



## Safety Data Sheet

According to Regulation (EC) 1907/2006

### 1736 Tetrahydrofuran

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

##### 1.1 Product identifier

Name:

Tetrahydrofuran

##### Synonym:

Diethylene Oxide, Tetramethylene Oxide, THF

**CAS:** [109-99-9]

**REACH Registration Number:** 01-2119444314-46-XXXX

##### 1.2 Relevant identified uses of the substance or mixture:

Solvent.

Use as laboratory chemicals.

Use in coatings.

Use in Cleaning Agents.

Corrosion Inhibiter.

##### 1.3 Identification of the company or firm:

PANREAC QUIMICA S.L.U.

C/Garraf 2

Polígono Pla de la Bruguera

E-08211 Castellar del Vallès

(Barcelona) Spain

Tel. (+34) 937 489 400

e-mail: [product.safety@panreac.com](mailto:product.safety@panreac.com)

##### 1.4 Emergency telephone:

Single telephone number for emergency calls: 112 (EU)

Tel.: (+34) 937 489 499

#### 2. Identification of dangers

##### 2.1 Classification of the substance or the mixture.

**Classification Regulation (CE) nº 1272/2008.**

Flam. Liq. 2

Eye Irrit. 2

STOT SE 3

Carc. 2

**Classification (67/548/CEE or 1999/45/CE).**

**F** Highly flammable  
**Xn** Harmful

R11  
R19  
R36/37  
R40

**2.2 Label elements:**

**Hazard Pictograms**



**Signal word**

Danger

**Hazard statements**

H225 Highly flammable liquid and vapour.  
EUH019 May form explosive peroxides.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P243 Take precautionary measures against static discharge.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
P501 Dispose of contents/container according to Directive 94/62/CE or 2008/98/CE.

For the full text of the R-phrases mentioned in this section, see section 16.

**2.3 Other hazards:**

No further relevant information available.

**3. Composition/information on ingredients**

Name: Tetrahydrofuran

Formula: C<sub>4</sub>H<sub>8</sub>O M.= 72,11 CAS [109-99-9]

EC number (EINECS): 203-726-8

EC index number: 603-025-00-0

REACH Registration Number: 01-2119444314-46-XXXX

## **4. First aid measures**

### **4.1 General indications:**

Never provide drink or induce vomiting in the event of loss of consciousness.

### **4.2 Inhaling:**

Take the person out into the fresh air. In the event of suffocation, proceed immediately to provide artificial respiration. Seek immediate medical assistance. In case of loss of consciousness, position the person lying on his/her side. Seek immediate medical assistance.

### **4.3 Contact with the skin:**

Wash with plenty of water. Remove contaminated clothing.

### **4.4 Eyes:**

Wash with plenty of water (for at least 15 minutes), keeping eyelids open. Seek medical assistance.

### **4.5 Swallowing:**

Call for medical help. Wash mouth out immediately. Drink large amounts of water. Do not induce vomiting. Risk of aspiration.

#### **· Most important symptoms and effects, both acute and delayed:**

See Section 11 for more information.

#### **· Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

#### **· Information for doctor:**

No further relevant information available.

## **5. Firefighting measures**

### **5.1 Suitable extinguishing media:**

Carbon dioxide (CO<sub>2</sub>). Alcohol resistant foam. Dry powder. Atomized water.

### **5.2 Unsuitable extinguishing media:**

Running water.

### **5.3 Special hazards arising from the substance or mixture:**

Combustible. Keep away from sources of ignition. The fumes are heavier than air, so they may spread at floor level. Auf Rückzündung achten In the event of fire, toxic fumes may form: CO y CO<sub>2</sub>.

### **5.4 Advice for firefighters:**

Suitable clothing and footwear. Self-contained breathing equipment. Cool the recipients with water.

## **6. Accidental release measures**

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

Do not inhale the fumes. Protect the respiratory tracts. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate all non-essential personnel. Avoid sources of ignition. Do not smoke.

## **6.2 Environmental precautions:**

Do not allow it to enter the drainage system. Avoid pollution of the soil, water supplies and drains.

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

Collect up with absorbent materials (Panreac General Absorbent, Kieselguhr, etc.) or, if none available, dry sand or earth, and deposit in waste containers for subsequent elimination in accordance with current legislation. Clean any remains with plenty of water.

# **7. Handling and storage**

## **7.1 Precautions for safe handling:**

Avoid the formation of electrostatic charges. Ensure good ventilation and renewal of the air in the premises. Avoid breathing dust, fume, gas, mist, vapours or spray. Avoid contact with the skin, eyes or clothing. Use personal protective equipment as required.

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

Well sealed containers. In a cool, dry, well ventilated place. Away from light. Away from sources of ignition and heat.

**Recommended storage temperature:** Room temperature.

• **Storage class:** 3

**Technical instructions (air):** Highly flammable.

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

No further relevant information available.

# **8. Exposure controls/personal protection**

## **8.1 Exposure controls:**

Ensure good ventilation and renewal of the air in the premises. Do not inhale the fumes.

## 8.2 Control parameters:

VLA-EC(Spain): 100 ppm = 300 mg/m<sup>3</sup> dermal resorption

VLA-ED: 50 ppm = 150 mg/m<sup>3</sup> dermal resorption

Factor for short-term value(Germany): 2

## Predicted No Effect Concentration (PNEC)

Freshwater: 4,32mg/l

Marine water: 0,432mg/l

Sporadic release: 21,6mg/l

Purifying plant: 4,6mg/l

Freshwater Sediment: 23,3mg/kg

Marine water Sediment: 2,33mg/kg

Soil: 2,13mg/kg

Oral use (secondary poisoning): 67mg/kg

## Derived No Effect Level (DNEL)

Workers Inhalation, long term (local): 150 mg/m<sup>3</sup>

Workers Inhalation, long term (systemic): 50 ppm

Workers Dermal, long exposure (systemic): 25mg/kg

Population Inhalation, long term (systemic): 62 mg/m<sup>3</sup>

Population, Dermal, long exposure (systemic): 15mg/kg

Population Inhalation, acute (local): 150 mg/m<sup>3</sup>

Population Inhalation, acute (systemic): 150 mg/m<sup>3</sup>

## 8.3 Respiratory protection:

In the event of fumes forming/aerosols, use suitable respiratory protection. Filter A.

## 8.4 Hand protection:

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

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.

- **For the permanent contact gloves made of the following materials are suitable:**

**Material:** Butyl rubber. Recommended thickness of the material:  $\geq 0,7$  mm

Breakthrough time:  $\geq 10$  min.

- **As protection from splashes gloves made of the following materials are suitable:**

**Material:** Butyl rubber. Recommended thickness of the material:  $\geq 0,7$  mm

Breakthrough time:  $\geq 10$  min.

## 8.5 Eye/face protection:

Use safety glasses.

### **8.6 Individual hygiene measures:**

Remove contaminated clothing. Use suitable work clothing. Wash hands and face before breaks and when the job is done.

### **8.7 Environmental exposure controls:**

Avoid pollution of the soil, water supplies and drains.

## **9. Physical and chemical properties**

Appearance: liquid

Colour: Colourless

Granulometry: N/A

Odour: Characteristic.

pH:

N/A

Melting point/freezing point: -108,5 °C

Initial boiling point and boiling range: 66 °C

Flash point: - 18 °C

Flammability (solid, gas):

N/A

Upper/lower flammability or explosive limits: 12 %(V) / 1,5 %(V)

Vapour pressure: 200 hPa (20 °C)

Vapour density: N/A

Relative density:

Insertar Aquí Grupo de repetición

(20/4) 0,889 g/ml

Solubility: Miscible with water

Partition coefficient: n-octanol/water:

N/A

Auto-ignition temperature: 230 °C

Decomposition temperature: N/A

Kinematic viscosity: N/A

Dynamic viscosity: 0,47 mPa.s (25 °C)

## **10. Stability and reactivity**

### **10.1 Conditions to avoid:**

High temperatures.

### **10.2 Incompatible materials:**

Oxidant agents. Alkaline hydroxides. Hydrides. Air Oxygen

### **10.3 Hazardous decomposition products:**

Peroxides.

### **10.4 Chemical stability:**

Light-sensitive. Exposure to air encourages decomposition. The gases/fumes can form explosive mixtures with the air. Can form explosive peroxides.

## **11. Toxicological information**

### **11.1 Acute toxicity:**

LD50 oral rat : 1.650 mg/kg

LD50 skn rat : > 2.000 mg/kg (OECD 402)

LC50 inh rat : >14,7 mg/l 6h

## **11.2 Dangerous effects for health:**

**Skin corrosion/irritation:** irritations, slight **Serious eye damage/irritation:**

Strongly irritant in rabbits. Serious injuries **Respiratory or skin sensitisation:**

No evidence. No evidence. **Germ cell mutagenicity: Carcinogenicity:** Carc. 2

**Reproductive toxicity:** No evidence. **STOT- single exposure:** Data not available.

**STOT-repeated exposure:** Data not available. **Aspiration hazard:** Data not available.

·**Most important symptoms and effects acute:** If inhaled: Irritations to the mucosae, breathing difficulties., kidney problems, hepatic problems

## **12. Environmental information**

### **12.1 Toxicity:**

Fish LC50 2160 mg/l (96h)

(Daphnia magna) EC50 3485 ppm (48h)

Algae NOEC 3700 mg/l (8d)

### **12.2 Persistence and Degradability :**

Easily biodegradable product.

### **12.3 Bioaccumulative potential:**

Non-bioaccumulable product.

log Pow = 0,45 (25°C)

BCF 3,16

### **12.4 Mobility in soil :**

Data not available.

### **12.5 Assessment PBT and MPMB :**

According to Annex XIII of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Does not meet the criteria for PBT (persistent / bioaccumulative / toxic).

According to Annex XIII of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Does not meet the criteria vPvB (very persistent / very bioaccumulative).

### **12.6 Other adverse effects:**

If suitable handling conditions are maintained, no ecological problems are to be anticipated.

### **12.7 General notes:**

· **Water hazard class:**

**(German Regulation) (Assessment by list):**

1 slightly hazardous for water.

**(Dutch Regulation):**

10 May cause long-term adverse effects in the aquatic environment.

## **13. Disposal considerations**

### 13.1 Waste treatment methods:

In the European Union, there are no homogeneous standards established for elimination of chemical waste, which is waste of a special nature, and treatment and elimination of same is subject to the domestic legislation in each country.

In view of this, in each case, you should contact the competent authority or those companies legally authorized for elimination of waste.

2001/573/EC: Council Decision of 23 July 2001 amending Commission Decision 2000/532/EC as regards the list of wastes. Council Directive 91/156/EEC of 18 March 1991 amending Directive 75/442/EEC on waste.

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### 13.2 Contaminated containers:

Contaminated containers and packaging of dangerous substances or preparations must be treated in the same manner as the actual products contained in them.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

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## 14. Transport information

Overland (ADR):

Technical name: TETRAHYDROFURAN

UN 2056 Class: 3 Packaging group: II (D/E)

By sea (IMDG):

Technical name: TETRAHYDROFURAN

UN 2056 Class: 3 Packaging group: II

By air (ICAI-IATA):

Technical name: Tetrahydrofuran

UN 2056 Class: 3 Packaging group: II

Packaging instructions: CAO 364 PAX 353

## 15. Regulatory information

For this product a chemical safety assessment was carried out.

## 16. Other information

### Other precautionary statements

### Labelling (65/548/CEE or 1999/45/CE)

R-phrase(s):	<b>R11</b> Highly flammable. <b>R19</b> May form explosive peroxides. <b>R36/37</b> Irritating to eyes and respiratory system. <b>R40</b> Limited evidence of a carcinogenic effect.
S-phrase(s):	<b>S16</b> Keep away from sources of ignition - No smoking. <b>S29</b> Do not empty into drains. <b>S33</b> Take precautionary measures against static discharges. <b>S36/37</b> Wear suitable protective clothing and gloves.



Version and revision date : 6 07.10.2013

Remplaced: 24.09.2012

In respect of the previous review, changes have been made to the following sections: 1,4,5,6,7,8,10,11,12,15

The information included in this Safety Data Sheet is based on our most up-to-date knowledge, and is solely intended to inform regarding aspects of safety; the properties and characteristics indicated herein are not guaranteed.