

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

<b>Catalogue Number</b>	CS-BX-00059
<b>Product Name</b>	T-2-Tetraol
<b>CAS No.</b>	34114-99-3
<b>Category</b>	Pesticide Standards
<b>Synonyms</b>	(2R,2'S,3R,4S,5S,5aR,7S,9aR)-5a-(hydroxymethyl)-5,8-dimethyl-2,3,4,5,5a,6,7,9a-octahydrospiro[2,5-methanobenzo[b]oxepine-10,2'-oxirane]-3,4,7-triol
<b>Brand</b>	Clearsynth Labs Ltd.
<b>Identified uses</b>	Laboratory Chemicals
<b>Uses advised against</b>	Not available
<b>Company</b>	Clearsynth Labs Ltd. Mumbai, India
<b>Emergency Phone #</b>	+91-22-245045900
<b>REACH No.</b>	Not available

### SECTION 2: Hazards identification

**Disclaimer:** This is sample MSDS. Please email [sales@clearsynth.com](mailto:sales@clearsynth.com) for more details.

#### 2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Serious eye damage/eye irritation (Category 2)

#### 2.2 Label Elements

**Signal Word:** Warning



#### Hazard Statement(s)

Code	Statement
H300	Not available
H310	Not available
H319	Causes serious eye irritation.

H330	Not available
H335	Not available

**Precautionary Statement(s)**

Code	Statement
P260	Not available
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P262	Not available
P264	Wash hands thoroughly after handling.
P264+P265	Not available
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Not available
P301+P316	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present.
P316	Not available
P319	Get medical help if you feel unwell.
P320	Not available
P321	Specific treatment (see ... on this label).
P330	Not available
P337+P317	If eye irritation persists: Get medical help.
P361+P364	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation

**SECTION 3: Composition / information on ingredients**

3.1 Substance

Component : T-2-Tetraol

CAS Number : 34114-99-3

Molecular Formula : C<sub>15</sub>H<sub>22</sub>O<sub>6</sub>

Molecular Weight : 298.33

Parent Chemical : -

Synonyms : (2R,2'S,3R,4S,5S,5aR,7S,9aR)-5a-(hydroxymethyl)-5,8-dimethyl-2,3,4,5,5a,6,7,9a-octahydrospiro[2,5-methanobenzo[b]oxepine-10,2'-oxirane]-3,4,7-triol

Concentration : Not available

### SECTION 4: First aid measures

#### SECTION 4: First-aid measures

##### 4.1 Description of first aid measures

- General advice: Remove contaminated clothing and shoes. Seek medical attention if symptoms occur or persist.
- Inhalation: Move person to fresh air. If breathing is difficult, seek medical attention.
- Skin contact: Wash with plenty of soap and water. Get medical attention if irritation develops.
- Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.
- Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention.

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

- Not available.

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

- Treat symptomatically. No data available.

### SECTION 5: Firefighting measures

#### SECTION 5: Fire-fighting measures

##### 5.1 Extinguishing media

- Suitable extinguishing media: Use extinguishing measures appropriate to surrounding fire (e.g., water spray, dry chemical, foam, carbon dioxide).
- Unsuitable extinguishing media: Not available.

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

- Specific hazards: Not available.
- Hazardous combustion products: Not available.

##### 5.3 Advice for firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Cool containers with water spray if exposed to fire.
- Prevent fire-fighting water from entering drains or waterways.

### SECTION 6: Accidental release measures

#### SECTION 6: Accidental release measures

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

- Avoid contact with skin, eyes, and clothing.
- Avoid breathing dust/mist/vapors.
- Use appropriate personal protective equipment (see Section 8).

#### 6.2 Environmental precautions

- Avoid release to the environment. Prevent entry into drains, surface water, or soil.

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

- Contain spill. Collect using inert absorbent material.
- Place in suitable, closed, labeled container for disposal.
- Clean contaminated area with water and detergent where appropriate.

#### 6.4 Reference to other sections

- See Section 8 for exposure controls/personal protection and Section 13 for disposal considerations.

### SECTION-7: Handling and storage

#### SECTION 7: Handling and storage

##### 7.1 Precautions for safe handling

- Handle in accordance with good industrial hygiene and safety practice.
- Avoid contact with skin and eyes.
- Avoid generating dust/aerosols.
- Use only with adequate ventilation.
- Wash hands thoroughly after handling.

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

- Store in tightly closed container.
- Store in a cool, dry, well-ventilated place.
- Protect from moisture and contamination.
- Incompatible materials: Not available.

##### 7.3 Specific end use(s)

- Laboratory/research use: Pesticide standard. Not for food, drug, or household use.

### SECTION 8: Exposure controls / personal protection

#### SECTION 8: Exposure controls/personal protection

##### 8.1 Control parameters

- Occupational exposure limits: Not available.
- Biological limit values: Not available.

##### 8.2 Exposure controls

- Engineering controls: Provide adequate ventilation. Use local exhaust where dusts/aerosols may be generated.
- Personal protective equipment (PPE):
  - Eye/face protection: Safety glasses with side shields or chemical splash goggles.
  - Skin protection: Protective gloves (material not available). Wear protective clothing as appropriate.
  - Respiratory protection: If ventilation is inadequate or exposure is possible, use appropriate respiratory protection (type not available).
- Hygiene measures: Wash hands after handling. Remove and wash contaminated clothing before reuse.

- Environmental exposure controls: Avoid release to the environment; use appropriate containment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

### SECTION 10: Stability and reactivity

#### SECTION 10: Stability and reactivity

##### 10.1 Reactivity

- No data available.

##### 10.2 Chemical stability

- Stable under recommended storage conditions.

##### 10.3 Possibility of hazardous reactions

- No data available.

##### 10.4 Conditions to avoid

- Not available.

##### 10.5 Incompatible materials

- Not available.

##### 10.6 Hazardous decomposition products

- Not available.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

- Acute toxicity: Trichothecenes have multiorgan effects including anoerxia and weight loss, growth retardation, nervous disorders, cardiovascular alterations, immunodepression, hemostatic derangements, skin toxicity, decreased reproductive capacity, bone marrow damage, and alimentary toxic aleukia. (L1948, L1949, A2964) After direct dermal application or oral ingestion, the trichothecene mycotoxins can cause rapid irritation to the skin or intestinal mucosa, including skin irritation, burning and itching, rash or blisters, and bleeding. Eye contact can cause tearing, eye pain, conjunctivitis, burning sensations about the eyes, and blurred vision for up to 1 week. Symptoms also include nausea, vomiting, fatigue, dyspnea, and acute vascular effects leading to hypotension and shock. (L1948, L1949)

- Skin corrosion/irritation: After direct dermal application or oral ingestion, the trichothecene mycotoxins can cause rapid irritation to the skin or intestinal mucosa, including skin irritation, burning and itching, rash or blisters, and bleeding. Eye contact can cause tearing, eye pain, conjunctivitis, burning sensations about the eyes, and blurred vision for up to 1 week. Symptoms also include nausea, vomiting, fatigue, dyspnea, and acute vascular effects leading to hypotension and shock. (L1948, L1949)

- Serious eye damage/eye irritation: No data available.

- Respiratory or skin sensitization: No data available.

- Germ cell mutagenicity: No data available.

- Carcinogenicity: No data available.

- Reproductive toxicity: Trichothecenes have multiorgan effects including anoerxia and weight loss, growth retardation, nervous disorders, cardiovascular alterations, immunodepression, hemostatic derangements, skin toxicity, decreased reproductive capacity, bone marrow damage, and alimentary toxic aleukia. (L1948, L1949, A2964)

- STOT-single exposure: No data available.

- STOT-repeated exposure: No data available.

- Aspiration hazard: No data available.

Likely routes of exposure

- After direct dermal application or oral ingestion, the trichothecene mycotoxins can cause rapid irritation to the skin or intestinal mucosa, including skin irritation, burning and itching, rash or blisters, and bleeding. Eye contact can cause tearing, eye pain, conjunctivitis, burning sensations about the eyes, and blurred vision for up to 1 week. Symptoms also include nausea, vomiting, fatigue, dyspnea, and acute vascular effects leading to hypotension and shock. (L1948, L1949)

Symptoms related to the physical, chemical and toxicological characteristics

- Unlike many other mycotoxins, trichothecenes do not require metabolic activation to exert their biological activity, instead directly reacting with cellular components. Trichothecenes are cytotoxic to most eukaryotic cells due to their powerful ability to inhibit protein synthesis. They do this by freely moving across the plasma membrane and binding specifically to ribosomes with high-affinity. Specifically, they interfere with the active site of peptidyl transferase at the 3'-end of large 28S ribosomal RNA and inhibit the initiation, elongation or termination step of protein synthesis, as well as cause polyribosomal disaggregation. Protein synthesis is an essential function in all tissues, but tissues where cells are actively and rapidly growing and dividing are very susceptible to the toxins. Additionally, binding to ribosomes is thought to activate proteins in downstream signalling events related to immune response and apoptosis, such as mitogen-activated protein kinases. This is known as ribotoxic stress response. Trichothecenes may also induce some alterations in membrane structure, leading to increased lipid peroxidation and inhibition of electron transport activity in the mitochondria. They can further induce apoptosis through generation of reactive oxygen species. Further secondary effects of trichothecenes include inhibition of RNA and DNA synthesis, and also inhibition of mitosis. (L1948, L1949, A2962, A2963, A2964, A2980)

## SECTION 12: Ecological information

### SECTION 12: Ecological information

#### 12.1 Toxicity

- No data available.

#### 12.2 Persistence and degradability

- No data available.

#### 12.3 Bioaccumulative potential

- No data available.

#### 12.4 Mobility in soil

- No data available.

#### 12.5 Results of PBT and vPvB assessment

- Not available.

#### 12.6 Endocrine disrupting properties

- Not available.

#### 12.7 Other adverse effects

- No data available.

## SECTION 13: Disposal considerations

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Do not discharge to drains or the environment.
- Contaminated packaging: Dispose of as unused product unless cleaned per applicable regulations.
- Waste code: Not available.

### SECTION 14: Transport information

#### SECTION 14: Transport information

- UN number: Not available.
- UN proper shipping name: Not available.
- Transport hazard class(es): Not available.
- Packing group: Not available.
- Environmental hazards: Not available.
- Special precautions for user: Not available.
- Transport in bulk according to IMO instruments: Not available.

Note: Transport classification may vary by mode and jurisdiction; confirm with carrier and applicable regulations.

### SECTION 15: Regulatory information

#### SECTION 15: Regulatory information

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

- Regulatory listings (e.g., GHS/CLP/OSHA/TSCA/REACH): Not available.

##### 15.2 Chemical safety assessment

- Not available.

### SECTION 16: Other information

#### SECTION 16: Other information

- Product name: T-2-Tetraol
- Catalog no.: CS-BX-00059
- CAS no.: 34114-99-3
- Supplier: Clearsynth Labs Ltd., Mumbai, India
- Emergency phone: +91-22-245045900

#### Disclaimer

- The information provided is based on data available at the time of preparation and is intended for guidance in safe handling, use, processing, storage, transportation, disposal, and release. It does not constitute a warranty of any kind. Users are responsible for compliance with applicable laws and regulations.

#### Revision information

- Revision date: Not available.
- Version: Not available.

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