

Cayman Chemical Company
 1180 E. Ellsworth Rd.
 Ann Arbor, MI 48108



Section 1. Identification of the Substance/Mixture and of the

- 1.1 Product Code:** 11444
- Product Name:** T-2 Toxin
- Synonyms:** (3.alpha.,4β,8.alpha.)-12,13-epoxy-4,15-diacetate
 8-(3-methylbutanoate)trichothec-9-ene-3,4,8,15-tetrol; Fusariotoxin T-2; Insariotoxin; Mycotoxin T-2; NSC 138780;
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
- Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet**
- Company Name:** Cayman Chemical Company
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300
- Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887
- Information:** Cayman Chemical Company +1 (734)971-3335
- Web site address:** www.caymanchem.com

Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Acute Toxicity: Inhalation, Category 1	Skull and crossbones	Danger	Fatal if inhaled
Acute Toxicity: Oral, Category 1	Skull and crossbones	Danger	Fatal if swallowed
Acute Toxicity: Skin, Category 1	Skull and crossbones	Danger	Fatal in contact with skin
Skin Corrosion/Irritation, Category 2	Exclamation point	Warning	Causes skin irritation

- GHS Hazard Phrases:**
 H330: Fatal if inhaled.
 H300: Fatal if swallowed.
 H310: Fatal in contact with skin.
 H315: Causes skin irritation.
- GHS Precaution Phrases:**
 P260: Do not breathe {dust/fume/gas/mist/vapours/spray}.
 P284: {In case of inadequate ventilation, }wear respiratory protection { }.
 P264: Wash {hands} thoroughly after handling.
 P262: Do not get in eyes, on skin, or on clothing.
 P280: Wear {protective gloves/protective clothing/eye protection/face protection}.
 P361+364: Take off immediately all contaminated clothing and wash it before reuse.
 P362+364: Take off contaminated clothing and wash it before reuse.
- GHS Response Phrases:**
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P310: Immediately call a {POISON CENTER/doctor/...}.
 P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P330: Rinse mouth.
 P361: Take off immediately all contaminated clothing.
 P302+350: IF ON SKIN: Gently wash with plenty of soap and water.
 P321: Specific treatment {see ... on this label}.
 P302+352: IF ON SKIN: Wash with plenty of soap and water.
 P332+313: If skin irritation occurs, get medical advice/attention.

GHS Storage and Disposal Phrases:	Please refer to Section 7 for Storage and Section 13 for Disposal information.
2.3 Adverse Human Health Effects and Symptoms:	Fatal if inhaled. Fatal if swallowed. Fatal in contact with skin. Causes skin irritation. Material may be irritating to the mucous membranes and upper respiratory tract. May cause eye or respiratory system irritation. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
Target Organs:	No data available.
LD 50 / LC 50:	Please refer to Section 11.
Medical Conditions Generally Aggravated By Exposure:	No data available.

Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. T-2 Toxin	21259-20-1	100.0 %	244-297-7	R26/27/28-38	YD0100000

Section 4. First Aid Measures

4.1 Description of First Aid Measures:	
4.1.1 In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
4.1.2 In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
4.1.3 In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
4.1.4 In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
4.2 Important Symptoms and Effects, Both Acute and Delayed:	No data available.
4.3 Indication of any immediate medical attention and special treatment needed:	No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
Unsuitable Extinguishing Media:	A solid water stream may be inefficient.
5.2 Flammable Properties and Hazards:	No data available.
Flash Pt:	No data.
Autoignition Pt:	No data available.
Explosive Limits:	LEL: No data. UEL: No data.
Hazardous Combustion Products:	No data available.
5.3 Fire Fighting Instructions:	As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
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6.2 Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3 Methods and Material For Containment and Cleaning Up:	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
7.2 Precautions To Be Taken in Storing:	Keep container tightly closed. Store in accordance with information listed on the product insert.
Hazard Label Information:	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. T-2 Toxin	21259-20-1	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. T-2 Toxin	21259-20-1	No data.	No data.	No data.

Protective Equipment Summary - Hazard Label Information:	Compatible chemical-resistant gloves Safety glasses Eye wash station in work area Safety shower in work area Lab coat Safety glasses Vent Hood
8.2.1 Engineering Controls (Ventilation etc.):	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
8.2.2.1 Eye Protection:	Safety glasses
8.2.2.2 Protective Gloves:	Compatible chemical-resistant gloves
Other Protective Clothing:	Lab coat
8.2.2.3 Respiratory Equipment (Specify Type):	NIOSH approved respirator, as conditions warrant.
Work/Hygienic/Maintenance Practices:	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.
8.2.3 Environmental Exposure Controls:	No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties	
Physical States:	[] Gas [] Liquid [X] Solid
Appearance and Odor:	A crystalline solid
Melting Point:	No data.
Boiling Point:	No data.
Flash Pt:	No data.
Evaporation Rate:	No data.
Vapor Pressure (vs. Air or mm Hg):	No data.
Vapor Density (vs. Air = 1):	No data.
Specific Gravity (Water = 1):	No data.
Solubility in Water:	No data.
Solubility Notes:	~0.5 mg/ml in 1:1 DMSO:PBS (pH 7.2); ~20 mg/ml in EtOH; ~30 mg/ml in DMF & DMSO;
Autoignition Pt:	No data.

Explosive Properties: No data available.

Oxidizing Properties: No data available.

9.2 Other Information

Percent Volatile: No data.

Formula: C₂₄H₃₄O₉

Molecular Weight: 466.60

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [] Stable [X]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.3 Polymerization: Will occur [] Will not occur [X]

10.5 Incompatibility - Materials To Avoid: No data available.

10.6 Hazardous Decomposition Or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

T-2 Toxin - Toxicity Data: Oral LD₅₀ (rat): 2.7 mg/kg; Inhalation LC₅₀ (rat): 20 mg/m³/10M; Skin LD₅₀ (rat): 2.56 mg/kg; Oral LD₅₀ (mouse): 3.8 mg/kg;

Chronic Toxicological Effects: T-2 Toxin - Investigated as a mutagen, reproductive effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
T-2 Toxin RTECS Number: YD0100000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. T-2 Toxin	21259-20-1	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)

DOT Proper Shipping Name Toxins, extracted from living sources, solid, n.o.s
(3.alpha.,4β,8.alpha.)-12,13-epoxy-4,15-diacetate
8-(3-methylbutanoate)trichothec-9-ene-3,4,8,15-tetrol

DOT Hazard Class: 6.1

DOT Hazard Label: POISON

UN/NA Number: 3462

Packing Group: I

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name Toxins, extracted from living sources, solid, n.o.s
(3.alpha.,4β,8.alpha.)-12,13-epoxy-4,15-diacetate
8-(3-methylbutanoate)trichothec-9-ene-3,4,8,15-tetrol

UN Number: 3462
Hazard Class: 6.1 - POISON
Packing Group: I

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name Toxins, extracted from living sources, solid, n.o.s
 (3.alpha.,4β,8.alpha.)-12,13-epoxy-4,15-diacetate
 8-(3-methylbutanoate)trichothec-9-ene-3,4,8,15-tetrol

UN Number: 3462
Hazard Class: 6.1 - POISON
Packing Group: I
IATA Classification: 6.1

Additional Transport Information: Transport in accordance with local, state, and federal regulations.
 When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.
 Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

European Community Hazard Symbol codes T+: Very Toxic

European Community Risk and Safety Phrases

- R26/27/28 - Very toxic by inhalation, in contact with skin and if swallowed.
- R38 - Irritating to skin.
- S22 - Do not breathe dust.
- S24/25 - Avoid contact with skin and eyes.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)
- S53 - Avoid exposure - obtain special instructions before use.

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. T-2 Toxin	21259-20-1	No	No	No	No

Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. T-2 Toxin	21259-20-1	No	No	No	No

Regulatory Information Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 09/18/2013

Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required