge into the drains/surface waters/groundwater.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Do not discharge into the subsoil/soil.

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

Ensure adequate air ventilation. Allow to vaporise.

### 6.4. Reference to other sections

Informations for safe handling see chapter 7.

Informations for personal protective equipment see chapter 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Use only in thoroughly ventilated areas.

Transfer and handle only in enclosed systems.

Take measures against electrostatically charging.

Barrels and installations thoroughly earthing (grounding ).

Treatment only in suitable rooms and systems.

Provide good room ventilation even at ground level (vapours are heavier than air).

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Prevent cylinders from falling over.  
Ensure valve protection device is correctly fitted.  
Ensure valve outlet cap nut or plug (where provided) is correctly fitted.  
Open valve slowly to avoid pressure shock.  
Do not allow backfeed into the container.  
Suck back of water into the container must be prevented.  
No water to valves, flanges and other fittings.  
Purging of pipes and valves with inert gases - to avoid: water, solvents.

### **! General protective measures**

Do not inhale gases.

### **Hygiene measures**

At work do not eat, drink and smoke.

### **! Advice on protection against fire and explosion**

The product is combustible.  
Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.  
Take precautionary measures against static discharges.  
Formation of explosive gas mixtures in air.  
Pay attention to general rules of internal fire prevention.  
Use explosion-proof equipment / fittings and non-sparking tools.

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

#### **Requirements for storage rooms and vessels**

Keep in closed original container.  
Use transportable pressure equipment.  
Suitable materials: Normalised steel and carbon steel, tempered steel, stainless steel.  
Valve: Suitable materials: Brass, copper alloys, carbon steels, stainless steel. Unsuitable materials: Aluminium alloys.

### **! Advice on storage compatibility**

Do not store with spontaneously flammable materials.  
Do not store together with combustible liquids or combustible solids.  
Do not store together with animal feedstuffs.  
Do not store together with explosives.  
Do not store together with infectious substances.  
Do not store together with radioactive material.  
Do not store together with toxic liquids or toxic solids.  
Do not store together with food.  
Do not store together with oxidizing liquids or oxidizing solids.

#### **Further information on storage conditions**

Ensure valve protection device is correctly fitted.  
Keep container tightly closed and store at cool and aired place.  
Prevent cylinders from falling over.  
Protect of heat.  
Storage temperature may not exceed 50°C (=122°F).

## Methyl Chloride

### 7.3. Specific end use(s)

#### ! Recommendation(s) for intended use

No further recommendations.  
See exposure scenario(s).

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### ! Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
74-87-3	Chloromethane	WEL, 8 hours	105	50	UK
		Short-term	210	100	
74-87-3		Methyl chloride term 200	PEL, 8 hours	100	USA, OSHA Short-

#### ! Additional advice

DNEL (workers, inhalation, long-term, systemic effects): 100 mg/m<sup>3</sup> (47,7 ppm).

### 8.2. Exposure controls

#### ! Respiratory protection

Keep self contained breathing apparatus readily available for emergency use.

Do not use any filter apparatus.

In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

#### Hand protection

Leather gloves

Glove material specification [make/type, thickness, permeation time/life]: IIR, >= 0,5 mm, > 8 min

#### ! Eye protection safety goggles

with side protection

Safety goggles, in case of increased risk add protective face shield

#### Skin protection

Safety shoes with steel toe.

Body covering work clothing, or chemical resistant suit at increased risk.

#### ! Limitation and surveillance of the environment

PNEC (freshwater): 0,2 mg/l

PNEC (sea water): 0,02 mg/l

PNEC (freshwater sediment): 0,556 mg/kg

PNEC (soil): 0,079 mg/kg

PNEC (water): 2 mg/l (intermittent emission)

See chapter 7.

#### ! Additional advice on system design

Transfer and handle only in enclosed systems.

## SECTION 9: Physical and chemical properties

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



## Methyl Chloride

**Form**

Gaseous / liquefied under pressure.

**Colour**

colourless

**Odour**

sweetish

**! Odour threshold**

10 ppm / 21 mg/m<sup>3</sup>

**Important health, safety and environmental information**

	Value	Temperature	at	Method	Remark
<b>pH value in delivery state</b>	not applicable				
<b>boiling point</b>	-24 °C		1013 hPa		
<b>melting point</b>	-97,7 °C				
<b>Flash point</b>	< -24 °C			DIN 51755	
<b>Flammable solid</b>	not applicable				
<b>Flammability (gas)</b>					Flammable.
<b>Ignition temperature</b>	625 °C			DIN 51794	
<b>Autoignition</b>	not determined				
<b>Lower explosion limit</b>	7,1 Vol-%				
<b>Upper explosion limit</b>	18,5 Vol-%				
<b>Vapour pressure</b>	4900 hPa	20 °C			
<b>Relative density</b>	921 kg/m <sup>3</sup>	20 °C	4900 hPa		information concerns to liquid phase
<b>Bulk density</b>	not applicable				
<b>Vapour density</b>	1,785				air = 1
<b>Solubility in water</b>	5,32 g/l	25 °C	1013 mbar		
<b>Solubility/other</b>					soluble in most organic solvents
<b>Partition coefficient (log p<sub>OW</sub>)</b>	0,91				
<b>Viscosity dynamic</b>	0,18 mPa*s	20 °C			information



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**Viscosity dynamic**                      0,14 mPa\*s                      50 °C

concerns to  
liquid phase

information  
concerns to  
liquid phase

**! Vapourisation rate**

No data available

**Oxidising properties**

no

**! Explosive properties**

no

**9.2. Other information**

Vapours are heavier than air.

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### SECTION 10: Stability and reactivity

**10.1. Reactivity**

See section "Possibility of hazardous reactions".

**10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

May react violently with oxidants.

**10.4. Conditions to avoid**

Formation of explosive gas/air mixtures.

Heat sources / heat - risk of bursting.

**10.5. Incompatible materials**

**! Materials to avoid**

Zinc.

Oxidants.

Water / moisture.

Alkali metals.

Earth alkali metals.

Aluminium / Aluminium alloys.

**10.6. Hazardous decomposition products**

Hydrogen chloride (HCl)

Chlorine

Phosgene

**Thermal decomposition**

Remark                      No decomposition below 400°C.

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### SECTION 11: Toxicological information

**11.1. Information on toxicological effects**

## Methyl Chloride

### Acute toxicity/Irritability/Sensitization

	Value/Validation	Species	Method	Remark
<b>LD50 acute oral</b>	not applicable			
<b>LD50 acute dermal</b>	not applicable			
<b>LC50 acute inhalation</b>	> 21800 mg/m <sup>3</sup> (4 h)	rat	OECD 403	
<b>Irritability skin</b>	non-irritant			

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## Methyl Chloride

	Value/Validation	Species	Method	Remark
<b>Irritability eye</b>	non-irritant			
<b>Skin sensitization</b>	not determined			
<b>Sensitization respiratory system</b>	not determined			

### Subacute Toxicity - Carcinogenicity

	Value	Species	Method	Validation
<b>Subacute Toxicity</b>	Sub-acute inhalation toxicity			
<b>Chronic Toxicity</b>	NOAEC 465 mg/m <sup>3</sup> (2 a)	Rats and Mice.		Target organs: liver, urinary tract, testis, epididymis (rats). Disorders of the nervous system (mice). Neoplastic lesions, renal tubuloepithelial hyperplasia, karyomegaly (male mice).
	Inhalation			
<b>Mutagenicity</b>				Information on genotoxicity in vivo and in vitro available.
<b>Reproduction-Toxicity</b>	NOAEC 310 mg/m <sup>3</sup>	Rat	OECD 416	Indications of toxic effects are available from reproduction studies in animals.
	Inhalation			
<b>Carcinogenicity</b>				Indications of possible carcinogenic effects in animal studies are available.

#### ! Specific target organ toxicity (single exposure)

no

#### ! Specific target organ toxicity (repeated exposure)

May cause damage to organs through prolonged or repeated exposure by inhalation.

#### ! Aspiration hazard

not applicable

#### Experiences made from practice

May be absorbed through the skin.

May cause frostbite.

Gases have a suffocating effect.

Inhalation causes narcotic effect/intoxication.

## Methyl Chloride

### SECTION 12: Ecological information

#### 12.1. Toxicity

##### Ecotoxicological effects

	Value	Species	Method	Validation
<b>Fish</b>	LC50 270 mg/l (96 h)	Menicia beryllina		
<b>Daphnia</b>	EC50 200 mg/l (48 h)	Daphnia magna	OECD 202	
<b>Algae</b>	TTC 550 mg/l (168 h)	Microcystis aeruginosa (Blauualge)		
<b>Bacteria</b>	TTC 500 mg/l (24 h)	Pseudomonas putida		

At normal temperature very highly volatile or gaseous product that can be released to atmosphere. Elimination test cannot be employed.

##### Biological degradability

readily degradable

##### Degradability

readily degradable

**Biological** not determined

#### 12.2. Persistence and degradability

##### Physico-chemical degradability

##### eliminability

#### 12.3. Bioaccumulative potential

Because of the n-octanol/water distribution coefficient (log K<sub>ow</sub>) accumulation in organisms is not expected. **12.4.**

##### Mobility in soil

Adsorption in the soil is not likely.

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

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

#### 12.6. Other adverse effects

ODP: 0,02

#### ! General regulation

Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

## Methyl Chloride

**Waste code No.**

16 05 04\*

**Name of waste**

gases in pressure containers (including halons) containing dangerous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

**Recommendations for the product**

Dispose of as hazardous waste.

**Recommendations for packaging**

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

### SECTION 14: Transport information

**Land and inland navigation transport ADR/RID**

UN 1063 METHYL CHLORIDE, 2.1, (B/D), Classification code: 2F

**Marine transport IMDG**

UN 1063 METHYL CHLORIDE, 2.1

**Air transport ICAO/IATA-DGR**

UN 1063 Methyl chloride, 2.1

**Special precautions for user**

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

No transport as bulk according IBC - Code.

### SECTION 15: Regulatory information

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

**! Other regulations (EU)**

Regulation (EU) No. 1005/2009 concerning materials, which cause damage to the ozone layer.

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 40.

Directive 96/82/EC on the control of major-accident hazards involving dangerous substances.

**! VOC standard**

**VOC content**

$\geq 99,9\%$  20 °C 4900 hPa

**15.2. Chemical Safety Assessment**

For this substance a chemical safety assessment has been carried out.

Exposure scenarios (ESs) see [http://www.ghc.de/pdf\\_e/es2600.001e.pdf](http://www.ghc.de/pdf_e/es2600.001e.pdf).

### SECTION 16: Other information

**Recommended uses and restrictions**

National and local regulations concerning chemicals shall be observed.

**! Further information**

All declarations of safety-data-sheet refer to pure substance.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product. Indication of changes: "!" = Data changed compared with the previous version.

## Methyl Chloride

**Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)**

R 12 Extremely flammable.

R 40 Limited evidence of a carcinogenic effect.

R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

H351 Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H361 Suspected of damaging fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H373 May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).