



SAFETY DATA SHEET

Ketorolac

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

Product identifier

Product Name: Ketorolac

Synonym: 5-benzoyl-2,3-dihydro-1H-pyrrolizine-1-carboxylic acid; RS 37619;

CAS#: 74103-06-3

Application of the substance / the mixture:

For research use only - not for human or veterinary use.

Details of the Supplier of the Safety Data Sheet

Manufacturer/Supplier:

Venogen Limited
Rm 1104 Crawford House, 70 Queen's Rd. Central
Central, 999077 Hong Kong

Web site address: <https://venogen.com>

Information department: Product safety department

Emergency Contact: CHEMTREC

Within USA and Canada: +1-800-424-9300
Outside USA and Canada: +1-703-527-3887

Section 2: Hazards Identification

Classification of the Substance or Mixture

Acute toxicity, oral: Category 4
Acute toxicity, dermal: Category 4
Acute toxicity, inhalation: Category 4
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2B

Label Elements

GHS label elements: GHS07

Hazard pictograms:



Signal word: Warning

Hazard statements:

H302: Harmful if swallowed



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H312: Harmful in contact with skin

H332: Harmful if inhaled

H315: Causes skin irritation

H320: Causes eye irritation

Precautionary Statements P-Codes

Prevention: P264, P270, P280

Response: P301, P302, P304, P305, P312, P313, P321, P322, P330, P332, P337, P338, P340, P351, P352, P362, P363

Disposal: P501

Section 3: Composition/Information on Ingredients

CAS #: 74103-06-3

Description: Ketorolac

Concentration: 100%

Section 4: First Aid Measures

Description of First Aid Measures

In case of inhalation: Supply fresh air; get medical attention if symptoms occur.

In case of skin contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In case of eye contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

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.

Information for doctor: Most important symptoms and effects, both acute and delayed. May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. No further relevant information available.

Indication of any immediate medical attention and special treatment needed:

Get medical attention.

Section 5: Fire Fighting Measures

Extinguishing media

Suitable extinguishing agents: Use fire fighting measures that suit the environment. A solid water stream may be inefficient.



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Special hazards arising from the substance or mixture: No further relevant information available.

Advice for firefighters: No further relevant information available.

Protective equipment: 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

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).

Environmental Precautions: Do not allow to enter sewers/ surface or ground water.

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.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7: Handling and Storage

Precautions for safe handling:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid prolonged or repeated exposure.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in accordance with information listed on <https://venogen.com>.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: None.

Specific end use: No further relevant information available.

Section 8: Exposure Controls/Personal Protection

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits.



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The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits.

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures: The usual precautionary measures for handling chemicals should be followed.

Protective Clothing: Lab coat

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

Protection of hands: Use Compatible chemical-resistant gloves. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Safety glasses

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.

Section 9: Physical and Chemical Properties

General Information on basic physical and chemical properties

Appearance: Solid

Form: Solid

Color: Characteristic.

Odor: Characteristic.

Structural Formula: C₁₅H₁₃NO₃

Molecular Weight: 255.3

Odor threshold: Not determined.

pH-value: Not applicable.

Change in Condition

Melting point/Melting range: Not determined.

Boiling point/Boiling range: Not determined.



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Flash point: Not applicable.

Flammability (solid, gaseous): Product is not flammable.

Decomposition temperature: Not determined.

Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits: Lower: Not determined. **Upper:** Not determined.

Vapor pressure: Not applicable.

Density: Not determined.

Relative density: Not determined.

Vapor density: Not applicable.

Evaporation rate: Not applicable.

Solubility in / Miscibility with Water: Not applicable.

Partition coefficient (n-octanol/water): Not applicable.

Viscosity: Dynamic: Not applicable. **Kinematic:** Not applicable.

Solubility: No data

Other information: No further relevant information available.

Section 10: Stability and Reactivity

Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions: No dangerous reactions known.

Conditions to avoid: No further relevant information available.

Incompatible materials: strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products: carbon oxides, nitrogen oxides, phosphorous oxides

Reactivity: No further relevant information available.

Section 11: Toxicological Information

Acute toxicity

Primary irritant effect on the skin: Not determined.

Primary irritant effect on the eye: Not determined.

Sensitization: Not determined.

Additional toxicological information: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic categories

IARC (International Agency for Research on Cancer): Substance is not listed.

NTP (National Toxicology Program): Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration): Substance is not listed.

Section 12: Ecological Information



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Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Behavior in environmental systems

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Additional ecological information

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: No data available.

vPvB: No data available.

Other adverse effects: No further relevant information available.

Section 13: Disposal Considerations

Waste treatment methods

Recommendation: Smaller quantities can be disposed of with household waste.

Uncleaned packagings

Recommendation: Disposal must be made according to official regulations.

Section 14: Transport Information

Land Transport (US DOT): Not dangerous goods.

Land Transport (European ADR/RID): Not dangerous goods.

Air Transport (ICAO/IATA): Not dangerous goods.

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

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

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Sara

Section 355 (extremely hazardous substances): Substance is not listed.



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Section 313 (Specific toxic chemical listings): Substance is not listed.

TSCA (Toxic Substances Control Act): Substance is not listed.

Hazardous Air Pollutants: Substance is not listed.

Label Elements

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Hazard pictograms:



Signal word: Warning

Hazard statements:

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Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Section 16: Other Information

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.

Department issuing SDS: Environment protection department

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