

Safety Data Sheet

According to 91/155 EEC

Printing date 24.06.2009

Revision: 24.06.2009

1 Identification of the substance/preparation and of the company/undertaking

· **Product details**

· **Trade name:** tetrahydrofuran

Manufacturer/Supplier:

Asiatic Chemicals Pakistan



Address

30-Mussa Market 2nd Floor,
Opp Sindh Madrasah
Shahrah-e-Liaquat

Mobile

0092-320-4320301

Email

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0092-21-32422537

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0092-21-3241554

2 Composition/information on ingredients

· **Chemical characterization:**

· **CAS No. Description**

109-99-9 tetrahydrofuran

· **Identification number(s)**

· **EINECS Number:** 203-726-8

· **Index number:** 603-025-00-0

3 Hazards identification

· **Hazard description:**



Xi Irritant

F Highly flammable

· **Information concerning particular hazards for human and environment:**

R 11 Highly flammable.

R 19 May form explosive peroxides.

R 36/37 Irritating to eyes and respiratory system.

4 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.

5 Fire-fighting measures

· **Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.

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- **Measures for environmental protection:**

Do not allow product to reach sewage system or any water course.
 Inform respective authorities in case of seepage into water course or sewage system.
 Dilute with plenty of water.
 Do not allow to enter sewers/ surface or ground water.

- **Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Ensure adequate ventilation.

7 Handling and storage

- **Handling:**

- **Information for safe handling:** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
 Keep ignition sources away - Do not smoke.
 Protect against electrostatic charges.

- **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.

8 Exposure controls/personal protection

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

- **Ingredients with limit values that require monitoring at the workplace:**

109-99-9 tetrahydrofuran

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

- **Additional information:** The lists valid during the making were used as basis.

- **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.

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· **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

· **General Information**

Form:	Fluid
Colour:	Colourless
Odour:	Ether-like

· **Change in condition**

Melting point/Melting range: -108.5°C

Boiling point/Boiling range: 65.5°C

· **Flash point:** -21 - ca°C

· **Ignition temperature:** 230°C

· **Danger of explosion:** May form explosive peroxides.

· **Explosion limits:**

Lower: 1.5 Vol %

Upper: 12 Vol %

· **Vapour pressure at 20°C:** 200 hPa

· **Density at 20°C:** 0.8892 g/cm³

· **Solubility in / Miscibility with water:** Fully miscible.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Dangerous reactions** No dangerous reactions known.

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· **Dangerous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

Oral	LD50	2500 mg/kg (rat)
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· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

12 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.

13 Disposal considerations

· **Product:**

· **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

· **Land transport ADR/RID (cross-border)**



· **ADR/RID class:** 3 Flammable liquids.

· **Danger code (Kemler):** 33

· **UN-Number:** 2056

· **Packaging group:** II

· **Hazard label:** 3

· **Description of goods:** 2056 TETRAHYDROFURAN

· **Maritime transport IMDG:**



· **IMDG Class:** 3

· **UN Number:** 2056

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- **Label** 3
- **Packaging group:** II
- **EMS Number:** F-E,S-D
- **Marine pollutant:** No
- **Proper shipping name:** TETRAHYDROFURAN

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 2056
- **Label** 3
- **Packaging group:** II
- **Proper shipping name:** TETRAHYDROFURAN

15 Regulatory information

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

- **Code letter and hazard designation of product:**



Xi Irritant
F Highly flammable

- **Risk phrases:**

11 Highly flammable.
19 May form explosive peroxides.
36/37 Irritating to eyes and respiratory system.

- **Safety phrases:**

2 Keep out of the reach of children.
16 Keep away from sources of ignition - No smoking.
29 Do not empty into drains.
33 Take precautionary measures against static discharges.

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 MSDS:** Product safety department
- **Contact:** Mr. Menon