

## 1: Identification of substance / mixture

### 1. Product Identifier

Substance

Product Name (R)-(-)-3-Hydroxytetrahydrofuran  
Product Code 093765  
CAS Number 86087-24-3  
Other Names  
IUPAC  
MFCD Number MFCD00067101  
EC/EINECS  
REACH Number Index-No

### 2. Relevant identified uses of the substance or mixture and uses advised against

Research and Development

### 3. Details of the supplier of the safety data sheet

Fluorochem Ltd  
Unit 14, Graphite Way  
Hadfield  
Derbyshire  
SK13 1QH  
UK

Telephone: +44(0)1457 860111  
Fax: +44(0)1457 892799  
Email: sds@fluorochem.co.uk



### 4. Emergency telephone number

+44(0)7855 268577 -

## 2. Hazards Identification

### 1. Classification of the substance or mixture

|      |               |  |
|------|---------------|--|
| H302 | Acute Tox. 4  |  |
| H315 | Skin Irrit. 2 |  |
| H319 | Eye Irrit. 2  |  |
| H335 | STOT SE 3     |  |

### 2. Label elements

Signal Word **Warning**



### Hazard Statements

|      |                                   |
|------|-----------------------------------|
| H302 | Harmful if swallowed.             |
| H315 | Causes skin irritation.           |
| H319 | Causes serious eye irritation.    |
| H335 | May cause respiratory irritation. |

### Precautionary Phrases

|                    |  |
|--------------------|--|
| P264               | Wash hands thoroughly after handling.  |
| P302 + P352        | IF ON SKIN: Wash with plenty of soap and water.  |
| P304 + P340        | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.                                 |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P332 + P313        | If skin irritation occurs: Get medical advice/attention.   |
| P337 + P313        | If eye irritation persists: Get medical advice/attention.  |

### 3. Other Hazards

Additional precautionary phrases are located throughout the safety data sheet

## 3. Composition / Information on Ingredients

## 1. Substances

| Product Name                     | Hazards   | Concentration |
|----------------------------------|---|---------------|
| (R)-(-)-3-Hydroxytetrahydrofuran |   |               |
| CAS Number: 86087-24-3           | H302, H315, H319, H335 Acute Tox. 4, Eye Irrit. 2, Skin Irrit. 2, STOT SE 3 | <=100%        |

## 4. First Aid Measures

### 1. Description of first aid measures

|                     |  |
|---------------------|--|
| <i>Skin Contact</i> | P302 + P352: IF ON SKIN: Wash with plenty of soap and water.<br>P332 + P313: If skin irritation occurs: Get medical advice/attention.  |
| <i>Eye Contact</i>  | P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337 + P313: If eye irritation persists: Get medical advice/attention. |
| <i>Ingestion</i>    | Wash out mouth with water.   |
| <i>Inhalation</i>   | P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  |

### 2. Most important symptoms and effects

No symptoms.

### 3. Indication of any immediate medical attention

P312: Call a POISON CENTER or doctor/physician if you feel unwell.  
No additional measures required

## 5. Firefighting measures

### 1. Extinguishing Media

|                   |   |
|-------------------|---|
| <i>Suitable</i>   | Carbon dioxide.<br>Dry chemical powder.<br>Water. |
| <i>Unsuitable</i> | Do not use water with a full water jet            |

### 2. Special Hazards arising from the substance or mixture

In combustion toxic fumes may form.

### 3. Advice for Fire Fighters

Wear protective clothing to prevent contact with skin and eyes.  
Wear self-contained breathing apparatus.

## 6. Accidental Release Measures

### 1. Personal Precautions

Refer to section 8 of SDS for personal protection details.

### 2. Environmental Precautions

Do not discharge into drains or rivers.

### 3. Methods & Materials

Mix with sand or vermiculite.  
Transfer to a suitable container.

### 4. Preventing the occurrence of secondary hazards.

No Special Measures Required

## 7. Handling and Storage

### 1. Personal Precautions

|  |  |
|--|--|
| <i>Safe Handling</i>                           | Handle in fume hood.<br>Wash hands immediately after contamination.<br>P264: Wash hands thoroughly after handling. |
| <i>Protection against explosions and fires</i> | P362: Take off contaminated clothing and wash before reuse.<br>normal measures for preventive fire protection      |

### 2. Conditions for safe storage, including any incompatibilities

|                               |  |
|-------------------------------|--|
| <i>Managing Storage Risks</i> | Keep container tightly closed.<br>Store cold 2-8° C.                                     |
| <i>Storage Controls</i>       | No special requirements  |
| <i>Maintaining Integrity</i>  | Keep in tightly closed container in cool area away from direct sunlight or heat sources. |
| <i>Other advice</i>           | P403 + P233: Store in a well-ventilated place. Keep container tightly closed.            |

### 3. Specific End Uses

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

## 8. Exposure Controls/Personal Protection

### 1. Control Parameters

No Data Available

### 2. Exposure Controls

|  |  |
|--|--|
| <i>General protective and hygiene measures</i> | P280: Wear protective gloves/protective clothing/eye protection/face protection.<br>The standard precautionary measures should be adhered to when handling<br>Wash hands during breaks and at the end of handling the material<br>Immediately remove any contaminated clothing |
| <i>Engineering measures</i>                    | P271: Use only outdoors or in a well-ventilated area.<br>Ensure there is sufficient ventilation of the area.   |
| <i>Eye / Face Protection</i>                   | Safety Glasses.  |
| <i>Hand protection</i>                         | Protective gloves.   |
| <i>Respiratory protection</i>                  | P261: Avoid breathing dust/fume/gas/mist/vapours/spray.<br>Respiratory protection not required.  |
| <i>Skin protection</i>                         | Protective clothing.   |
| <i>Other personal protection advice</i>        | no data  |

## 9. Physical and Chemical Properties

### 1. Physical and Chemical Properties

|   |                    |
|---|--------------------|
| Appearance                              | Colourless liquid  |
| Odour                                   | No Data Available  |
| Odour threshold                         | No Data Available  |
| PH                                      | No Data Available  |
| Melting point / Freezing point          | No Data Available  |
| Initial boiling point and boiling range | 181 °C - lit.      |
| Flash point                             | 82 °C - closed cup |
| Evaporation rate                        | No Data Available  |
| Flammability(solid,gas)                 | No Data Available  |

|  |                                  |
|--|----------------------------------|
| Upper/lower flammability or explosive limits | No Data Available                |
| Vapour pressure                              | No Data Available                |
| Vapour density                               | No Data Available                |
| Relative density                             | 1.097 g/cm <sup>3</sup> at 25 °C |
| Solubility(ies):                             | Slightly in water                |
| Partition coefficient: n-octanol/water       | No Data Available                |
| Auto-ignition temperature                    | No Data Available                |
| Decomposition temperature                    | No Data Available                |
| Viscosity                                    | No Data Available                |
| Explosive properties                         | No Data Available                |
| Oxidising properties                         | No Data Available                |

## 2. Other Information

No additional information available

## 10. Stability and Reactivity

### 1. Reactivity

no unusual reactivity

### 2. Stability

Stable under normal conditions.

### 3. Possibility of Hazardous Reactions

no hazardous reactions known

### 4. Conditions to Avoid

Heat, flames and sparks.  
Extremes of temperature and direct sunlight.

### 5. Incompatible Materials

Strong oxidizing agents.  
Acid chlorides  
Acid anhydrides

### 6. Hazardous Decomposition Products

In combustion emits toxic fumes.  
In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

## 11. Toxicology information

### 1. Information

|  |  |
|--|--|
| <i>Acute Toxicity</i>                    | no data                                |
| <i>Skin corrosion/irritation</i>         | irritant for skin and mucous membranes |
| <i>Serious eye Damage/irritation</i>     | irritant effect                        |
| <i>Respiratory or skin sensitisation</i> | No sensitizing effect known            |
| <i>Germ Cell mutagenicity</i>            | not known                              |
| <i>Carcinogenicity</i>                   | not known                              |
| <i>Reproductive toxicity</i>             | not known                              |
| <i>STOT-single exposure</i>              | not known                              |
| <i>STOT-repeated exposure</i>            | not known                              |
| <i>Aspiration hazard</i>                 | not known                              |

### 2. Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

## 12. Ecological Information

### 1. Toxicity

not known

### 2. Persistence and degradability

not known

### 3. Bio-Accumulative Potential

not known

### 4. Mobility and Soil

not known

### 5. Results of PBT & vPvB assessment

not known

### 6. Other adverse effects

not known

## 13. Disposal Considerations

### 1. Waste Treatment Methods

*Disposal Operations* Consult state, local or national regulations for proper disposal.  
Hand over to authorised disposal company as hazardous waste.

*Disposal of Packaging* Disposal must be made according to official regulations.

## 14. Transport Information

### Air (ICAO)

Not classified as hazardous for transport

### Road (ADR)

Not classified as hazardous for transport

### Sea (IMDG)

Not classified as hazardous for transport

## 15. Safety, health, environmental and national regulations

### 1. Safety, health, environmental and national regulations:

product is not subject to any additional regulations or provisions

### 2. Safety Assessment

No Chemical Safety Assessment

## 16. Other Information

### 1. Other Information:

ADR: Accord Europeen sur le transport des marchandises Dangereuses par Route(European Agreement concerning the International Carriage of Dangerous Goods by road)  
RID:Reglement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association  
ICAO:International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the ICAO  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
CAS:Chemical Abstracts Service

### 3. Disclaimer

The product listed is for research and development purposes only and not for human or animal use. As such, in most cases, the toxicological, ecological and physicochemical properties have not been fully determined and the product should be treated with respect and always handled under suitable conditions by appropriately qualified personnel. The responsible party shall use this datasheet only in conjunction with other sources of information gathered by them, and should make an independent judgement of suitability, to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this material safety data sheet, or in combination with any other product or process, is the responsibility of the user.