MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment

Health Hazard	2
Fire Hazard	1
Reactivity	0

See Section 8.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code:	S1517
Product Name:	SORBIC ACID, POWDER, FCC
Chemical Name:	2,4-Hexadienoic acid, (E,E)-
Synonyms:	(E,E)-2,4-Hexadienoic acid 1,3-Pentadiene-1-carboxylic acid 2,4-Hexadienoic acid, (E,E)- (9CI) 2-Propenylacrylic acid 2E,4E-Hexadienoic acid Acetic acid, (2-butenylidene)- Acetic acid, crotylidene- Hexadienic acid Hexadienoic acid Panosorb Sorbistat trans,trans-Sorbic acid trans-trans-2,4-Hexadienoic acid
Recommended use:	Food preservative. Fungistatic agent for foods, especially cheeses. Mold and yeast inhibitor.
CAS #:	110-44-1
RTECS #	WG2100000
Formula:	C6-H8-O2
CI#:	Not available
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
Order Online At:	**https://www.spectrumchemical.com**
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300
Contact Person:	Regina Wachenheim (East Coast)
Contact Person:	Martin LaBenz (West Coast)

2. HAZARDS IDENTIFICATION

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! IRRITANT
Irritating to eyes
Irritating to skin
Irritating to respiratory system

Odor:	Physical state:	Appearance:	Color:
Relatively odorless.	Solid.	Crystalline powder. Powder.	White.

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Potential Health Effects:

Skin Contact:
Causes skin irritation.

Eye Contact:
Causes eye irritation.

Inhalation:
Irritating to respiratory system.

Ingestion:
Expected to be a low hazard. May cause digestive (gastrointestinal) tract irritation.

Chronic Potential Health Effects:

Component	Carcinogen Status:
Sorbic Acid 110-44-1 (100)	No information available

Target Organs: No information available

Mutagenic Effects: May affect genetic material

Teratogenic Effects: No information available

Aggravated Medical Conditions: No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %

3. COMPOSITION/INFORMATION ON INGREDIENTS

Sorbic Acid	110-44-1	100

4. FIRST AID MEASURES

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126).

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F):	127 °C/260 °F

Flash Point Tested according to:
Not applicable

Lower Explosion Limit (%):	No information available
Upper Explosion Limit (%):	No information available

Autoignition Temperature (°C/°F):	No information available

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO2). Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: Carbon monoxide; Carbon dioxide

Specific hazards: May be combustible at high temperatures
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific Methods: No information available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Avoid dust formation. Remove all sources of ignition.

Environmental Precautions:
No information available.

Methods for Cleaning Up:
Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. All equipment used when handling the product must be grounded. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Storage

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Sensitive to light. Store in light-resistant containers. Protect from light. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents. Bases. Reducing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure: Ensure adequate ventilation. 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 Protective Equipment

Eye protection: Goggles.

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Wear respirator with dust filter..

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Sorbic Acid - 110-44-1	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Sorbic Acid 110-44-1	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Sorbic Acid 110-44-1	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid.

Appearance:
Crystalline powder. Powder.

Color:
White.

Odor:
Relatively odorless.

Taste
Relatively tasteless.

Molecular/Formula weight:
112.13

Flash point (°C):
127

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Autoignition Temperature (°C/°F):
No information available

Melting point/range(°C/°F):
132-135 °C/269.6-275 °F

Boiling point/range(°C/°F):
228 °C/442.4 °F with decomposition

pH:
No information available

Specific gravity:
1.204 @ 19 °C

Density (g/cm3):
1.2 @ 20 °C

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
3.87

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
1.33-1.38

Miscibility:
No information available

Solubility:
Very slightly soluble in water
Solubility in Water: 0.19-0.25 % @ 30 °C and 3.8% @ 100 °C
Very soluble in Ether
Solubility in Ethanol or Methanol: 12.9% @ 20 °C
Solubility in Acetone: 9.2% @ 20 °C
Solubility in Glacial Acetic Acid: 11.5% @ 20 °C
Solubility in Benzene: 2.3%
Solubility in Dioxane: 11% @ 20 °C
Solubility in Isopropanol: 8.4%
Solubility in Carbon Tetrachloride: 1.3% @ 20 °C
Solubility in Glycerol: 0.31% @ 20 °C
Solubility in Toluene: 1.9% @ 20 °C
Solubility in Cyclohexane: 0.28%

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions

Conditions to avoid:	Heat. Avoid dust formation. Material in powder form, capable of creating a dust explosion.. Exposure to light. Incompatible materials.
Incompatible Materials:	Oxidizing agents. Bases. Reducing agents.
Hazardous decomposition products:	Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.
Possibility of Hazardous Reactions:	No information available
Polymerization:	Hazardous polymerisation does not occur
Corrosivity:	No information available
Special Remarks on Corrosivity:	No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Sorbic Acid - 110-44-1

LD50/oral/rat = 3200-12500 mg/kg Oral LD50 Rat (European Chemicals Bureau IUCLID dataset)
7360 mg/kg (RTECS)
LD50/oral/mouse = 3200 mg/kg (RTECS)
3200-6400 mg/kg (European Chemicals Bureau IUCLID dataset)
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Product Information

LC50/inhalation/rat No information available
LC50/Inhalation/mouse No information available
LD50/dermal/rabbit No information available
LD50/dermal/rat No information available
LD50/oral/mouse = 3200mg/kg
LD50/oral/rat = 3200mg/kg

Local Effects

Skin irritation:	Causes skin irritation. Moderate skin irritation.
Eye irritation:	Causes eye irritation. Moderate eye irritation.
Inhalation:	Irritating to respiratory system.
Ingestion:	Low hazard. Health injuries are not known or expected under normal use. May cause digestive (gastointestinal) tract irritation.
Sensitization:	No information available

Chronic Toxicity

Chronic Toxicity Repeated or prolonged skin contact may cause skin sensitization. Prolonged or repeated skin contact may cause allergic contact dermatitis.

Carcinogenic effects: Not considered carcinogenic. Equivocal tumorigenic agent by Registery of Toxic Effects of Chemical Substances (RTECS) criteria.

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Sorbic Acid	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: May affect genetic material

Reproductive Effects: No information available

Teratogenic Effects: No information available

Target Organs: No information available

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: Information given is based on data on the components and the ecotoxicology of similar products

Ecotoxicity effects: Aquatic environment.

Aquatic toxicity:

Sorbic Acid - 110-44-1

Water Flea Data: 353.54 mg/L EC50 Daphnia magna 48 h

Mobility: No information available

Persistence and degradability: No information available

Bioaccumulative potential: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Sorbic Acid	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: None

Subsidiary Risk:	Not applicable
Marine Pollutant	No data available
ERG No:	No information available
DOT RQ (lbs):	No information available

TDG (Canada)

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available
Description:	No information available

ADR

UN-No:	No information available
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available
Classification Code:	No information available
Description:	No information available
CEFIC Tremcard No:	No information available

IMO / IMDG

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available
Description:	No information available
IMDG Page:	No information available
Marine Pollutant	No information available
MFAG:	No information available
Maximum Quantity:	No information available

RID

UN-No:	No information available
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available
Classification Code:	No information available
Description:	No information available

ICAO

UN-No:	No information available
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available
Description:	No information available

IATA

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available

Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Sorbic Acid	Present	Present	Present KE-18524	Present (2)-1075	Present	Present	Present 203-768-7

U.S. Regulations

Sorbic Acid

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 182.3089

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Sorbic Acid	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Sorbic Acid	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Sorbic Acid	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
Non-controlled

Sorbic Acid

Uncontrolled product according to WHMIS classification criteria

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Sorbic Acid	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Sorbic Acid	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Sorbic Acid	Not listed	Not listed

EU Classification

R-phrase(s)
R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Components	Classification	Concentration Limits:	Safety Phrases
Sorbic Acid		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xi - Irritant.

16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

Preparation Date: 04-Mar-2014

Reason for revision: Not applicable

Prepared by: Sonia Owen

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.