

Ketorolac (tromethamine salt)

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

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1. Product and Company Identification

Product Code: 70690
Product Name: Ketorolac (tromethamine salt)
Manufacturer Information
Company Name: Cayman Chemical Company
Emergency Contact: Cayman Chemical Company (800)364-9897
Information: Cayman Chemical Company (734)971-3335
Synonyms: (±)-5-benzoyl-2,3-dihydro-1H-pyrrolizine-1-carboxylic acid, tris(hydroxymethyl)aminomethane salt; Toradol;

2. Hazards Identification

Emergency Overview: Toxic.
Avoid contact and inhalation.
Route(s) of Entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection
Health Hazards (Acute and Chronic): Causes eye, skin, or respiratory system irritation.
Material is irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation or skin absorption.
Toxic if swallowed.
The toxicological properties of this product have not been fully evaluated.
LD 50 / LC 50: Please refer to Section 11.
Signs and Symptoms Of Exposure: No data available.

3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#
1. Ketorolac (tromethamine salt)	74103-07-4	100.0 %	NA

4. First Aid Measures

Emergency and First Aid Procedures: If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
If swallowed, 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.
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
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.

5. Fire Fighting Measures

Flash Pt: No data.
Explosive Limits: LEL: No data. UEL: No data.
Special Fire Fighting Procedures: 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.
Unusual Fire and Explosion Hazards: No data available.
Hazardous Combustion Products: No data available.
Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.

Ketorolac (tromethamine salt)

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled: Avoid release into the environment.
 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).
 Transfer to a proper chemical waste container for disposal.

7. Handling and Storage

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.
 Wash thoroughly after handling

Precautions To Be Taken in Handling: Avoid breathing (dust, vapor, mist, gas).
 Avoid prolonged or repeated exposure.

Precautions To Be Taken in Storing: Keep tightly closed.
 Store at correct temperature.

8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Ketorolac (tromethamine salt)	74103-07-4	No data.	No data.	No data.

Protective Equipment Summary - Hazard Label Information: Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood

Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

Eye Protection: Safety glasses

Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

Ventilation: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Work/Hygienic/Maintenance Practices: Do not take internally.
 Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
 Wash thoroughly after handling.

9. Physical and Chemical Properties

Physical States: [] Gas [] Liquid [X] Solid

Melting Point: No data.

Boiling Point: No data.

Autoignition Pt: No data.

Flash Pt: No data.

Explosive Limits: LEL: No data. UEL: No data.

Specific Gravity (Water = 1): No data.

Bulk density: No data.

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): No data.

Evaporation Rate (vs Butyl Acetate=1): No data.

Solubility in Water: No data.

Solubility Notes: ~26 mg/ml in PBS (pH 7.2); ~7 mg/ml in EtOH; ~50 mg/ml in DMF & DMSO;

Percent Volatile: No data.

Heat Value: No data.

Particle Size: No data.

Corrosion Rate: No data.

Formula: C15H12NO3 · C4H12NO3

Ketorolac (tromethamine salt)

Molecular Weight:	376.40
pH:	No data.
Appearance and Odor:	A crystalline solid

10. Stability and Reactivity

Stability:	Unstable [] Stable [X]
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	strong oxidizing agents
Hazardous Decomposition Or Byproducts:	carbon dioxide carbon monoxide nitrogen oxides
Possibility of Hazardous Reactions:	Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. Toxicological Information

:	The toxicological effects of this product have not been thoroughly studied.
Chronic Toxicological Effects:	Ketorolac (tromethamine salt) - Toxicity Data: Oral LD50 (rat): 189 mg/kg; Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Ketorolac (tromethamine salt) RTECS Number: UY7759900
Carcinogenicity/Other Information:	No data available.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

:	Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
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13. Disposal Considerations

Waste Disposal Method:	Dispose in accordance with local, state, and federal regulations.
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14. Transport Information

LAND TRANSPORT (US DOT)	
DOT Proper Shipping Name	Toxic solid, organic, n.o.s. (Ketorolac (tromethamine salt))
DOT Hazard Class:	6.1
DOT Hazard Label:	POISON
UN/NA Number:	2811
Packing Group:	III
LAND TRANSPORT (European ADR/RID)	
ADR/RID Shipping Name	Toxic solid, organic, n.o.s. (Ketorolac (tromethamine salt))
UN Number:	2811
Packing Group:	III
AIR TRANSPORT (ICAO/IATA)	
ICAO/IATA Shipping Name	Toxic solid, organic, n.o.s. (Ketorolac (tromethamine salt))
UN Number:	2811
Packing Group:	III
IATA Classification:	6.1
Additional Transport Information:	Transport in accordance with local, state, and federal regulations.

15. Regulatory Information

European Community Hazard Symbol codes	T: Toxic
European Community Risk and Safety Phrases	R25 - Toxic if swallowed.

MATERIAL SAFETY DATA SHEET

Ketorolac (tromethamine salt)

Page: 4

Printed: 10/11/2010

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R36/37/38 - Irritating to eyes, respiratory system and skin.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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.)

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Ketorolac (tromethamine salt)	74103-07-4	No	No	No	No

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	HPV/LPV
1. Ketorolac (tromethamine salt)	74103-07-4	HAP, ODC ()	No	No	

16. Other Information

Company Policy or Disclaimer

For research use only, not for human or veterinary clinical use.

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