

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.01.2021

Revision: 24.01.2021

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

- **Product identifier**
- **Trade name:** Tetrahydrofuran
- **CAS Number:**  
109-99-9
- **EC number:**  
203-726-8
- **Index number:**  
603-025-00-0
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** Petrochem Middle East FZE – Dubai
- **Further information obtainable from:**

HEALTH	2
FIRE	3
REACTIVITY	0

Product safety department.  
sales@petrocheme.com

## 2 Hazards identification

- **Classification of the substance or mixture**



Flam. Liq. 2 H225 Highly flammable liquid and vapour.



Eye Irrit. 2 H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements**  
The substance is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS02 GHS07

- **Signal word** *Danger*
- **Hazard statements**  
*Highly flammable liquid and vapour.*  
*Causes serious eye irritation.*  
*May cause respiratory irritation.*
- **Precautionary statements**  
*Keep away from heat/sparks/open flames/hot surfaces. No smoking.*  
*Use explosion-proof electrical/ventilating/lighting equipment.*  
*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

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*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**  
109-99-9 tetrahydrofuran
- **Identification number(s)**
- **EC number:** 203-726-8
- **Index number:** 603-025-00-0

### 4 First aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**  
*Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
*No further relevant information available.*

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
*CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
*Wear protective equipment. Keep unprotected persons away.*
- **Environmental precautions:**  
*Dilute with plenty of water.*  
*Do not allow to enter sewers/ surface or ground water.*
- **Methods and material for containment and cleaning up:**  
*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*  
*Ensure adequate ventilation.*

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- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

### Ingredients with limit values that require monitoring at the workplace:

#### 109-99-9 tetrahydrofuran

PEL (USA)	Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
REL (USA)	Short-term value: 735 mg/m <sup>3</sup> , 250 ppm Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
TLV (USA)	Short-term value: 295 mg/m <sup>3</sup> , 100 ppm Long-term value: 147 mg/m <sup>3</sup> , 50 ppm Skin
IOELV (EU)	Short-term value: 300 mg/m <sup>3</sup> , 100 ppm Long-term value: 150 mg/m <sup>3</sup> , 50 ppm Skin
WEL (Great Britain)	Short-term value: 300 mg/m <sup>3</sup> , 100 ppm Long-term value: 150 mg/m <sup>3</sup> , 50 ppm Sk

### Ingredients with biological limit values:

#### 109-99-9 tetrahydrofuran

BEI (USA)	2 mg/L Medium: urine Time: end of shift Parameter: Tetrahydrofuran
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- **Additional information:** The lists valid during the making were used as basis.

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- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

**Form:** Fluid

**Colour:** Colourless

- **Odour:** Ether-like

- **Odour threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

**Melting point/freezing point:** Undetermined.

**Initial boiling point and boiling range:** Undetermined.

- **Flash point:** <23 °C

- **Flammability (solid, gas):** Not applicable.

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Not determined.

- **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

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· <b>Explosion limits:</b>	
Lower:	1.5 Vol %
Upper:	12 Vol %
· <b>Vapour pressure at 20 °C:</b>	200 hPa
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water:</b>	Fully miscible.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**
- |  |      |                   |
|--|------|-------------------|
| · <b>LD/LC50 values relevant for classification:</b> |      |                   |
| Oral   | LD50 | 2,500 mg/kg (rat) |
- **Primary irritant effect:**
  - **Skin corrosion/irritation** No irritant effect.
  - **Serious eye damage/irritation** Irritating effect.
  - **Respiratory or skin sensitisation** No sensitising effects known.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## 14 Transport information

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	UN2056
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	2056 TETRAHYDROFURAN TETRAHYDROFURAN
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	3 Flammable liquids. 3
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	II
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Hazard identification number (Kemler code):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Stowage Category</b></li> </ul>	Warning: Flammable liquids. 33 3-06 B
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>	Not applicable.

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· **Transport/Additional information:**

· **ADR**

- **Limited quantities (LQ)** 1L
- **Excepted quantities (EQ)** Code: E2
- Maximum net quantity per inner packaging: 30 ml*
- Maximum net quantity per outer packaging: 500 ml*
- **Transport category** 2
- **Tunnel restriction code** D/E

· **IMDG**

- **Limited quantities (LQ)** 1L
- **Excepted quantities (EQ)** Code: E2
- Maximum net quantity per inner packaging: 30 ml*
- Maximum net quantity per outer packaging: 500 ml*

- **UN "Model Regulation":** UN 2056 TETRAHYDROFURAN, 3, II

## 15 Regulatory information

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

· **GHS label elements**

*The substance is classified and labelled according to the Globally Harmonised System (GHS).*

· **Hazard pictograms**



GHS02    GHS07

· **Signal word** *Danger*

· **Hazard statements**

*Highly flammable liquid and vapour.*

*Causes serious eye irritation.*

*May cause respiratory irritation.*

· **Precautionary statements**

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

*Use explosion-proof electrical/ventilating/lighting equipment.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** *Substance is not listed.*

· **Seveso category** *P5c FLAMMABLE LIQUIDS*

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** *5,000 t*

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** *50,000 t*

· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

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**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Product safety department.

· **Contact:** PME

· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Flam. Liq. 2: Flammable liquids – Category 2*

*Eye Irrit. 2: Serious eye damage/eye irritation – Category 2*

*STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

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