

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
   	<p>Toxic compound, do not ingest or inhale. Avoid all contact with this material.</p> <p>Environmental hazard.</p> <p>This material is toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment.</p> <p>Irritating to skin, eyes, and the respiratory system.</p> <p>CARCINOGEN. MINIMIZE EXPOSURE.</p>	   

Section I. Chemical Product and Company Identification

Chemical Name	Thioacetamide		
Catalog Number	T0187	Supplier	TCl America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	Ethanethioamide (CA INDEX NAME)		
Chemical Formula	C ₂ H ₅ NS		
CAS Number	62-55-5	In case of Emergency Call Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)	

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Thioacetamide	62-55-5	Min. 98.0 (T)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD ₅₀ (oral) 301 mg/kg Mouse LD ₅₀ (intraperitoneal) 300 mg/kg

Section III. Hazards Identification

Acute Health Effects	<p>Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.</p> <p>Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.</p> <p>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p>CARCINOGENIC EFFECTSNot available.</p> <p>MUTAGENIC EFFECTSNot available.</p> <p>TERATOGENIC EFFECTSTumorigenic effects. Rat TD Oral 1600 mg/kg for 12 weeks continuous</p> <p>TOXIC EFFECTS: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Liver - Tumors Rat TD Oral 6000 mg/kg for 43 weeks continuous</p> <p>TOXIC EFFECTS: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Lung, Thorax, or Respiration - Tumors Liver - Tumors Rat TDLo Oral 7350 mg/kg for 40 weeks continuous</p> <p>TOXIC EFFECTS: Tumorigenic - Carcinogenic by RTECS criteria Liver - Tumors</p> <p>DEVELOPMENTAL TOXICITYReproductive effects. Rat TDLo Intraperitoneal 1gm/kg female 7 days of pregnancy</p> <p>TOXIC EFFECTS: Effects on Fertility - Post-implantation mortality Rat TDLo Intraperitoneal 150 mg/kg female 9-11 days of pregnancy</p> <p>TOXIC EFFECTS: Effects on Embryo or Fetus - Cytological changes Specific Developmental Abnormalities - Hepatobiliary system Mouse TDLo Subcutaneous 1935 mg/kg female 6-14 days of pregnancy</p> <p>TOXIC EFFECTS: Effects on Embryo of Fetus - Fetotoxicity Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.</p>

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂), sulfur oxides (SO _x).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Toxic material. Environmentally hazardous material. Irritating material. Carcinogenic material. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	TOXIC. ENVIRONMENTAL HAZARD. IRRITANT. CARCINOGEN. Keep locked up.. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids, alkalis (bases).
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
	
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (White ~ light reddish-yellow, crystal ~ powder.)	Solubility	Very soluble in petroleum ether. Soluble in water, ethanol, methanol. Slightly soluble in ether.
Specific Gravity	Not available.		
Molecular Weight	75.13	Partition Coefficient	LOG P _{ow} : -0.16
Boiling Point	Not available.	Vapor Pressure	Not applicable.
Melting Point	112°C (233.6°F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Characteristic.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, strong acids, strong alkalis (bases).

Section XI. Toxicological Information

RTECS Number	AC8925000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD ₅₀ (oral) 301 mg/kg Mouse LD ₅₀ (intraperitoneal) 300 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS Not available. MUTAGENIC EFFECTS Not available. TERATOGENIC EFFECTS Tumorigenic effects. Rat TD Oral 1600 mg/kg for 12 weeks continuous TOXIC EFFECTS: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Liver - Tumors Rat TD Oral 6000 mg/kg for 43 weeks continuous TOXIC EFFECTS: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Lung, Thorax, or Respiration - Tumors Liver - Tumors Rat TDLo Oral 7350 mg/kg for 40 weeks continuous TOXIC EFFECTS: Tumorigenic - Carcinogenic by RTECS criteria Liver - Tumors DEVELOPMENTAL TOXICITY Reproductive effects. Rat TDLo Intraperitoneal 1gm/kg female 7 days of pregnancy TOXIC EFFECTS: Effects on Fertility - Post-implantation mortality Rat TDLo Intraperitoneal 150 mg/kg female 9-11 days of pregnancy TOXIC EFFECTS: Effects on Embryo or Fetus - Cytological changes Specific Developmental Abnormalities - Hepatobiliary system Mouse TDLo Subcutaneous 1935 mg/kg female 6-14 days of pregnancy TOXIC EFFECTS: Effects on Embryo or Fetus - Fetotoxicity Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Thioacetamide's production and use as a substitute for hydrogen sulfide in the laboratory may result in its release to the environment through various waste streams. If released to air, an estimated vapor pressure of 15 mm Hg at 25 deg C indicates thioacetamide will exist solely as a vapor in the ambient atmosphere. Vapor-phase thioacetamide will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 18 hours. If released to soil, thioacetamide is expected to have very high mobility based upon an estimated Koc of 17. Volatilization from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 6.4X10 ⁻⁶ atm-cu m/mole. Thioacetamide may volatilize from dry soil surfaces based upon its vapor pressure. If released into water, thioacetamide is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Thioacetamide was not biodegraded by activated sludge after 5 days, and therefore may be resistant to biodegradation in the environment. Volatilization from water surfaces is expected to be an important fate process based upon this compound's estimated Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 3 days and 39 days, respectively. An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected since amides hydrolyze very slowly at environmental conditions. Occupational exposure to thioacetamide may occur through inhalation and dermal contact with this compound at workplaces where thioacetamide is produced or used.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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Section XIV. Transport Information

DOT Classification	DOT CLASS 6.1: Toxic material.
PIN Number	UN2811
Proper Shipping Name	Toxic solids, organic, n.o.s.
Packing Group (PG)	III RQ = 10 (4.54)
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC). On DSL.
EINECS Number (EEC)	200-541-4
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R45- May cause cancer. R51- Toxic to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. 9-806

Section XVI. Other Information

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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.