



Section 1. Product and Company Identification

Product Name S-(-)-Warfarin >99%ee
Product ID W0272
Chemical Name (Synonyms) (-)-Warfarin
Supplier LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

Emergency Phone # 1-800-424-9300

Section 2. Hazards Identification

GHS Classification Reproductive toxicity (Category 1A) H360
Specific target organ toxicity - repeated exposure, Oral (Category 1) H372
Acute aquatic toxicity (Category 3) H402
Chronic aquatic toxicity (Category 3) H412

GHS Label elements including precautionary statements

Pictogram



Signal word Danger

Hazard and precautionary statements

Hazard statements

H360 - May damage fertility or the unborn child.
H372 - Causes damage to organs through prolonged or repeated exposure if swallowed.
H412 - Harmful to aquatic life with long-lasting effects.

Precautionary statements

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust, fumes, gas, mist, vapors, spray.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P281 Use personal protective equipment as required
P273 - Avoid release to the environment.
P308 + P313 - IF exposed or concerned: Get medical advice/ attention.
P405 - Store locked up.
P501 - Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification Health hazard: 0
Chronic health hazard: *
Flammability: 0
Physical hazard: 0

NFPA Rating Health hazard: 0
Fire hazard: 0
Reactivity hazard: 0

Potential Health Effects Inhalation - May be harmful if inhaled. May cause respiratory tract irritation.
Skin - Harmful in contact with skin. May be harmful if absorbed through skin. May cause skin irritation.
Eyes - May cause eye irritation.

Ingestion - Acute toxicity. Harmful if swallowed. Causes damage to organs through prolonged or repeated exposure if swallowed.

Section 3. Composition/Information on Ingredients

Substances	Ingredient: Title Compound	Percent: 100	
Formula	C ₁₉ H ₁₆ O ₄	Formula Wt.	308.33
CAS No.	5543-57-7	EC No.	

Section 4. First Aid Measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Eye Contact	Flush eyes with water as a precaution.
Skin Contact	Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5 . Firefighting Measures

Flash Point	Not available.
Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Firefighting Procedures	Wear self-contained breathing apparatus for firefighting if necessary.
Unusual Fire Hazards	Not available.

Section 6. Accidental Release Measures

Personal Precautions	Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleanup	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: 4°C
Hazardous Decomposition Products	Hazardous decomposition products formed under fire conditions. - Carbon oxides.
Other Remarks	

Section 8. Exposure Controls/Personal Protection

Personal protective equipment EXPOSURE CONTROLS

Contains no substances with occupational exposure limit values. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

PERSONAL PROTECTION

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

Physical State	Solid	Color	White to off white powder
Boiling Point	Not available.	Volatility	Not available.
Melting Point	Not available.	Density	Not available.
Solubility	The solubility of (+)-warfarin in ethanol is approximately 5 mg/ml and approximately 25 mg/ml in DMSO and DMF	pH	Not available.
Flash Point	Not available.	Ignition temperature	Not available.
Lower explosion limit	Not available.	Autoignition temperature	Not available.
Upper explosion limit	Not available.	Vapor pressure	Not available.
Water solubility	Not available.	Odor	Not available.
Partition coefficient: n-octanol/water	Not available.	Odor Threshold	Not available.
Relative vapor density	Not available.	Evaporation rate	Not available.

Section 10. Stability and Reactivity

Stability	Stable under recommended storage conditions.
Materials To Avoid	Strong oxidizing agents, strong acids and strong bases.
Hazardous Decomposition Products	Hazardous decomposition products formed under fire conditions. - Carbon oxides.

Possibility of hazardous reactions Not available.

Conditions to avoid Not available.

Section 11. Toxicological Information

Oral LD50	Not available.	Skin corrosion/irritation	Not available.
Inhalation LC50	Not available.	Serious eye damage/irritation	Not available.
Dermal LD50	Not available.	Respiratory or skin sensitization	Not available.
Other information on acute toxicity	Not available.	Germ cell mutagenicity	Not available.
Reproductive Toxicity	Not available.	Aspiration Hazard	Not available.
Specific organ toxicity single exposure (GHS)	Not available.	Synergistic effects	Not available.
Specific organ toxicity repeated exposure (GHS)	Not available.	Additional Information	Not available.
Teratogenicity	Not available.	Signs and symptoms of exposure	Not available.
Potential Health Effects	Inhalation - May be harmful if inhaled. May cause respiratory tract irritation. Skin - Harmful in contact with skin. May be harmful if absorbed through skin. May cause skin irritation. Eyes - May cause eye irritation. Ingestion - Acute toxicity. Harmful if swallowed. Causes damage to organs through prolonged or repeated exposure if swallowed.		
Carcinogenicity	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.		

Section 12. Ecological Information

Toxicity Not available.

Mobility in soil Not available.

PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not

conducted.

Persistence and degradability Not available.

Other adverse effects Not available.

Bioaccumulative potential Not available.

Section 13. Disposal Considerations

Waste Disposal Dispose of material according to all federal, state and local regulations.
Offer material to a licensed, professional waste disposal company to dispose of as unused product.

Section 14. Transport Information

DOT (US) UN number: 2811 Class: 6.1 Packing Group: I
Proper shipping name: Toxic solid, organic, n.o.s. ((S)-(-)-Warfarin)

IATA UN number: 2811 Class: 6.1 Packing Group: I
Proper shipping name: Toxic solid, organic, n.o.s. (Warfarin)

IMDG UN number: 2811 Class: 6.1 Packing Group: I EMS #: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Warfarin)

Further Information

Section 15. Regulatory Information

Reach No.

SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components No SARA hazards.

Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components S-(-)-Warfarin >99%ee CAS: 5543-57-7

New Jersey Right To Know Components S-(-)-Warfarin >99%ee CAS: 5543-57-7

California Prop 65 Components This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

Section 16. Other Information

Other information The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.

Updated 7/28/2020

For emergencies in the USA, call
CHEMTREC 800-424-9300