



## Safety Data Sheet

Date of Issue: 02.12.2024

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### 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Company Name** : ECP Limited  
**Address** : PO Box 34125, Birkenhead, Auckland 0746  
**Telephone** : +64 9 480 4386  
**Facsimile** : +64 9 480 4385  
**Emergency phone number** : 0800 243 622 (24 hours)

<b>Product Name</b>	<b>Tetrahydrofuran HPLC</b>
<b>Product Code</b>	44402
<b>CAS No.</b>	109-99-9

**Recommended use** : Laboratory Investigations

### 2: Hazard's identification

#### 2.1 GHS Classification

Flammable liquids (Category 2), H225  
Acute toxicity, Oral (Category 4), H302  
Skin corrosion/irritation (Category 2), H315  
Serious eye damage/eye irritation (Category 2), H319  
Carcinogenicity (Category 2), H351  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336  
Specific target organ toxicity - repeated exposure (Category 2), H373

#### 2.2 GHS Label elements, including precautionary statements

##### Pictogram



**Signal Word** : **Danger**

##### Hazard Statements

H225 Highly flammable liquid and vapor.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs through prolonged or repeated exposure.

##### Precautionary Statements

###### Prevention

P201 Obtain special instructions before use.

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
No smoking.
- P260 Do not breathe mist or vapors.
- P264 Wash skin thoroughly after handling.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

### 2.3 Other hazards

May form explosive peroxides.

## 3: Composition/information on ingredients

### 3.1 Substances

Synonyms	:	THF
Formula	:	C <sub>4</sub> H <sub>8</sub> O
Molecular weight	:	72.11 g/mol
CAS-No.	:	109-99-9
EC-No.	:	5-53
Index-No.	:	603-025-00-0

## 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

## **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## **5.4 Further information**

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## **6: Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material. Dispose of properly.

Clean up affected area.

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

For disposal see section 13.

## **7: Handling and storage**

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

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

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

#### **Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Test for peroxide formation periodically and before distillation.

#### **Storage class**

Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits Table

Component	CAS No.	Value	Control parameters	Basis
Tetrahydrofuran	109-99-9	WES- STEL	100 ppm 300 mg/m <sup>3</sup>	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
	Remarks		Suspected human carcinogen Skin absorption	
		WES- TWA	50 ppm 150 mg/m <sup>3</sup>	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
			Suspected human carcinogen Skin absorption	

#### Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological Specimen	Basis
Tetrahydrofuran	109-99-9	THF	2mg/g creatinine	Urine	New Zealand. Biological Exposure Indices
		Remarks	End of exposure or shift (within 1 hour of end of exposure)		

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards.

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

##### Body Protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type or respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards.

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Physical state	:	liquid
b) Color	:	No data available
c) Odor	:	No data available
d) Melting point/freezing point	:	
Melting point	:	-108.44 °C - (ECHA)
e) Initial boiling point and boiling range	:	65 °C at 1,013.25 hPa - (ECHA)
f) Flammability (solid, gas)	:	No data available
g) Upper/lower flammability or explosive limits	:	
Upper explosion limit	:	12.4 %(V) - (THF)
Lower explosion limit	:	1.5 %(V)
h) Flash point	:	-21.2 °C - closed cup - DIN 51755 Part 1
i) Autoignition temperature	:	215 °Cat 1,013 hPa - DIN 51794
j) Decomposition temperature	:	No data available
k) pH	:	ca.7 - 8
l) Viscosity	:	
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	0.359 mPa.s at 50°C 0.456 mPa.s at 25°C
m) Water solubility	:	miscible
n) Partition coefficient: n-octanol/water	:	
log Pow	:	0.45 at 25 °C - Bioaccumulation is not expected.
o) Vapor pressure	:	170 hPa at 20 °C - (THF)
p) Density	:	0.89 g/cm <sup>3</sup> at 20 °C
Relative density	:	No data available
q) Relative vapor density	:	No data available
r) Particle characteristics	:	No data available
s) Explosive properties	:	No data available
t) Oxidizing properties	:	none

## 10: Stability and reactivity

### 10.1 Reactivity

Formation of peroxides possible.

Vapors may form explosive mixture with air.

### 10.2 Chemical stability

Sensitivity to light

Sensitive to air.

The product is chemically stable under standard ambient conditions (room temperature) .

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Distillation (Risk of explosion).

Warming.

Moisture.

### 10.5 Incompatible materials

No data available

## 10.6 Hazardous decomposition products

Peroxides

In the event of fire: see section 5

## 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 1,650 mg/kg

Remarks: (ECHA)

Symptoms: Irritation of mucous membranes

LC50 Inhalation - Rat - male and female - 6 h - > 14.7 mg/l - vapor  
(US-EPA)

LD50 Dermal - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 72 h

(Draize Test)

Remarks: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation.

Remarks: (IUCLID)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: inhalation (vapor)

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

### 11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 4 Weeks

RTECS: LU5950000

irritant effects, Cough, Shortness of breath, narcosis, somnolence

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

In high doses:

somnolence

narcosis

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

## 12: Ecological information

### 12.1 Toxicity

Toxicity to fish

flow-through test LC50 - Pimephales promelas (fathead minnow) - 2,160 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic

static test EC50 - Daphnia magna (Water flea) - 3,485 mg/l - 48 h  
(OECD Test Guideline 202)

Invertebrates Toxicity to fish(Chronic toxicity)

flow-through test NOEC - Pimephales promelas (fathead minnow) - 216 mg/l - 33 d  
Remarks: (ECHA)

### 12.2 Persistence and degradability

Biodegradability aerobic Biochemical oxygen demand - Exposure time 28 d

Result: 39 % - Not readily biodegradable.

(OECD Test Guideline 301D)

### 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 not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

## 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

## 14: Transport Information Table

		ADR/RID – European packaging certification	IMDG International Maritime Dangerous Goods Code	IATA – DGR International Air Travel Association – Dangerous Goods Regulations
14.1	UN Number	2056	2056	2056
14.2	UN Proper Shipping name	TETRAHYDROFURAN	TETRAHYDROFURAN	Tetrahydrofuran
14.3	Transport Hazard Class	3	3	3
14.4	Packaging group	II	II	II
14.5	Environmental Hazards	No	No	no
14.6	Special precautions for user	none		

### Other regulations

Hazchem Code : •2YE

## 15: Regulatory information

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

#### National regulatory information

HSNO Approval Code: HSR001224

HSNO Group Standard Approval: HSR002596 - Laboratory Chemicals and Reagent Kits Group Standard 2006

Tracking Required: not required

Approved Handler Cert.: not required



## 16: Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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