



**Notes to Physician**

Provide general supportive measures and treat symptomatically. In case of ingestion, the decision of whether or not to induce vomiting should be made by the attending physician. If burn is present, treat as any thermal burn. Removing adhered product from burned skin may compromise the skin integrity and result in infection and/or more severe scarring.

**\*\*\*If victims of chemical over-exposure are taken for medical attention, give a copy of the label or MSDS to the physician/health professional.\*\*\***

**Section 5. Fire and Explosion Data**

**Flammability of the Product** Nonflammable.

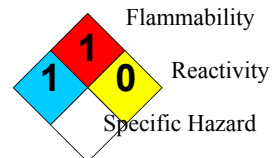
**Auto-Ignition Temperature** Not available.

**Flash Point** CLOSED CUP: >190.56°C (375°F).

**Flammable Limits** Not available.

**NFPA 704**

0=Minimal; 1=Slight;  
2=Moderate; 3=Serious;  
4=Severe



This information is for people trained in the National Fire Protection Association's (NFPA 704) Identification of the Fire Hazards of Materials.

**General Fire Hazards** High concentration of airborne dust may form explosive mixture with air. Static electric charges created by emptying product from ungrounded containers in or near flammable vapors may cause flash fire. Product is not considered combustible. If heated above its flash point in the presence of air, product can support combustion.

**Hazardous Decomposition Products** Smoke, carbon monoxide, carbon dioxide, and other products of combustion.

**Extinguishing Media** Carbon dioxide, dry chemical or water.

**Fire Fighting Equipment and Instructions** Wear full protective clothing, including self-contained positive pressure/pressure demand breathing apparatus, helmet, and protective clothing. Use water to cool fire-exposed containers and to protect personnel.

**Section 6. Accidental Release Measures**

**Containment** Contain the discharged material. If airborne dust is generated, eliminate all sources of ignition that may come into contact with the dust.

**Clean-up Procedures** Wear appropriate protective equipment and clothing during clean-up. Avoid generation of dust during clean-up. Wear an approved respirator if dust is generated above exposure limits. Attempt to reclaim free product, if this is possible. Shovel material into appropriate container for disposal. Follow all Local, State, Federal and Provincial regulations for disposal.

**Evacuation Procedures** Persons not wearing appropriate protective equipment should be excluded from area of spill until clean-up has been completed.

**Special Instructions** Avoid contact with skin and eyes. Avoid skin contact with molten resins. Avoid inhalation of dusts. Avoid inhalation of fumes from molten product.

**Section 7. Handling and Storage**

**Handling** Avoid eye and skin contact. Avoid breathing dusts from this material. Avoid breathing fumes if product is used at high temperatures. Maintain good housekeeping to prevent dust accumulation. Flaked or crushed material may cause a dust problem. If product is in dust form, it is classified as a dust explosion hazard class II. Handling of product in dust form should be in accordance with NFPA. If handling with flammable or combustible materials, the explosion hazard may increase. Avoid ignition sources such as sparks and flame. In addition, when emptying bags where flammable vapors may be present, blanket vessel with inert gas; assure proper grounding (NFPA 69 - Explosion Prevention Systems; NFPA 70 - National Electric Code; NFPA 77 - Recommended Practices on Static Electricity; NFPA 654 - Standard for the Prevention of Fire and Dust Explosions in the Chemical, Dye, Pharmaceutical, and Plastics Industry), and pour material slowly into conductive grounded chutes. An explanation of dust explosions is available in Technical Bulletin #1. Please contact customer service to request a copy. Do not reheat product packaged in light metal containers. The light metal containers will not safely support the movement or transfer of the product in a hot, molten form. Do not chisel drums in areas where flammable liquids are stored or used. Wash thoroughly after handling. Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet or applying cosmetics.

**Storage** Store at ambient temperature and atmospheric pressure. Guard against dust accumulation of this material. Flaked or crushed product may be prone to oxidation, therefore control inventory - use oldest material first. Suggest stainless steel construction for bulk storage.

## Section 8. Exposure Controls/Personal Protection

**Engineering Controls** Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into work areas by controlling it at its source. Local exhaust ventilation is recommended when generating excessive levels of airborne dust or vapors from handling or thermal processing. Use electrically grounded, explosion-proof equipment for ventilation or any handling of this product.

### Personal Protection

**Eye/Face:** Wear chemical goggles and face shield if handling molten material. Ensure compliance with OSHA's personal protective equipment (PPE) standard for eye and face protection, 29 CFR 1910.133.

**Skin:** Use impervious gloves. Work clothing sufficient to prevent all skin contact should be worn, such as coveralls and long sleeves. For heated/molten product, use any type of thermal insulating gloves and other clothing as necessary to protect from thermal burns. Ensure compliance with OSHA's personal protective equipment (PPE) standard, 29 CFR 1910.132 (general) and 138 (hand protection).

**Respiratory:** Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage, must be implemented.

**DUST/MIST:** If concentrations are below the TLV and/or PEL, a NIOSH approved disposable dust/mist respirator may be used for personal comfort. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-face piece respirator equipped with dust-mist cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in Publication No. 87-116 or ANSI Z88.2-1992. Note: ANSI Z88.2-1992 requires the use of a HEPA filter if the particle size distribution of the contaminant is unknown. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

For molten/heated product:

**GAS/VAPOR:** For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-face piece respirator equipped with appropriate chemical cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in Publication No. 87-116 or ANSI Z88.2-1992. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**General:** Use good industrial hygiene practices in handling this material. Eye wash fountains and emergency showers are recommended. Launder contaminated clothing before reuse.

Observe exposure limits for Particulates (NOC):

**ACGIH TLV TWA:** 10 mg/m<sup>3</sup> Total dust; **ACGIH TLV TWA:** 3 mg/m<sup>3</sup> Respirable dust;

**OSHA PEL TWA:** 15 mg/m<sup>3</sup> Total dust; **OSHA PEL TWA:** 5 mg/m<sup>3</sup> Respirable dust.

Chemical Name or Product Name	CAS #	OSHA PEL	ACGIH TLV
1) Rosin Ester	8050-31-5	None established	None established

*NOTE: The 1989 OSHA PELs were vacated in 1993 and are not currently enforceable by Federal OSHA. However, some state OSHA programs may still enforce the 1989 limits.*

## Section 9. Physical and Chemical Properties

<b>Physical state and appearance</b>	Solid.	<b>Vapor Density</b>	Not available
<b>Odor</b>	Slight.	<b>Percent Volatile (EPA Method 24)</b>	<1%
<b>Color</b>	Amber. (Light.)	<b>Solubility (water)</b>	Negligible
<b>Molecular Weight</b>	Not available.	<b>Density (vs. water)</b>	>1
<b>Specific Gravity</b>	1.01 (Water = 1)	<b>Flash Point</b>	CLOSED CUP: >190.56°C (375°F).
<b>Boiling Point</b>	Not applicable	<b>R/B Softening Point</b>	80 - 85 °C
<b>pH</b>	Not applicable	<b>Acid No. (per ASTM D-465)</b>	15 Max.

**Section 10. Stability and Reactivity Data**

<b>Chemical Stability</b>	The product is stable.
<b>Conditions to avoid</b>	Avoid strong oxidizing agents. Avoid dispersion of dust in air. Avoid ignition sources where dust is produced.
<b>Incompatibility</b>	May react with strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Smoke, carbon monoxide, carbon dioxide, and other products of combustion.
<b>Hazardous Polymerization</b>	Hazardous polymerization will not occur.

**Section 11. Toxicological Information**

<b>Toxicity to Animals</b>	<p><b>Rosin Ester:</b>  ORAL, rat, LD50 = &gt; 5000 to &gt; 10000 mg/kg;  DERMAL, rabbit, LD50 = &gt; 5000 mg/kg;</p> <p>This product was found to produce mild eye and skin irritation in rabbits. Product was not found to be a skin sensitizer in guinea pigs. Product was non-mutagenic in the Ames Salmonella Assay.</p>
<b>Toxicity to Humans</b>	<p>Contact may cause skin or eye irritation. Ingestion may cause nausea, vomiting, and diarrhea. Inhalation of dust may cause respiratory irritation.</p> <p>Prolonged or repeated exposure to vapors/fumes generated by heating this product may cause respiratory irritation with throat discomfort, coughing or breathing difficulty.</p> <p><b>CARCINOGENIC EFFECTS:</b> None of this product's components are listed as carcinogens by ACGIH, IARC, NIOSH, NTP or OSHA. <b>MUTAGENIC EFFECTS:</b> Not available. <b>TERATOGENIC EFFECTS:</b> Not available. No information available on the toxicity of this product to the reproductive system.</p>

**Section 12. Ecological Information**

<b>Ecotoxicity</b>	This product does not exhibit immediate danger to the aquatic environment.
<b>Environmental Fate</b>	No information is available.

**Section 13. Disposal Considerations**

<b>Waste Disposal</b>	Wastes must be tested using methods described in 40 CFR 261 to determine if it meets applicable definitions of hazardous waste. No EPA Waste Numbers are applicable for this product's components. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Write to the address listed in Section 1 for information on heavy metals analyses and other disposal information.
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**Section 14. Transport Information**

<b>DOT Classification</b>	Not a DOT controlled material (United States).
<b>Proper Shipping Name</b>	None.
<b>DOT Identification Number</b>	None.
<b>Packing Group</b>	None.
<b>Hazardous Substances Reportable Quantity</b>	Not available.
<b>Special Provisions for Transport</b>	IF SHIPPED OVER 100°C (but less than product flash point): DOT Shipping Name: Elevated temperature liquid, n.o.s.; Hazard Class: 9; UN/NA Number: UN3257; Packing group III (bulk shipping requires "HOT" placard).
<b>Additional Shipping Information</b>	Not Determined
<b>International Transportation Regulations</b>	Not Determined

## Section 15. Regulatory Information

### Federal and State Regulations

OSHA: Not hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

SARA TITLE III:

SARA Section 302 (40 CFR 355 Appendix A): **None of this product's components are listed;**

SARA Section 311/312: **None;**

SARA Section 313 (40 CFR 372.65): **None of this product's components are listed;**

CERCLA (40 CFR 302.4): **None of this product's components are listed.**

TSCA Inventory: All of this product's components are listed.

International Inventories: All of this product's components are on or exempt from these inventories: EINECS, DSL, Japan, Korea, Australia, China and the Philippines.

State lists: None of this product's components are listed in CA, FL, MA, MN, NJ, or PA.

This product does not contain any chemicals currently on the California List of Known Carcinogens and Reproductive Toxins.

## Section 16. Other Information

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists. ANSI = American National Standards Institute. ASTM = American Society for Testing and Materials. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. DOT = Department of Transportation. EPA = Environmental Protection Agency. IARC = International Agency for Research on Cancer. LD = Lethal Dose. NIOSH = National Institute of Occupational Health and Safety. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. PEL = Permissible Exposure Limit. SARA = Superfund Amendments and Reauthorization Act. TLV = Threshold Limit Value. TSCA = Toxic Substance Control Act.

Validated by Jenifer Whittington on 3/16/2004.

Verified by Product Regulatory Affairs.

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