

**Section 1 - General Information****Chemical Name:**

4-Keto all-trans-Retinoic Acid

**CAS Reg. Number:**

38030-57-8

**Preparation Date/Revision Date:**

5/1/2009

**Manufacturer's Name:**

Toronto Research Chemicals Inc.,  
2 Brisbane Rd., North York, ON  
Canada, M3J 2J8

**Telephone Number:**

416-665-9696    **Fax Number:**  
416-665-4439

**Section 2 - Hazardous Ingredients/Identity Information**

Target Organ(s): Eyes. Nerves. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. Do Not Breathe Dust.

**Section 3 - Physical/Chemical Characteristics****Boiling Point:**

N/A

**Appearance and Odor:**

yellow to orange crystalline powder

**Vapor Pressure:**

N/A

**Specific Gravity(H<sub>2</sub>O=1):**

N/A

**Solubility in Water:**

N/A

**Melting Point:**

N/A

**Evaporation Rate (ButylAcetate=1):**

N/A

**Vapor Density:**

N/A

**Section 4 - Reactive Data****Stability:**

stable, light and moisture sensitive store under inert gas

**Incompatability (Materials to Avoid):**

strong oxidizing agents

**Conditions to Avoid:**

protect from light

**Hazardous Decomposition or Byproducts:**

carbon monoxide, carbon dioxide

**Hazardous Polymerization:**

will not occur

**Section 5 - Control Measures****Respiratory Protection:**

Niosh/Msha approved respirator

**Ventilation:**

hood

**Protective Gloves:**

Chemical-resistant gloves

**Eye Protection:**

safety goggles

**Other Protective Clothing:**

lab coat or apron

**Other Protection:**

eye safety wash

**Section 6 - First Aid Measures**

**Inhalation:**

Remove to fresh air. If breathing becomes difficult, call a Physician.

**Skin:**

Flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**Ingestion:**

If swallowed, wash out mouth with water provided person is conscious. Call a Physician.

**Eyes:**

flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a Physician.

**Section 7 - Health Hazard Data****Health Hazards (Acute and Chronic):**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Exercise due care. ROUTE OF EXPOSURE Skin Contact: May cause skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye Contact: May cause eye irritation. Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. A metabolite of all-trans-Retinoic Acid, a ligand for both the retinoic acid receptor (RAR) and the retinoid X receptor (RXR).

**Medical Conditions Generally Aggravated by Exposure:**

Gastrointestinal;Musculo-Skeletal;Skin & Appendages;Immunological including Allergic;Paternal effects;effects on Fertility; Effects on Embryo or Fetus; Specific Development abnormalities; Effects on Newborn.

**Section 8 - Precautions for Safe Handling and Use****Steps to be Taken in Case Material is Released or Spilled:**

wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. sweep up, place in a bag and hold for waster disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**Waste Disposal Method:**

dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations

**Precautions to Be Taken in Handling and Storage:**

wear appropriate NIOSH/MSHA-approved respirator. Chemical-resistant gloves, safety goggles, other protective clothing. use only in a chemical fume hood. Oxidizes in the presence of air, store under nitrogen.

**Section 9 - Fire and Explosion Hazard Data****Extinguishing Media:**

water spray. Carbon Dioxide, dry chemical powder or appropriate foam.

**Special Fire Fighting Procedures:**

wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Unusual Fire and Explosion Hazards:****Section 10 - Transportation Information and regulatory information**

DOT Proper Shipping Name: None Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport. IATA Non-Hazardous for Air Transport: Non-hazardous for air transport.