TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Irritating to skin, eyes, and the respiratory system. POSSIBLE CARCINOGEN. MINIMIZE EXPOSURE.**	

Section I. Chemical Product and Company Identification

Chemical Name: **Oleic Acid**

Catalog Number	O0011
Synonym	cis-9-Octadecenoic Acid
Chemical Formula	$C_{18}H_{34}O_2$
CAS Number	112-80-1

Supplier: TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

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
Oleic Acid	112-80-1	Min. 85.0 (GC)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD_{50} (oral) 25 gm/kg Mouse LD_{50} (oral) 28 gm/kg Rat LD_{50} (intravenous) 2400 ug/kg Mouse LD_{50} (intravenous) 230 mg/kg

Section III. Hazards Identification

Acute Health Effects

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.

Chronic Health Effects

CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Tumorigenic Effects.
Mouse TDLo Skin 6 mL/kg/10 days intermittent
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Skin and Appendages - Tumors
Tumorigenic - Facilitates action of know carcinogens
Rabbit TDLo Subcutaneous 390 mg/kg/17 weeks intermittent
TOXIC Effects:
Tumorigenic - Equivocal tumorigenic agent by RTECS criteria
Tumorigenic - Tumors at site of application
DEVELOPMENTAL TOXICITY: Not available.

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. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

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	363℃ (685.4℉)
Flash Points	187℃ (368.6℉).	Flammable Limits	Not available.

Combustion Products

These products are toxic carbon oxides (CO, CO_2).

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.

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Emergency phone number (800) 424-9300

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	Irritating material. Carcinogenic material. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	IRRITANT. CARCINOGEN. 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 breathe gas/fumes/ vapor/spray.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent. 
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless to yellow.)	Solubility	Insoluble in water. Miscible with methanol, acetone, carbon tetrachloride.
Specific Gravity	0.89 (water=1)		
Molecular Weight	282.46	Partition Coefficient	Log P_{ow}: 7.73
Boiling Point	220 to 222°C (428 to 431.6°F)	Vapor Pressure	$7.3x10^{-5}$ Pa (@ 25°C)
Melting Point	16°C (60.8°F) (Freezing Point)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Dynamic: 25.6 cP	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.

Section XI. Toxicological Information

RTECS Number	RG2275000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD_{50} (oral) 25 gm/kg Mouse LD_{50} (oral) 28 gm/kg Rat LD_{50} (intravenous) 2400 ug/kg Mouse LD_{50} (intravenous) 230 mg/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Carcinogenic by RTECS criteria. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Tumorigenic Effects. Mouse TDLo Skin 6 mL/kg/10 days intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Skin and Appendages - Tumors Tumorigenic - Facilitates action of know carcinogens Rabbit TDLo Subcutaneous 390 mg/kg/17 weeks intermittent TOXIC Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Tumorigenic - Tumors at site of application **DEVELOPMENTAL TOXICITY**: Not available.
Acute Toxic Effects	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.

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

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Oleic acid occurs as a natural product in the essential oils of various plants. It has been identified in various foods, such as brown rice and beef. Oleic acid is released to the atmosphere in emissions from tobacco smoke, biomass combustion, coal/refuse combustion, veneer drying, and cooking hamburger meat. It is also released in wastewater effluents from pulp and paper mills, olive oilproduction, and waste treatment plants. If released to the atmosphere, oleic acid will degrade by reaction with photochemically produced hydroxyl radicals (estimated half-life of about 5 hours). It may be physically removed from air by dry deposition. If released to soil or water, oleic acid is expected to biodegrade; a variety of biodegradation screening studies have demonstrated that oleic acid biodegrades. However, the rate of biodegradation may be diminished due to concurrent adsorption (estimated Koc of 38,000). Occupational exposure to oleic acid occurs primarily through dermal contact. The general population is exposed to oleic acid through consumption of food, consumption of drinking water, and dermal contact with cosmetics and ointments in which it is contained.

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.

Section XIV. Transport Information

DOT Classification	Not a DOT controlled material (United States).
PIN Number	Not applicable.
Proper Shipping Name	Not applicable.
Packing Group (PG)	Not applicable.
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-2B: Material causing other toxic effects (TOXIC). On DSL
EINECS Number (EEC)	204-007-1
EEC Risk Statements	R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	ENCS No. 2-609 ; 2-975

Section XVI. Other Information

Version 1.0
Validated on 6/22/2009.
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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, 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.