

**Section 1. Product and Company Identification**

<b>Product Name</b>	(±)-Warfarin
<b>Product ID</b>	W0269
<b>Chemical Name (Synonyms)</b>	coumadin
<b>Supplier</b>	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
<b>Emergency Phone #</b>	1-800-424-9300

**Section 2. Hazards Identification**

<b>GHS Classification</b>	Acute toxicity, oral (Category 1) H300 Acute toxicity, skin (Category 4) H312 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
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**GHS Label elements including precautionary statements**

<b>Pictogram</b>	
<b>Signal word</b>	<b>Danger</b>
<b>Hazard and precautionary statements</b>	<p><b>Hazard statements</b> H300 - Fatal if swallowed. H312 - Harmful in contact with skin. H360 - May damage fertility or the unborn child. H372 - Causes damage to organs through prolonged or repeated exposure if swallowed. H402 - Harmful to aquatic life. H412 - Harmful to aquatic life with long-lasting effects.</p> <p><b>Precautionary statements</b> 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. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, eye protection, face protection. P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. P302 + P352 + P312 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell. P308 + P313 - IF exposed or concerned: Get medical advice/ attention. P363 - Wash contaminated clothing before reuse. P405 - Store locked up. P501 - Dispose of contents/ container to an approved waste disposal plant.</p>

<b>HMIS Classification</b>	Health hazard: 4 Chronic health hazard: * Flammability: 0 Physical hazard: 0
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<b>NFPA Rating</b>	Health hazard: 4 Fire hazard: 0 Reactivity hazard: 0
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<b>Potential Health Effects</b>	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.
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Reproductive - May damage fertility or the unborn child.

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### Section 3. Composition/Information on Ingredients

<b>Substances</b>	Ingredient: Title Compound	Percent: 100		
<b>Formula</b>	C <sub>19</sub> H <sub>16</sub> O <sub>4</sub>		<b>Formula Wt.</b>	308.33
<b>CAS No.</b>	81-81-2		<b>EC No.</b>	201-377-6

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### Section 4. First Aid Measures

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

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### Section 5. Firefighting Measures

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

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### Section 6. Accidental Release Measures

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

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### Section 7. Handling and Storage

<b>Handling</b>	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.
<b>Storage Conditions</b>	Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: Ambient
<b>Hazardous Decomposition Products</b>	Hazardous decomposition products formed under fire conditions. - Carbon oxides.
<b>Other Remarks</b>	

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## 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).

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## Section 9. Physical and Chemical Properties

<b>Physical State</b>	Solid.	<b>Color</b>	White powder.
<b>Boiling Point</b>	Not available.	<b>Volatility</b>	Not available.
<b>Melting Point</b>	162.0 - 164.0	<b>Density</b>	Not available.
<b>Solubility</b>	Dioxane; Acetone Ether	<b>pH</b>	Not available.
<b>Flash Point</b>	Not available.	<b>Ignition temperature</b>	Not available.
<b>Lower explosion limit</b>	Not available.	<b>Autoignition temperature</b>	Not available.
<b>Upper explosion limit</b>	Not available.	<b>Vapor pressure</b>	Not available.
<b>Water solubility</b>	Not available.	<b>Odor</b>	Not available.
<b>Partition coefficient: n-octanol/water</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Relative vapor density</b>	Not available.	<b>Evaporation rate</b>	Not available.

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## Section 10. Stability and Reactivity

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

**Possibility of hazardous reactions** Not available.

**Conditions to avoid** Not available.

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### Section 11. Toxicological Information

**Oral LD50** Rat - 1.6 mg/kg

**Skin corrosion/irritation** Not available.

**Inhalation LC50** Not available.

**Serious eye damage/irritation** Not available.

**Dermal LD50** Rat - 1,400 mg/kg  
Remarks: Sense organs and special senses (Nose, eye, ear, and taste):Eye: Chromodacryorrhea. Behavioral:Muscle weakness. Kidney, ureter, bladder:Hematuria.

**Respiratory or skin sensitization** Not available.

**Other information on acute toxicity** Not available.

**Germ cell mutagenicity** Not available.

**Reproductive Toxicity** May cause congenital malformation in the fetus. Known human reproductive toxiciant.

**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** RTECS: GN4550000

**Teratogenicity** Not available.

**Signs and symptoms of exposure** Inhibition of blood coagulation, abnormal clotting, bruising or bleeding.  
Stomach, irregularities, based on human evidence.

**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.  
Reproductive - May damage fertility or the unborn child.

**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.

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### Section 12. Ecological Information

**Toxicity** Toxicity to fish: LC50 - Oncorhynchus mykiss (rainbow trout) -> 16 mg/l - 96.0 h.  
Toxicity to daphnia and other aquatic invertebrates - EC50 - Daphnia magna (Water flea) -> 17 mg/l - 48 h.

**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** Biodegradability: Result: - Readily biodegradable (OECD Test Guideline 301D).

**Other adverse effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

**Bioaccumulative potential** Not available.

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### 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. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber.

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### Section 14. Transport Information

**DOT (US)** UN number: 2811 Class: 6.1 Packing Group: I  
Proper shipping name: Toxic solid, organic, n.o.s. (Warfarin)  
Poison inhalation hazard: No

**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

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### Section 15. Regulatory Information

#### Reach No.

**SARA 302 Components** SARA 302: The following components are subject to reporting levels established by SARA Title III, Section 302:  
Warfarin CAS #: 81-81-2 Revision Date: 2007-07-1

**SARA 313 Components** SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:  
Warfarin CAS #: 81-81-2 Revision Date: 2007-07-1

**SARA 311/312 Components** Hazards:  
Acute health hazard, chronic health hazard.

**Massachusetts Right To Know Components** No components are subject to the Massachusetts Right to Know Act.  
Warfarin CAS #: 81-81-2 Revision Date: 2007-07-01

**Pennsylvania Right To Know Components** Warfarin CAS #: 81-81-2 Revision Date: 2007-07-01

**New Jersey Right To Know Components** Warfarin CAS #: 81-81-2 Revision Date: 2007-07-01

**California Prop 65 Components** WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.  
Warfarin: CAS #: 81-81-2 Revision Date: 2007-07-01

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### 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** 11/27/2018

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