

## MATERIAL SAFETY DATA SHEET

Version 4.12  
 Revision Date 12/26/2016  
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## 1. PRODUCT AND COMPANY IDENTIFICATION

**1.1 Product identifiers** Product name : 2-Methyltetrahydrofuran

CAS-No. : 96-47-9

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company detail: CHEMBALL (HANGZHOU) CO.,LTD  
 1314,Jinjun plaza, Shuixiang Road, Hangzhou, China, 310020  
 Tel:0086-571-86539522, FAX:0086-571-86539526

**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

## 2. HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 2), H225  
 Acute toxicity, Oral (Category 4), H302  
 Skin irritation (Category 2), H315  
 Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

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

Pictogram



Signal word

Danger

Hazard statement(s)

H225  
 H302  
 H315  
 H318

Highly flammable liquid and vapour.  
 Harmful if swallowed.  
 Causes skin irritation.  
 Causes serious eye damage.

Precautionary statement(s)

P210  
 P233  
 P240  
 P241  
 P242

Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 Keep container tightly closed.  
 Ground/bond container and receiving equipment.  
 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
 Use only non-sparking tools.

P243	Take precautionary measures against static discharge.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms : Tetrahydrosilvan  
Tetrahydro-2-methylfuran

Formula : C<sub>5</sub>H<sub>10</sub>O  
Molecular weight : 86.13 g/mol  
CAS-No. : 96-47-9  
EC-No. : 202-507-4

#### Hazardous components

Component	Classification	Concentration
<b>Tetrahydro-2-methylfuran</b>		
	Flam. Liq. 2; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; H225, H302, H315, H318	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. 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

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## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

No data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

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

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

### 7.3 Specific end use(s)

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

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### **Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

### 8.2 Exposure controls

#### **Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## Personal protective equipment

### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### 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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 10 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., 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 respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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 such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Appearance                                   | Form: liquid<br>Colour: colourless   |
| b) Odour  | No data available  |
| c) Odour Threshold                              | No data available  |
| d) pH   | No data available  |
| e) Melting point/freezing point                 | Melting point/freezing point: < -20 °C (< -4 °F) at 1,013 hPa (760 mmHg) - OECD Test Guideline 102 |
| f) Initial boiling point and boiling range      | 78 - 80 °C (172 - 176 °F) - lit.   |
| g) Flash point                                  | -10.0 °C (14.0 °F) - closed cup  |
| h) Evaporation rate                             | No data available  |
| i) Flammability (solid, gas)                    | No data available  |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 5.7 %(V)<br>Lower explosion limit: 1.2 %(V)                                 |
| k) Vapour pressure                              | No data available  |
| l) Vapour density                               | No data available  |
| m) Relative density                             | 0.86 g/cm <sup>3</sup> at 25 °C (77 °F)  |

- |   |   |
|---|---|
| n) Water solubility                       | 140 g/l - soluble                                   |
| o) Partition coefficient: n-octanol/water | log Pow: 1.260                                      |
| p) Auto-ignition temperature              | 260 °C (500 °F) at 995 - 1,009 hPa (746 - 757 mmHg) |
| q) Decomposition temperature              | No data available                                   |
| r) Viscosity                              | 0.576 mm <sup>2</sup> /s at 20 °C (68 °F) -         |
| s) Explosive properties                   | No data available                                   |
| t) Oxidizing properties                   | No data available                                   |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

Contains the following stabiliser(s):

BHT (0.025 %)

### 10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents, Strong bases, Strong acids

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - female - > 300 mg/kg  
(OECD Test Guideline 420)

LC50 Inhalation - Rat - 4 h - 6000 ppm

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

No data available

#### Skin corrosion/irritation

Skin - in vitro assay

Result: Irritating to skin.

(OECD Test Guideline 431)

#### Serious eye damage/eye irritation

Eyes - In vitro study

Result: Risk of serious damage to eyes.

(OECD Test Guideline 437)

#### Respiratory or skin sensitisation

in vivo assay - Mouse

Did not cause sensitisation on laboratory animals.  
(OECD Test Guideline 429)

#### **Germ cell mutagenicity**

reverse mutation assay

S. typhimurium

Result: negative

#### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### **Reproductive toxicity**

No data available

No data available

#### **Specific target organ toxicity - single exposure**

No data available

#### **Specific target organ toxicity - repeated exposure**

No data available

#### **Aspiration hazard**

No data available

#### **Additional Information**

RTECS: LU2800000

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

Lungs - Irregularities - This information is not available.

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## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish                      semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates                      semi-static test EC50 - Daphnia magna (Water flea) - > 139 mg/l - 48 h  
(OECD Test Guideline 202)

Toxicity to algae                      static test LC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - > 104 mg/l - 72 h  
(OECD Test Guideline 201)

### **12.2 Persistence and degradability**

Biodegradability                      aerobic - Exposure time 28 d  
(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 Other adverse effects**

No data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2536      Class: 3      Packing group: II  
Proper shipping name: Methyltetrahydrofuran  
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 2536      Class: 3      Packing group: II      EMS-No: F-E, S-D  
Proper shipping name: METHYLTETRAHYDROFURAN

### IATA

UN number: 2536      Class: 3      Packing group: II  
Proper shipping name: Methyltetrahydrofuran

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Tetrahydro-2-methylfuran	96-47-9	1993-04-24

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Tetrahydro-2-methylfuran	96-47-9	1993-04-24

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Tetrahydro-2-methylfuran	96-47-9	1993-04-24

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.      Acute toxicity

Eye Dam.	Serious eye damage
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
Skin Irrit.	Skin irritation

**HMIS Rating**

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

**NFPA Rating**

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

**Further information**

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