

## Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Highly toxic compound, do not ingest or inhale. Avoid all contact with this material.	   

**Section I. Chemical Product and Company Identification**

Chemical Name	<b>1-Acetyl-2-thiourea</b>		
Catalog Number	A0117	Supplier	TCI America 9211 N. Harbrogate St. Portland OR 1-800-423-8616
Synonym	Acetyl Thiourea		
Chemical Formula	CH <sub>3</sub> CONHCSNH <sub>2</sub>		
CAS Number	591-08-2	In case of Emergency Call	<b>Chemtrec®</b> (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
1-Acetyl-2-thiourea	591-08-2	Min. 98.0 (T)	Not available.	Rat LD <sub>50</sub> (oral) 50mg/kg Mouse LD <sub>50</sub> (intraperitoneal) 100mg/kg

**Section III. Hazards Identification**

Acute Health Effects	Highly toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

**Section IV. First Aid Measures**

Eye Contact	Check for and remove any contact lenses. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. <b>WARNING:</b> It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.
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, administer artificial respiration. 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. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

**Section V. Fire and Explosion Data**

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <sub>2</sub> ), sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...).		
Fire Hazards	No specific information is available regarding the flammability of this compound in the presence of various materials.		
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. No additional information is available regarding the risks of explosion.		

**Continued on Next Page****Emergency phone number (800) 424-9300**

Fire Fighting Media and Instructions

SMALL FIRE: Use DRY chemicals, CO<sub>2</sub>, water spray or foam.  
LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.**Section VI. Accidental Release Measures**

Spill Cleanup Instructions

Toxic solid.  
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.**Section VII. Handling and Storage**

Handling and Storage Information

TOXIC. Handle with caution and minimize exposure. Keep away from heat and sources of ignition. 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. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes.  
Always store away from incompatible compounds such as oxidizing agents, acids, alkalis (bases).**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

Not available.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C

White crystalline powder.

Solubility

Soluble in dilute sodium hydroxide, and hot water.  
Slightly soluble in water, and ether.

Specific Gravity

Not available.

Molecular Weight

118.16

Partition Coefficient

Not available.

Boiling Point

Not available.

Vapor Pressure

Not available.

Melting Point

165 to 169°C (329 to 336.2°F)

Vapor Density

Not available.

Refractive Index

Not available.

Volatility

Not available.

Critical Temperature

Not available.

Odor

Not available.

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

YR7700000

Routes of Exposure

Eye contact. Inhalation. Ingestion.

Toxicity Data

Rat LD<sub>50</sub> (oral) 50mg/kg  
Mouse LD<sub>50</sub> (intraperitoneal) 100mg/kg

Chronic Toxic Effects

**CARCINOGENIC EFFECTS** : Not available.  
**MUTAGENIC EFFECTS** : Not available.  
**TERATOGENIC EFFECTS** : Not available.  
**DEVELOPMENTAL TOXICITY** Not available.

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

Highly toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

## Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	<p>Only limited experimental data are available to predict the environmental fate of 1-acetyl-2-thiourea. A single aqueous hydrolysis study has reported a rate constant corresponding to a half-life of 2.7 hr at pH 9.65. Sufficient data are not available to estimate hydrolysis rates at lower pHs, although the rate at pH 7 is likely to be much slower.</p> <p>1-Acetyl-2-thiourea absorbs light relatively weakly in the environmental region suggesting a potential for direct photolysis. If released to the atmosphere, 1-acetyl-2-thiourea should degrade rapidly in the vapor-phase (half-life of 4.8 hr estimated from chemical structure) by reaction with photochemically produced hydroxyl radicals. 1-Acetyl-2-thiourea may additionally exist in air in the adsorbed-particle phase. If released to water, hydrolysis may be important. If released to soil, 1-acetyl-2-thiourea may be susceptible to leaching. Aqueous hydrolysis may be important, particularly in alkaline soils. No data are available regarding biodegradation in soil or water. There are no data available which suggest that the general population is exposed to 1-acetyl-2-thiourea. (SRC)</p>

## Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or 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 this 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)	II
DOT Pictograms	

## Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	Not available.
EINECS Number (EEC)	209-699-9
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
Japanese Regulatory Data	Not available.

## Section XVI. Other Information

**Version 1.0**  
**Validated on 2/16/1998.**  
**Printed 1/10/2005.**

### Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, 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.