

Material Safety Data Sheet

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

Section I. Chemical Product and Company Identification

Chemical Name	Palmitic Acid		
Catalog Number	P0002	Supplier	TCI America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	C ₁₆ H ₃₂ O ₂		
CAS Number	57-10-3	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
Palmitic Acid	57-10-3	Min. 95.0 (GC,T)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD ₅₀ (oral) >10 gm/kg Mouse LD ₅₀ (intravenous) 57 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 : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects. Mouse TDLo Implant 1000 mg/kg TOXIC Effects: Tumorigenic - Neoplastic by RTECS criteria Kidney, Ureter, and Bladder - Tumors DEVELOPMENTAL TOXICITY : Not available. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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	Not available.
Flash Points	171 °C (339.8 °F).	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.		
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. Possibly carcinogenic material. Potential dust explosion hazard. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information
IRRITANT. POSSIBLE CARCINOGEN. POTENTIAL DUST EXPLOSION HAZARD. 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 dust.
Always store away from incompatible compounds such as oxidizing agents, reducing agents, 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. 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	Solid. (White crystal ~ powder.)	Solubility	Very soluble in ether, chloroform, propyl alcohol. Soluble in ethanol, acetone. Very slightly soluble in petroleum ether. Insoluble in water.
Specific Gravity	Not available.		
Molecular Weight	256.42	Partition Coefficient	Log P _{ow} : 5.31
Boiling Point	352°C (665.6°F)	Vapor Pressure	0.1 kPa (@ 154°C)
Melting Point	62°C (143.6°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 reducing agents, alkalis (bases).

Section XI. Toxicological Information

RTECS Number	RT4550000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD ₅₀ (oral) >10 gm/kg Mouse LD ₅₀ (intravenous) 57 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects. Mouse TDLo Implant 1000 mg/kg TOXIC Effects: Tumorigenic - Neoplastic by RTECS criteria Kidney, Ureter, and Bladder - Tumors DEVELOPMENTAL TOXICITY : Not available. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
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.

Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate

Palmitic acid's production and use as a soap/cosmetics agent and as a non-drying oil for surface coatings may result in its release to the environment through various waste streams. Palmitic acid is one of the more common fatty acids that occurs in natural fats and in oils. Fatty acids are an important part of the normal daily diet of mammals, birds and invertebrates. Palmitic acid is also found in Korean chamchwi plant (*Aster scaber* Thunb), mature grains of brown rice, as a volatile constituent of nectarine, and found in paprika oleoresin. If released to air, a vapor pressure of 3.8X10⁻⁷ mm Hg at 25 deg C indicates palmitic acid will exist in both the vapor and particulate phases in the atmosphere. Vapor-phase palmitic acid 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 20 hours. Particulate-phase palmitic acid will be removed from the atmosphere by wet or dry deposition. Palmitic acid irradiated with light at wavelengths greater than 290 nm was found to be 58.9% degraded after 17 hours. If released to soil, undissociated palmitic acid is expected to have no mobility based upon an estimated Koc of 189,000 for the free acid. The estimated pKa of palmitic acid is 4.7, indicating that this compound will exist almost entirely in the anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts. Volatilization from moist soil surfaces is not expected to be an important fate process because anions do not volatilize. Aerobic screening studies showed biodegradation of palmitic acid reaching approximately 37% after 5 days in the presence of both sewage inoculum and activated sludge. If released into water, undissociated palmitic acid is expected to adsorb to suspended solids and sediment based upon the estimated Koc for the free acid. Anaerobic biodegradation of palmitic acid was found to be 68.7% after an incubation period of 60 days and had a first order biodegradation rate of 0.32%/day, giving an anaerobic half-life of 52 days. The estimated pKa indicates palmitic acid will exist almost entirely in the anion form at pH values of 5 to 9 and therefore volatilization from water surfaces is not expected to be an important fate process. A BCF of 60 suggests that bioconcentration in aquatic organisms is moderate. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions. Palmitic acid exhibited negligible direct photodegradation in seawater. Occupational exposure to palmitic acid may occur through dermal contact with this compound at workplaces where palmitic acid is produced or used. Monitoring data indicate that the general population may be exposed to palmitic acid via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with this compound and other consumer products containing palmitic acid.

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)

On DSL

EINECS Number (EEC)

200-312-9

EEC Risk Statements

R36/37/38- Irritating to eyes, respiratory system and skin.

Japanese Regulatory Data

Not available.

Section XVI. Other Information

Version 1.0
Validated on 11/16/2010.
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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.