

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Corrosive to eyes and skin on contact. Tumorigen. Light sensitive. Store below 40°C.	   

Section I. Chemical Product and Company Identification

Chemical Name	Sorbic Acid		
Catalog Number	S0053	Supplier	TCl America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	2,4-Hexadienoic Acid, (E,E)- (9 CI)		
Chemical Formula	CH ₃ CH:CHCH:CHCOOH		
CAS Number	110-44-1	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
Sorbic Acid	110-44-1	Min. 99.0(T)	Not available.	Rat LD ₅₀ (oral) 7360mg/kg Rat LD ₅₀ (intraperitoneal) 800mg/kg Mouse LD ₅₀ (subcutaneous) 2820mg/kg

Section III. Hazards Identification

Acute Health Effects	Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. 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: Rat TDLo (subcutaneous) 1040mg/kg/65 Weeks, intermittent. Toxic Effects: Tumorigenic- Equivocal tumorigenic agent by RTECS criteria. Tumorigenic- Tumors at site of application. DEVELOPMENTAL TOXICITY Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

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	DO NOT INDUCE VOMITING. 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	127°C (260.6°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
Fire Hazards	Not available.		

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Emergency phone number (800) 424-9300

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 Corrosive solid. Tumorigenic material. Light sensitive material. Store below 40°C.
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 CORROSIVE. TUMORIGEN. LIGHT SENSITIVE. STORE BELOW 40°C. Keep container dry. 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. Never add water to this product. 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, 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. 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	Solid. (White crystalline powder.)	Solubility	Solubility in water: 0.25% @ 30°C, 3.8% @ 100°C, in propylene glycol: 5.5% @ 20°C; In absolute ethanol or methanol: 12.90% @ 20°C; In 20% ethanol: 0.29%; In acetone: 9.2% @ 20°C; In glacial acetic acid: 11.5% @ 20°C; In benzene: 2.3%; In dioxane: 11.0% @ 20°C; In carbon tetrachloride: 1.3% @ 20°C; In cyclohexane: 0.28%; In glycerol: 0.31% @ 20°C; In isopropanol: 8.4%; In isopropyl ether 2.7% @ 20°C; In methyl acetate: 6.1%; In toluene: 1.9% @ 20°C; In fats and oils 5.5% @ 20°C. Very soluble in ether.
Specific Gravity	1.204 (water=1) @ 19°C	Partition Coefficient	K _{ow} = 1.33
Molecular Weight	112.13	Vapor Pressure	0.01mmHg @ 20°C
Boiling Point	228°C (442.4°F) (Dec.)	Vapor Density	3.87 (Air = 1)
Melting Point	134°C (273.2°F)	Volatility	Not available.
Refractive Index	Not available.	Odor	Weak characteristic odor.
Critical Temperature	Not available.	Taste	Slightly acidic taste.
Viscosity	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 Protect from light. Avoid excessive heat and light.

Incompatibilities Reactive with oxidizing agents, reducing agents, alkalis (bases).

Section XI. Toxicological Information

RTECS Number	WG2100000
Routes of Exposure	Eye Contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Rat LD ₅₀ (oral) 7360mg/kg Rat LD ₅₀ (intraperitoneal) 800mg/kg Mouse LD ₅₀ (subcutaneous) 2820mg/kg
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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Sorbic acid's production and use almost exclusively as a preservative in foods, animal feeds, tobacco, cosmetics, and pharmaceuticals may result in its release to the environment through various waste streams. If released to the atmosphere, sorbic acid is expected to exist solely in the vapor phase in the ambient atmosphere based on an estimated vapor pressure of 9.9X10 ⁻³ mm Hg at 25 deg C. Vapor-phase sorbic acid is degraded in the atmosphere by reaction with ozone and photochemically-produced hydroxyl radicals with an estimated half-life of about 5.2 and 7.6 hours, respectively. If released to soil, sorbic acid is expected to have high mobility based on an estimated Koc of 130. Volatilization of sorbic acid from dry and moist soil surfaces is not expected to occur based on the estimated vapor pressure for this compound and an estimated Henry's Law constant of 5.0X10 ⁻⁸ atm-cu m/mole at 25 deg C, respectively. Sorbic acid was observed to biodegrade in soil suspensions. A pKa of 4.76 indicates that sorbic acid will exist predominately in the ionized form under environmental pHs. If released into water, sorbic acid is not expected to adsorb to suspended solids and sediment in the water column based on the estimated Koc of 130. Volatilization from water surfaces is not expected to occur based on an estimated Henry's Law constant of 5.0X10 ⁻⁸ atm-cu m/mole at 25 deg C and the pKa for this compound. The potential for bioconcentration of sorbic acid in aquatic organisms is low based on an estimated BCF of 6.0. Biodegradation of sorbic acid in both soil and water is expected to be an important fate process for this compound. Anaerobic bacteria metabolized sorbic acid at a rate of 142 mg/l day. In the Zahn-Wellens test, 95% of the initial sorbic acid concentration was degraded within 6 days. Occupational exposure may occur through inhalation of dust particles and dermal contact with sorbic acid at workplaces where sorbic acid is produced or used. The general population will be exposed to sorbic acid via ingestion of food and dermal contact with other products containing sorbic acid. (HSDB)

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	Class 8: Corrosive material
PIN Number	UN3261
Proper Shipping Name	Corrosive solid, acidic, organic, n.o.s.
Packing Group (PG)	III
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 E: Corrosive solid.
EINECS Number (EEC)	Not available.
EEC Risk Statements	R34- Causes burns. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	Not available.

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.

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