


## Section 1: Identification

<b>Common Name/Trade Name</b>	KETAMINE HCL USP	
<b>Supplier Information</b>	Letco Medical, LLC 1316 Commerce Drive NW Decatur, AL 35601 1 (800) 239-5288 +1 (734) 843-4693	<b>IN CASE OF EMERGENCY:</b> Chemtrec 1 (800) 424-9300 (24 hours)
<b>Product Synonym(s)</b>	(2RS)-2-(2-Chlorophenyl)-2-(methylamino)cyclohexanone hydrochloride.	
<b>Relevant Use(s) of Product</b>	Manufacture or Compounding of Substances	

## Section 2: Hazards Identification

<b>Classification of Substance or Mixture</b>	Acute toxicity, Oral (Category 4), Skin irritation (Category 2), Eye irritation (Category 2A), Specific target organ toxicity - single exposure (Category 3), Respiratory System	
<b>Signal Word</b>	Warning	
<b>Hazard Statement(s)</b>	H302 H315 H319 H335	Harmful if swallowed Causes skin irritation Causes serious eye irritation May cause respiratory irritation
<b>Pictogram(s)</b>		
<b>Precautionary Statement(s)</b>	P261 P264 P270 P271 P280 P301+P312 P302+P352 P304+P340 P305+P351+P338 P312 P321 P330 P332+P313 P337+P313 P362 P403+P233 P405 P501	Avoid breathing dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN Wash with soap and water. IF INHALED Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Specific treatment (see on this label). Rinse mouth. If skin irritation occurs Get medical advice/attention. If eye irritation persists Get medical advice/attention. Take off contaminated clothing and wash before reuse. Store in a well ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container to an approved waste disposal plant.
<b>Hazards Not Otherwise Classified</b>	None	
<b>Ingredient(s) with Unknown Toxicity</b>	None	

## Section 3: Composition/Information on Ingredients

<b>Chemical Name</b>	(2RS)-2-(2-Chlorophenyl)-2-(methylamino)cyclohexanone hydrochloride.
<b>Common Name</b>	Ketamine Hydrochloride
<b>CAS Number</b>	1867-66-9
<b>Impurities and/or Stabilizing Additives</b>	No data available

## Section 4: First Aid Measures

<b>General Advice</b>	No data available
<b>If Inhaled</b>	Remove from source of exposure. If signs of toxicity occur, seek medical attention. If person is conscious induce vomiting. Never induce vomiting on an unconscious person.
<b>In Case of Skin Contact</b>	Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.
<b>In Case of Eye Contact</b>	Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.
<b>If Swallowed</b>	If difficulty breathing, administer oxygen. Seek attention of a physician immediately. If necessary, provide artificial respiration.
<b>Most Important Symptoms and Effects</b>	As a drug of abuse, reports suggest that Ketamine produces a variety of symptoms including anxiety dysphoria, disorientation, insomnia, flashbacks, hallucinations, and, psychotic episodes. Ketamine dependence and tolerance are possible following prolonged administration. In clinical use, blood pressure and pulse rate may be elevated following administration of Ketamine alone. However, hypotension and bradycardia have been observed. Arrhythmia has also occurred. Although respiration is frequently stimulated, severe depression of respiration or apnea may occur following rapid intravenous administration of high doses of Ketamine. Laryngospasms and other forms of airway obstruction have occurred during Ketamine , anesthesia. Diplopia and nystagmus have also been noted, as well as a slight elevation in intraocular pressure. In some patients, enhanced skeletal muscle tone may be manifested by tonic and clonic movements sometimes resembling seizures. Anorexia, nausea and vomiting have also been observed. In clinical use, blood pressure and pulse rate may be elevated following administration of Ketamine alone. However, hypotension and bradycardia have been observed. Arrhythmia has also occurred. Although respiration is frequently stimulated, severe depression of respiration or apnea may occur . following rapid intravenous administration of high doses of Ketamine. Laryngospasms and other forms of airway obstruction have occurred during Ketamine anesthesia. Diplopia and nystagmus have also been noted, as well as a slight elevation in intraocular pressure. In some patients, enhanced skeletal muscle tone may be manifested by tonic and clonic movements sometimes resembling seizures. Anorexia, nausea and vomiting have been observed; however, this is not usually severe.

## Section 5: Fire Fighting Measures

<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Special Hazards Arising From the Substance/Mixture</b>	Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas
<b>Special PPE and/or Precautions for Firefighters</b>	Wear self contained breathing apparatus for firefighting if necessary.

## Section 6: Accidental Release Measures

<b>Personal Precautions, Protective Equipment and Emergency Procedures</b>	Isolate area around spill. Put on suitable protective clothing and equipment as specified by the site spill procedures.
<b>Methods and Materials Used for Containment</b>	Absorb the liquid with suitable material and clean affected area with soap and water. Dispose of spill materials according to the applicable federal, state, or local regulations.
<b>Cleanup Procedures</b>	Absorb the liquid with suitable material and clean affected area with soap and water. Dispose of spill materials according to the applicable federal, state, or local regulations.

## Section 7: Handling and Storage

<b>Precautions for Safe Handling</b>	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventative fire protection.
<b>Conditions for Safe Storage</b>	No special storage required for hazard control. For product protection, follow storage recommendations noted on the product label. "Store protected from light."

## Section 8: Exposure Controls/Personal Protection

<b>Components with Workplace Control Parameters</b>	Components with limit values that require monitoring at the workplace: Not required.
<b>Appropriate Engineering Controls</b>	Engineering controls should be used as the primary means to control exposures. General room ventilation is adequate unless the process generates dust, mist or fumes. Keep airborne contamination levels below the exposure limits listed above in this section.
<b>PPE - Eye/Face Protection</b>	Eye protection is normally not required during intended product use. However, if eye contact is likely to occur, the use of chemical safety goggles (as a minimum) is recommended. Wear safety glasses or goggles if eye contact is possible.
<b>PPE - Skin Protection</b>	If skin contact with the product formulation is likely, the use of latex or nitrile gloves is recommended.
<b>PPE - Body Protection</b>	If skin contact with the product formulation is likely, the use of latex or nitrile gloves is recommended. Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations. Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.
<b>PPE - Respiratory Protection</b>	If the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL.

## Section 9: Physical and Chemical Properties

<b>Appearance</b>	White crystalline powder
<b>Upper/Lower Flammability or Explosive Limits</b>	Not determined.
<b>Odor</b>	Odorless
<b>Vapor Pressure</b>	Not available.
<b>Odor Threshold</b>	No data available
<b>Vapor Density</b>	No data available
<b>pH</b>	No data available
<b>Relative Density</b>	No data available
<b>Melting Point/Freezing Point</b>	About 260C.
<b>Solubility</b>	Water soluble
<b>Initial Boiling Point and Boiling Range</b>	Undetermined.
<b>Flash Point</b>	Not applicable.
<b>Evaporation Rate</b>	No data available
<b>Flammability (Solid, Gas)</b>	No data available
<b>Partition Coefficient</b>	No data available
<b>Auto-Ignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available

## Section 10: Stability and Reactivity

<b>Reactivity</b>	Stable under normal temperatures and pressures.
<b>Chemical Stability</b>	Stable under normal temperatures and pressures.
<b>Possibility of Hazardous Reactions</b>	Hazardous decomposition products not determined. During thermal decomposition, it may be possible to generate irritating vapors and/or toxic fumes of carbon oxides (COx), nitrogen oxides (NOx) and hydrogen chloride. Hazardous Polymerization: Not anticipated to occur with this product.
<b>Conditions to Avoid</b>	No further relevant information available.
<b>Incompatible Materials</b>	Not available
<b>Hazardous Decomposition Products</b>	Hazardous decomposition products not determined. During thermal decomposition, it may be possible to generate irritating vapors and/or toxic fumes of carbon oxides (COx), nitrogen oxides (NOx) and hydrogen chloride. Hazardous Polymerization: Not anticipated to occur with this product.

## Section 11: Toxicological Information

<b>Acute Toxicity - LD50 Oral</b>	LD50 Oral 447 Mg/kg Rat, 617 Mg/kg Mouse. LD50 Intravenous 58.9 Mg/kg Rat, 55.9 Mg/kg Mouse. LD50 Intraperitoneal 224 Mg/kg Rat, 224 Mg/kg Mouse. LD50 Intramuscular 356 Mg/kg Mouse, 361 Mg/kg Pig.
<b>Acute Toxicity - Inhalation</b>	No data available
<b>Acute Toxicity - Dermal</b>	No data available
<b>Acute Toxicity - Eye</b>	No data available
<b>Skin Corrosion/Irritation</b>	No data available
<b>Serious Eye Damage/Irritation</b>	None anticipated from normal handling of this product. However inadvertent contact of this product with eyes may produce irritation.
<b>Respiratory or Skin Sensitization</b>	None anticipated from normal handling of this product. However, inadvertent contact
<b>Germ Cell Mutagenicity</b>	Ketamine Hydrochloride was negative in the Ames test for mutagenicity.
<b>Carcinogenicity IARC</b>	No data found.
<b>Carcinogenicity ACGIH</b>	No data found.
<b>Carcinogenicity NTP</b>	No data found.
<b>Carcinogenicity OSHA</b>	No data found.
<b>Reproductive Toxicity</b>	Male and female rats given five times the average human intravenous dose of Ketamine for three consecutive days about one week before mating had a reproductive performance equivalent to that of controls. When given to pregnant rats and rabbits intramuscularly at twice the average human intramuscular dose during the respective periods of organogenesis, the litter characteristics were equivalent to those of controls. A small group of rabbits was given a single large dose (six times the average human dose) of Ketamine on Day 6 of pregnancy. The outcome of pregnancy was equivalent to control and treated group. To determine the effect of Ketamine on perinatal and postnatal period, pregnant rats were given twice the average human intramuscular dose during Days 18 to 21 of pregnancy. Litter characteristics at birth and through the weaning period were equivalent to those of the control animals. There was a slight increase in incidence of delayed parturition by one day in treated dams of this group. Three groups each of mated beagle females were given 2.5 times the average human intramuscular dose twice weekly for the three weeks of the first, second, and third trimesters of pregnancy, respectively, without the development of adverse effects in the pups.
<b>Specific Target Organ Toxicity - Single Exposure</b>	In the workplace, possible target organs include the eyes, respiratory system, cardiovascular system, and central nervous system.
<b>Specific Target Organ Toxicity - Repeated Exposure</b>	In the workplace, possible target organs include the eyes, respiratory system, cardiovascular system, and central nervous system.
<b>Aspiration Hazard</b>	None anticipated from normal handling of this product.

## Section 12: Ecological Information

<b>Toxicity</b>	No data available
<b>Persistence and Degradability</b>	No data available
<b>Bio-accumulative Potential</b>	No data available
<b>Mobility in Soil</b>	No data available
<b>Other Adverse Effects</b>	No data available

## Section 13: Disposal Considerations

<b>Waste Treatment Methods Product</b>	All waste materials must be properly characterized. Further disposal should be performed in accordance with the federal, state or local regulatory requirements.
<b>Waste Treatment Methods Packaging</b>	All waste materials must be properly characterized. Further disposal should be performed in accordance with the federal, state or local regulatory requirements.
<b>Special Precautions Landfill or Incinerations</b>	No data available
<b>Other Information</b>	No data available

## Section 14: Transport Information

<b>UN Number</b>	Not dangerous goods.
<b>UN Proper Shipping Name</b>	N/A
<b>Transport Hazard Class(es)</b>	N/A
<b>Packaging Group</b>	N/A
<b>Environmental Hazards</b>	Not applicable.

## Section 15: Regulatory Information

No data available.

## Section 16: Other Information

<b>Additional Information</b>	N/A
<b>Prepared By</b>	Scarlotte Smith
<b>Revision Date</b>	01/25/2019 16:15

### Disclaimer

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