2-METHYL TETRAHYDROFURAN
CAS NO 96-47-9

MATERIAL SAFETY DATA SHEET
SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
   Product name : 2-Methyl Tetrahydrofuran
   CAS-No. : 96-47-9

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
   Company : Central Drug House (P) Ltd
   7/28 Vardaan House
   New Delhi -110002
   INDIA
   Telephone : +91 11 49404040
   Email : care@cdhfinechemical.com

1.4 Emergency telephone number
   Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   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 Label elements
   Labelling according Regulation (EC) No 1272/2008
   Pictogram

   Signal word : Danger
   Hazard statement(s)
   H225 : Highly flammable liquid and vapour.
   H302 : Harmful if swallowed.
   H315 : Causes skin irritation.
   H318 : Causes serious eye damage.
Precautionary statement(s)
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear eye protection/ face protection.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
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.
P370 + P378 In case of fire: Use dry powder or dry sand to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.

Supplemental Hazard information (EU)
EUH019 May form explosive peroxides.

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms : Tetrahydrosilvan
             Tetrahydro-2-methylfuran

Formula : C₉H₁₈O
Molecular weight : 186.23 g/mol
CAS-No. : 96-47-9
EC-No. : 202-507-4

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydro-2-methylfuran</td>
<td>Flam. Liq. 2; Acute Tox. 4;</td>
<td>&lt;= 100%</td>
</tr>
<tr>
<td>CAS-No.</td>
<td></td>
<td>96-47-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>Skin Irrit. 2; Eye Dam. 1;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H225, H302, H315, H318</td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 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.

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
SECTION 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
   Carbon oxides

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.

SECTION 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.

SECTION 7: Handling and storage
7.1 Precautions for safe handling
   Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
   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
   Store in cool place. 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.
   Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
   Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection
8.1 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.

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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: liquid
   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 at 1,013 hPa - OECD Test Guideline 102
f) Initial boiling point and boiling range 78 - 80 °C - lit.
g) Flash point -10.0 °C - 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)
   Lower explosion limit: 1.2 %(V)
k) Vapour pressure No data available
l) Vapour density No data available
m) Relative density 0.86 g/cm3 at 25 °C
n) Water solubility 140 g/l - soluble
o) Partition coefficient: n-octanol/water log Pow: 1.260
p) Auto-ignition temperature 260 °C
   at 995 - 1,009 hPa
q) Decomposition temperature No data available
r) Viscosity 0.576 mm2/s at 20 °C -
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
No data available
SECTION 10: Stability and reactivity

10.1 Reactivity
   No data available

10.2 Chemical stability
   Stable under recommended storage conditions.
   Contains the following stabiliser(s):
   2,6-di-tert-Butyl-p-cresol (0.025 %)

10.3 Possibility of hazardous reactions
   No data available

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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

   Acute toxicity
   LD50 Oral - Rat - female - > 300 mg/kg(Tetrahydro-2-methylfuran)
   (OECD Test Guideline 420)
   LC50 Inhalation - Rat - 4 h - 6000 ppm(Tetrahydro-2-methylfuran)
   LD50 Dermal - Rat - male and female - > 2,000 mg/kg(Tetrahydro-2-methylfuran)
   (OECD Test Guideline 402)

   Skin corrosion/irritation
   Skin - in vitro assay(Tetrahydro-2-methylfuran)
   Result: Irritating to skin.
   (OECD Test Guideline 431)

   Serious eye damage/eye irritation
   Eyes - In vitro study(Tetrahydro-2-methylfuran)
   Result: Risk of serious damage to eyes.
   (OECD Test Guideline 437)

   Respiratory or skin sensitisation
   In vivo assay - Mouse(Tetrahydro-2-methylfuran)
   Did not cause sensitisation on laboratory animals.
   (OECD Test Guideline 429)

   Germ cell mutagenicity
   reverse mutation assay(Tetrahydro-2-methylfuran)
   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.

   Reproductive toxicity
   No data available(Tetrahydro-2-methylfuran)

   Specific target organ toxicity - single exposure
   No data available(Tetrahydro-2-methylfuran)
Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available (Tetrahydro-2-methylfuran)

Additional Information
RTECS: LU2800000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Tetrahydro-2-methylfuran)
Lungs - Irregularities - This information is not available. (Tetrahydro-2-methylfuran)

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h (Tetrahydro-2-methylfuran) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates semi-static test EC50 - Daphnia magna (Water flea) - > 139 mg/l - 48 h (Tetrahydro-2-methylfuran) (OECD Test Guideline 202)
Toxicity to algae static test LC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - > 104 mg/l - 72 h (Tetrahydro-2-methylfuran) (OECD Test Guideline 201)

12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 28 d (Tetrahydro-2-methylfuran) (OECD Test Guideline 301D)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available (Tetrahydro-2-methylfuran)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information
14.1 UN number
ADR/RID: 2536 IMDG: 2536 IATA: 2536

14.2 UN proper shipping name
ADR/RID: METHYLTETRAHYDROFURAN IMDG: METHYLTETRAHYDROFURAN IATA: Methyltetrahydrofuran
14.3 Transport hazard class(es)
ADR/RID: 3
IMDG: 3
IATA: 3

14.4 Packaging group
ADR/RID: II
IMDG: II
IATA: II

14.5 Environmental hazards
ADR/RID: no
IMDG Marine pollutant: no
IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
EUH019 May form explosive peroxides.
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.