

## Safety Data Sheet


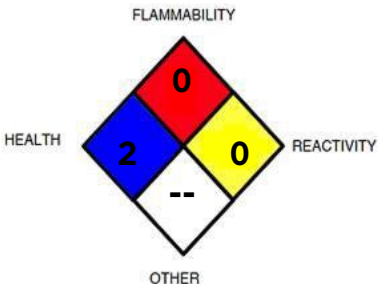
### Section 1: Product & Company Identification

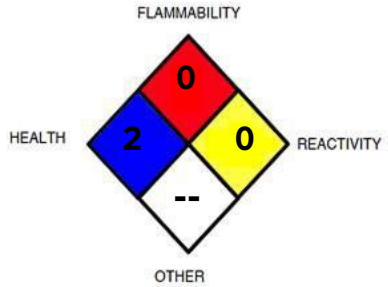
<b>Product Name:</b>	Ketorolac Tromethamine Salt
<b>Product #:</b>	K-1046
<b>Synonyms:</b>	Ketorolac tris salt; 2-amino-2-(hydroxymethyl)propane-1,3-diol;5-benzoyl- 2,3-dihydro-1H-pyrrolizine-1-carboxylic acid
<b>Supplier:</b>	AG Scientific Holdings, LLC 9950 Scripps Lake Drive, Suite 104 San Diego, CA 92131 Tele# + 858-452-9925
<b>Emergency Tele#:</b>	ChemTel, Tele# in USA 1-800-255-3924, International 1-813-248-0585

### Section 2: Composition / Information on Ingredients

Component	CAS #	EC #	% Composition
Ketorolac Tromethamine	74103-07-4		≥ 98

### Section 3: Hazards Identification

<b>Symbols</b>	
<b>HMIS Classification</b>	<p style="text-align: center;">FLAMMABILITY</p>  <p style="text-align: center;">OTHER</p>

<b>NFPA Classification</b>	
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## Section 4: First Aid Measures

<b>General Overview:</b>	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>Inhalation:</b>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>Skin:</b>	Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
<b>Eyes:</b>	Flush eyes with plenty of water for at least 15 minutes and consult a physician.
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
	See section 11 for more detailed information on health effects & symptoms.

## SECTION 5: Fire Fighting Measures

<b>Flammability of the product:</b>	No data available
<b>Extinguishing Media:</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Hazardous thermal (de)composition products:</b>	No data available
<b>Special Fire Fighting Procedures:</b>	Wear self-contained breathing apparatus for firefighting if necessary.
<b>Flash Point:</b>	No data available

## Section 6: Accidental Release Measures




<b>Personal Precautions:</b>	Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
<b>Environmental Precautions:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.


<b>Methods for Clean-up:</b>	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
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## SECTION 7: Handling & Storage

<b>Storage:</b>	Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: Room Temperature
<b>Handling:</b>	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

## SECTION 8: Exposure controls / Personal Protection

<b>Respiratory Protection:</b>	 <p>Respiratory protection is not required. Where protection from nuisance levels of dusts is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).</p>
<b>Skin and Body:</b>	  <p>Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full and splash contact - Material: Nitrile rubber, Minimum layer thickness: 0.11 mm, Break through time: 480 min., Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M).</p> <p>Choose body protection in relation to its type, to the concentration and amount of dangerous substances and to the specific workplace. The type of protective equipment must be selected according to the</p>

	concentration and amount of the dangerous substance at the specific workplace.
<b>Eyes:</b>	 <p>Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).</p>
<b>Ventilation/Engineering Measures:</b>	Ensure adequate ventilation
<b>Hygiene:</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Other:</b>	Contains no substances with occupational exposure limit values. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## SECTION 9: Physical and Chemical Properties

<b>Appearance &amp; Odor:</b>	White to off-white powder
<b>Formula</b>	$C_{15}H_{13}NO_3 \cdot C_4H_{11}NO_3$
<b>Molecular Wt.</b>	376.40
<b>Melting Pt.</b>	165-167°C
<b>Boiling Pt.</b>	No data available
<b>Density:</b>	No data available
<b>Vapor Pressure:</b>	No data available
<b>Evaporation Rate:</b>	No data available
<b>Vapor Density:</b>	No data available
<b>Solubility:</b>	Ethanol, DMF, DMSO, Water, Methanol
<b>Flash Point:</b>	No data available
<b>Autoignition Temp:</b>	No data available

## SECTION 10: Stability and Reactivity

<b>Stability:</b>	Stable under recommended storage conditions.
<b>Hazardous decomposition products:</b>	Carbon oxides, Nitrogen oxides (NO <sub>x</sub> )
<b>Materials to Avoid:</b>	Strong oxidizing agents

<b>Conditions to avoid:</b>	No data available
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## SECTION 11: Toxicological Information

<b>RTECS#:</b>	UY7759900
<b>ACUTE Toxicity:</b>	<p>Oral LD50 = 189 mg/kg (Rat), Remarks: Behavioral: Somnolence (general depressed activity); Behavioral: Ataxia</p> <p>May cause respiratory irritation.</p> <p>Signs and symptoms of exposure: Stomach - irregularities - based on human evidence.</p> <p>Inhalation - May be harmful if inhaled. May cause respiratory tract irritation.</p> <p>Skin - May be harmful if absorbed through skin. Causes skin irritation.</p> <p>Eyes - Causes serious eye irritation.</p> <p>Ingestion - Acute toxicity. Toxic if swallowed.</p>
<b>CHRONIC Toxicity:</b>	N/A
<b>Chronic Exposure:</b> <b>Carcinogen:</b> <b>Mutagen:</b> <b>Teratogen:</b> <b>Reproductive:</b>	<p>IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.</p> <p>AGGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, potential human carcinogen by ACGIH.</p> <p>NTP: No component of this product present at levels greater than or equal to 0.1% is identified as known or anticipated human carcinogen by NTP.</p> <p>OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as known or potential human carcinogen by OSHA.</p> <p>EPA: No classification on carcinogenic data is available from EPA</p>

## SECTION 12: Ecological Information

<b>Ecotoxicity:</b>	No data available
<b>Mobility:</b>	No data available
<b>Persistence and degradability:</b>	No data available
<b>Bioaccumulative potential:</b>	No data available
<b>Other adverse effects:</b>	No data available
<b>Corrosivity Characteristic:</b>	No data available

<b>General Notes:</b>	To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.
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## SECTION 13: Disposal Considerations

<b>Residue Waste or Unused product:</b>	Dispose of material according to all federal, state and local regulations. Offer material to a licensed, professional waste disposal company to dispose of as unused product. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
<b>Contaminated Packaging:</b>	Do not reuse container.

## SECTION 14: Transportation Information

<b>UN ID#:</b>	2811
<b>ADR / RID (LAND):</b>	UN Number: 2811 Class: 6.1 Packing Group: III Proper Shipping Name: Toxic solid, organic, n.o.s. (Ketorolac Tromethamine) Poison Inhalation Hazard: No
<b>DOT regulations:</b>	UN Number: 2811 Class: 6.1 Packing Group: III Proper Shipping Name: Toxic solid, organic, n.o.s. (Ketorolac Tromethamine) Poison Inhalation Hazard: No
<b>IMDG/IMO (SEA):</b>	UN Number: 2811 Class: 6.1 Packing Group: III EMS #: F-A, S-A Proper Shipping Name: TOXIC SOLID, ORGANIC, N.O.S. (Ketorolac Tromethamine)
<b>IATA/DGR (AIR):</b>	UN Number: 2811 Class: 6.1 Packing Group: III Proper Shipping Name: Toxic solid, organic, n.o.s. (Ketorolac Tromethamine)
<b>Special Provisions:</b>	N/A

## SECTION 15: Regulatory Information

<b>Health Phrases:</b>	Danger! H301 - Toxic if swallowed. H315 - Causes skin irritation. H319 - Causes serious eye irritation.
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	H335 - May cause respiratory irritation.
<b>Risk Phrases:</b>	<p>P261 - Avoid breathing dust, fumes, gas, mist, vapors, spray.</p> <p>P264 - Wash skin thoroughly after handling.</p> <p>P270 - Do not eat, drink or smoke when using this product.</p> <p>P271 - Use only outdoors or in a well-ventilated area.</p> <p>P280 - Wear protective gloves, eye protection, face protection</p>
<b>Safety Phrases:</b>	<p>P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.</p> <p>P304 + P340 - IF INHALED: Remove victim to fresh air and deep at rest in a position comfortable for breathing.</p> <p>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P312 - Call a POISON CENTER/doctor if you feel unwell.</p> <p>P321 - Specific treatment (see supplemental first aid instruction on this label).</p> <p>P330 - Rinse mouth.</p> <p>P332 + P313 - If skin irritation occurs: Get medical advice/ attention.</p> <p>P337 + P313 - If eye irritation persists: Get medical advice/ attention.</p> <p>P362 - Take off contaminated clothing and wash before reuse.</p> <p>P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 - Store locked up.</p> <p>P501 - Dispose of contents/ container to an approved waste disposal plant.</p>
<b>EU Regulations:</b>	N/A
<b>US Regulations:</b>	<p>TSCA: Not listed</p> <p>California Proposition 65: No products were found</p> <p>New Jersey State Right to Know: Listed</p> <p>Pennsylvania State Right to Know: Listed</p>
<b>U.S. Federal Regulations:</b>	<p>SARA 302/304 emergency planning and notification: No products were found.</p> <p>SARA 311/312 MSDS distribution-chemical inventory-hazard identification: Acute Health Hazard, Chronic Health Hazard</p> <p>SARA 313 toxic chemicals notification and release reporting: No products were found.</p> <p>Clean Water Act (CWA) 307: No products were found.</p> <p>Clean Water Act (CWA) 311: No products were found.</p> <p>Clean Air Act (CAA) 112 accidental release prevention: No products were found.</p> <p>Clean Air Act (CAA) 112 regulated flammable substances: No products were found.</p> <p>Clean Air Act (CAA) 112 regulated toxic substances: No products were found.</p>



	OSHA: Acute toxicity, oral (Cat. 3); Skin irritation (Cat. 2); Eye irritation (Cat. 2A); Specific target organ toxicity - single exposure (Cat. 3)
<b>WHMIS (Canada):</b>	N/A

## **SECTION 16: Other Information**

**LIABILITY STATEMENT:** *The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. AG Scientific shall not be held liable for any damages resulting from handling or from contact with the above product. AG Scientific products are for research purposes only. Not for human use or consumption.*