

## Section 1 - Identification

### Product Identifier

**Product Name** (S)-2-Hydroxy-3-buten-1-yl p-tosylate

**Molecular Formula** C11 H14 O4 S  
**Molecular Weight** 242.3

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

|                                |   |
|--------------------------------|---|
| <b>Product Code</b>            | <b>411970000; 411970010</b>   |
| <b>Address</b>                 | Thermo Fisher Scientific New Zealand Ltd<br>244 Bush Road, Albany,<br>Auckland, New Zealand |
| <b>Emergency Tel.</b>          | <b>CHEMTREC®</b><br><b>09 980 6780 or +64 9 980 6780</b>                                    |
| <b>Telephone / Fax Numbers</b> | Tel: 09 980 6700<br>Fax: 09 980 6788  |
| <b>E-mail address</b>          | <a href="mailto:ANZinfo@thermofisher.com">ANZinfo@thermofisher.com</a>                      |

## Section 2 - Hazard(s) Identification

### Classification under Work Safe New Zealand

Not classified as hazardous according to criteria of EPA New Zealand

### GHS Classification

#### Physical hazards

Based on available data, the classification criteria are not met

#### Health hazards

Based on available data, the classification criteria are not met

#### Environmental hazards

Based on available data, the classification criteria are not met

**Label Elements** None required

Other hazards which do not result in classification

## Section 3 - Composition and Information on Ingredients

| Component                             | CAS No      | Weight % |
|---------------------------------------|-------------|----------|
| (S)-2-Hydroxy-3-buten-1-yl p-tosylate | 133095-74-6 | 99       |

## Section 4 - First Aid Measures

### Description of first aid measures

|                                     |   |
|-------------------------------------|---|
| New Zealand Emergency Tel.          | CHEMTREC®<br>09 980 6780 or +64 9 980 6780  |
| Inhalation                          | Remove to fresh air. Get medical attention immediately if symptoms occur.   |
| Eye Contact                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.         |
| Skin Contact                        | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur. |
| Ingestion                           | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.                   |
| Self-Protection of the First Aider  | No special precautions required.  |
| First Aid Facilities                | Eyewash, safety shower and washroom.  |
| Most important symptoms and effects | None reasonably foreseeable.  |
| Notes to Physician                  | Treat symptomatically.  |

## Section 5 - Fire Fighting Measures

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Extinguishing media which must not be used for safety reasons

No information available.

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

### Hazardous Combustion Products

Thermal decomposition can lead to release of irritating gases and vapors.

### Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6 - Accidental Release Measures

### Personal Precautions, Protective Equipment and Emergency Procedures

#### Emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

#### Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

#### Methods for Containment and Clean Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

#### Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

#### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## Section 7 - Handling and Storage

#### Precautions for Safe Handling

##### Advice on safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

#### Conditions for Safe Storage, Including any Incompatibilities

##### Storage Conditions

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep refrigerated.

##### Incompatible Materials

Oxidizing agent.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## Section 8 - Exposure Controls and Personal Protection

#### Control parameters

##### Exposure limits

The product does not contain any hazardous materials with occupational exposure limits established.

##### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Appropriate engineering controls

##### Engineering Measures

None under normal use conditions.

#### Individual protection measures, such as personal protective equipment

##### Eye Protection

Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

##### Hand Protection

Protective gloves

| Glove material                                    | Breakthrough time                    | Glove thickness | AUS/NZ Standard | Glove comments        |
|---|--------------------------------------|-----------------|-----------------|-----------------------|
| Nitrile rubber, Neoprene,<br>Natural rubber, PVC. | See manufacturers<br>recommendations | -               | AS/NZS 2161     | (minimum requirement) |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

|                                 |   |
|---------------------------------|---|
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure  |
| <b>Respiratory Protection</b>   | Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices |
| <b>Recommended Filter type:</b> | Particle filter (or AUS/NZ equivalent)  |

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## Section 9 - Physical and Chemical Properties

### Information on basic physical and chemical properties

|  |                               |  |
|--|-------------------------------|--|
| <b>Physical State</b>                          | Solid                         |  |
| <b>Appearance</b>                              | Beige                         |  |
| <b>Odor</b>                                    | No information available      |  |
| <b>Odor Threshold</b>                          | No data available             |  |
| <b>pH</b>                                      | No information available      |  |
| <b>Melting Point/Range</b>                     | 57 - 63 °C / 134.6 - 145.4 °F |  |
| <b>Softening Point</b>                         | No data available             |  |
| <b>Boiling Point/Range</b>                     | No information available      |  |
| <b>Flammability (liquid)</b>                   | Not applicable                | Solid                                    |
| <b>Flammability (solid,gas)</b>                | No information available      |  |
| <b>Explosion Limits</b>                        | No data available             |  |
| <b>Flash Point</b>                             | No information available      | <b>Method -</b> No information available |
| <b>Autoignition Temperature</b>                | No data available             |  |
| <b>Decomposition Temperature</b>               | No data available             |  |
| <b>Viscosity</b>                               | Not applicable                | Solid                                    |
| <b>Water Solubility</b>                        | No information available      |  |
| <b>Solubility in other solvents</b>            | No information available      |  |
| <b>Partition Coefficient (n-octanol/water)</b> |                               |  |
| <b>Vapor Pressure</b>                          | No data available             |  |
| <b>Density / Specific Gravity</b>              | No data available             |  |
| <b>Bulk Density</b>                            | No data available             |  |
| <b>Vapor Density</b>                           | Not applicable                | Solid                                    |
| <b>Particle characteristics</b>                | No data available             |  |

### Other information

|                          |                        |
|--------------------------|------------------------|
| <b>Molecular Formula</b> | C11 H14 O4 S           |
| <b>Molecular Weight</b>  | 242.3                  |
| <b>Evaporation Rate</b>  | Not applicable - Solid |

## Section 10 - Stability and Reactivity

**Reactivity** None known, based on information available

**Stability** Stable under normal conditions.

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Hazardous Polymerization** No information available.

**Hazardous Reactions** None under normal processing.

**Conditions to Avoid** Heat, flames and sparks.

**Incompatible Materials** Oxidizing agent.

**Hazardous Decomposition Products** Thermal decomposition can lead to release of irritating gases and vapors.

## Section 11 - Toxicological Information

### Acute Effects

#### Information on likely routes of exposure

**Product Information** No acute toxicity information is available for this product

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | Not an expected route of exposure.             |
| <b>Eyes</b>       | Not an expected route of exposure.             |
| <b>Skin</b>       | No known effect based on information supplied. |
| <b>Ingestion</b>  | No known effect based on information supplied. |

#### Numerical measures of toxicity

|                            |                   |
|----------------------------|-------------------|
| <b>(a) acute toxicity;</b> |                   |
| <b>Oral</b>                | No data available |
| <b>Dermal</b>              | No data available |
| <b>Inhalation</b>          | No data available |

#### Toxicology data for the components

**(b) skin corrosion/irritation;** No data available

**(c) serious eye damage/irritation;** No data available

|   |                   |
|---|-------------------|
| <b>(d) respiratory or skin sensitization;</b> |                   |
| <b>Respiratory</b>                            | No data available |
| <b>Skin</b>                                   | No data available |

**(e) germ cell mutagenicity;** No data available

**(f) carcinogenicity;** No data available  
There are no known carcinogenic chemicals in this product

|                             |                           |
|-----------------------------|---------------------------|
| (g) reproductive toxicity;  | No data available         |
| (h) STOT-single exposure;   | No data available         |
| (i) STOT-repeated exposure; | No data available         |
| Target Organs               | No information available. |
| (j) aspiration hazard;      | Not applicable<br>Solid   |

**Symptoms / effects, both acute and delayed**  
No information available.

## Section 12 - Ecological Information

### Ecotoxicity

|                                      |   |
|--------------------------------------|---|
| <b>Aquatic ecotoxicity</b>           | Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. |
| <b>Terrestrial ecotoxicity</b>       | There is no data for this product   |
| <b>Persistence and Degradability</b> | No information available  |
| <b>Bioaccumulative Potential</b>     | No information available  |
| <b>Mobility</b>                      | No information available.   |

### Other adverse effects

|  |   |
|--|---|
| <b>Endocrine Disruptor Information</b> | This product does not contain any known or suspected endocrine disruptors |
| <b>Persistent Organic Pollutant</b>    | This product does not contain any known or suspected substance            |
| <b>Ozone Depletion Potential</b>       | This product does not contain any known or suspected substance            |

## Section 13 - Disposal Considerations

### Waste treatment methods

|  |  |
|--|--|
| <b>Waste from Residues/Unused Products</b> | Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations. |
| <b>Contaminated Packaging</b>              | Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.   |
| <b>Other Information</b>                   | Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations .  |

## Section 14 - Transport Information

|   |   |
|---|---|
| <b>NZS 5433:2020</b>  | Not regulated   |
| <b>IATA</b>   | Not regulated   |
| <b>IMDG/IMO</b>   | Not regulated   |
| <b>Environmental hazards</b>  | No hazards identified   |
| <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | Not applicable, packaged goods  |
| <b>Special Precautions</b>  | No special precautions required. Please refer to the applicable dangerous goods regulations for additional information. |
| <b>Additional information</b>   | None known  |

## Section 15 - Regulatory Information

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

#### **National Regulations**

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

#### **Certified handlers, tracking and controlled substance license requirements**

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

#### **Prohibition or notification/licensing requirements**

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

### International Regulations

|   |  |
|---|--|
| <b>Ozone Depletion Potential</b>                        | This product does not contain any known or suspected substance |
| <b>Persistent Organic Pollutant</b>                     | This product does not contain any known or suspected substance |
| <b>Rotterdam Convention (PIC)</b>                       | Not applicable   |
| <b>Authorisation/Restrictions according to EU REACH</b> | Not applicable   |

### International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component                                | CAS No      | NZIoC | AICS | EINECS | ELINCS | NLP | KECL | IECSC | TCSI |
|--|-------------|-------|------|--------|--------|-----|------|-------|------|
| (S)-2-Hydroxy-3-buten-1-yl<br>p-tosylate | 133095-74-6 | -     | -    | -      | -      | -   | -    | -     | -    |

| Component                                | CAS No      | TSCA | TSCA Inventory<br>notification -<br>Active-Inactive | DSL | NDSL | PICCS | ISHL | ENCS |
|--|-------------|------|---|-----|------|-------|------|------|
| (S)-2-Hydroxy-3-buten-1-yl<br>p-tosylate | 133095-74-6 | -    | -   | -   | -    | -     | -    | -    |

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

## Section 16 - Other Information

This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

### Legend

**NZIoC** - New Zealand Inventory of Chemicals

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**IECSC** - Chinese Inventory of Existing Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**NZS 5433:2020** - Transport of Dangerous Goods on Land

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**WEL** - Workplace Exposure Limit

**DNEL** - Derived No Effect Level

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**VOC** - (Volatile Organic Compound)

**AICS** - Australian Inventory of Chemical Substances

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**CAS** - Chemical Abstracts Service

**ACGIH** - American Conference of Governmental Industrial Hygienists

**PNEC** - Predicted No Effect Concentration

**OECD** - Organisation for Economic Co-operation and Development

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**ADG** - Australian Code for the Transport of Dangerous Goods by Road and Rail

**LC50** - Lethal Concentration 50%

**ATE** - Acute Toxicity Estimate

**RPE** - Respiratory Protective Equipment

**NOEC** - No Observed Effect Concentration

**BCF** - Bioconcentration factor

**PBT** - Persistent, Bioaccumulative, Toxic

### Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

**Physical hazards** On basis of test data

**Health Hazards** Calculation method

**Environmental hazards** Calculation method

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

**Revision Date** 10-Mar-2023

**Revision Summary** Not applicable

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the



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date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**