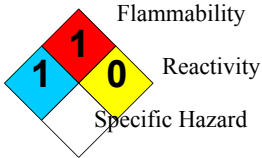




**\*\*\*If victims of chemical over-exposure are taken for medical attention, give a copy of the label or MSDS to the physician/health professional.\*\*\***

## Section 5. Fire and Explosion Data

<b>Flammability of the Product</b>	Nonflammable.	<b>NFPA 704</b>  <p>0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe</p> <p>This information is for people trained in the National Fire Protection Association's (NFPA 704) Identification of the Fire Hazards of Materials.</p>
<b>Auto-Ignition Temperature</b>	Not available.	
<b>Flash Point</b>	CLOSED CUP: 199°C (390.2°F). (Setaflash.)	
<b>Flammable Limits</b>	Not available.	
<b>General Fire Hazards</b>	Product is not considered combustible. If heated above its flash point in the presence of air, product can support combustion. Porous material such as rags, paper, insulation, or organic clay may spontaneously combust when wetted with this material. If mist is generated, minimum flash point may be reduced.	
<b>Hazardous Decomposition Products</b>	Smoke, carbon monoxide, carbon dioxide, water, trace quantities of sulfur oxides, and other normal products of combustion.	
<b>Extinguishing Media</b>	Carbon dioxide, dry chemical or water. Avoid using a direct stream of water.	
<b>Fire Fighting Equipment and Instructions</b>	Wear full protective clothing, including self-contained positive pressure/pressure demand breathing apparatus, helmet, and protective clothing. Use water spray to cool fire-exposed containers and to protect personnel.	

## Section 6. Accidental Release Measures

<b>Containment</b>	Contain the discharged material. Do not allow product to enter sewer or waterways. Check with local and state environmental agencies for guidance.
<b>Clean-up Procedures</b>	Spills may present a slipping (physical) hazard. Wear appropriate protective equipment and clothing during clean-up. Avoid skin and eye contact. Absorb spill with inert material. Shovel material into appropriate container for disposal. Thoroughly wash spill area with water after clean-up. WATER SPILL: product is regulated as an oil under the Clean Water Act. Follow all applicable regulations. Follow all Local, State, Federal and Provincial regulations for disposal.
<b>Evacuation Procedures</b>	Isolate area. Keep unnecessary personnel away. In case of large spills, follow all facility emergency response procedures.
<b>Special Instructions</b>	Remove soiled clothing and launder before reuse (see Section 7 - Storage). Avoid excessive skin contact with spilled material. Wear appropriate personal protective equipment.

## Section 7. Handling and Storage

<b>Handling</b>	Avoid prolonged or repeated skin contact with this material. Wash thoroughly after handling. Avoid inhalation of mists/vapors/fumes. Keep this product from heat, sparks, or open flame. Do not use air pressure or apply heat with open flame to remove contents of drum. After emptied, drum may retain solid, liquid and/or vapor residues. Continue to observe all precautions on label as if drum were full. Do not cut, puncture, torch or weld on or near the emptied drum. Do not use for other purposes. 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.
<b>Storage</b>	Store at ambient temperature and atmospheric pressure. Porous material such as clothing, rags, paper, insulation, or organic clay may spontaneously combust when wetted with this material.

## Section 8. Exposure Controls/Personal Protection

<b>Engineering Controls</b>	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 vapors from handling or thermal processing. Use local and general exhaust ventilation to effectively remove and prevent buildup of mists/vapors/fumes generated from the handling of this product.
<b>Personal Protection</b>	
<b>Eye/Face:</b>	Wear chemical goggles and face shield if splashing is possible. Ensure compliance with OSHA's personal protective equipment (PPE) standard for eye and face protection, 29 CFR 1910.133.

<b>Skin:</b>	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 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).
<b>Respiratory:</b>	GAS/VAPOR: 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. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-facepiece 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.
<b>General:</b>	Eye wash fountains and emergency showers are recommended. Launder contaminated clothing before reuse. Use good industrial hygiene practices in handling this material.  Observe exposure limits for Oil Mist (NOC): ACGIH TWA: 5 mg/m <sup>3</sup> Respirable; STEL 10 mg/m <sup>3</sup> Respirable; OSHA TWA: 5 mg/m <sup>3</sup> Respirable.

Chemical Name or Product Name	CAS #	OSHA PEL	ACGIH TLV
1) Distilled Tall Oil	8002-26-4	Not established	Not 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>	Liquid.	<b>Vapor Density</b>	Not available.
<b>Odor</b>	Fatty acid. (Slight.)	<b>Percent Volatile (EPA Method 24)</b>	Not available.
<b>Color</b>	Yellow.	<b>Solubility (water)</b>	Negligible
<b>Molecular Weight</b>	Not applicable.	<b>Density (vs. water)</b>	<1.0
<b>Specific Gravity</b>	0.97 (Water = 1)	<b>Flash Point</b>	CLOSED CUP: 199°C (390.2°F). (Setaflash.)
<b>Boiling Point</b>	>260°C (500°F)	<b>R/B Softening Point</b>	Not Applicable
<b>pH</b>	Not applicable.	<b>Acid No. (per ASTM D-465)</b>	Not available.

## Section 10. Stability and Reactivity Data

<b>Chemical Stability</b>	The product is stable.
<b>Conditions to avoid</b>	Avoid strong oxidizing agents. Avoid prolonged contact with porous materials.
<b>Incompatibility</b>	This product may react with strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	None, except extreme high temperatures may lead to decomposition, releasing fumes containing carbon monoxide, carbon dioxide, water, trace sulfur oxides, and/or hydrocarbons of varying molecular weights.
<b>Hazardous Polymerization</b>	Hazardous polymerization will not occur.

## Section 11. Toxicological Information

<b>Toxicity to Animals</b>	No toxicological information is available for this product. However, distilled tall oil may contain some or all of the following:  <b>Tall Oil Rosin:</b> ORAL, rat, LD50 = 7600 mg/kg; ORAL, mouse, LD50 = 4600 mg/kg; ORAL, guinea pig, LD50 = 4600 mg/kg; DERMAL, rabbit: LD50 = > 2500 mg/kg.  <b>Tall Oil Fatty Acids:</b> ORAL, rat, LD50 = > 10,000 mg/kg.
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DERMAL, rabbit, LD50 = > 2000 mg/kg.

Tall oil fatty acids were not found to be an eye or skin irritant in rabbits. No alteration of reproductive physiology was found in rats at feeding levels of 5% and 10% of their diet. Tall oil fatty acids were non-mutagenic in the Ames Salmonella Assay. Some tall oil fatty acids were found to cause skin sensitization in 50% of exposed guinea pigs.

**Tall Oil Heads:**

ORAL, rat, LD50 = > 9000 mg/kg.

**Tall Oil Pitch:**

A mixture of tall oil pitch and tall oil heads was found to cause skin sensitization in 16% of exposed guinea pigs. Tall oil pitch alone may not cause skin sensitization.

**Toxicity to Humans**

Contact may cause skin or eye irritation. Exposure to oil mists/fumes/vapors may cause respiratory tract irritation with throat discomfort, coughing, and difficulty breathing.

A similar product was not found to be a skin sensitizer in adult males following prolonged or repeated skin contact.

**CARCINOGENIC EFFECTS:** None of this product's components are listed as carcinogens by ACGIH, IARC, NIOSH, NTP or OSHA. **MUTAGENIC EFFECTS:** Not available. **TERATOGENIC EFFECTS:** Not available. No information available on the toxicity of this product to the reproductive system.

## Section 12. Ecological Information

**Ecotoxicity**

When spilled, this product may act as an oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of a body of water. Oils of any kind can cause: (a) drowning of waterfowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility; (b) lethal effects on fish by coating gill surfaces, preventing respiration; (c) potential fish kills resulting from alteration in biochemical oxygen demand; (d) asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom; and (e) adverse aesthetic effects of fouled shoreline and beaches.

No toxicological information is available for this product. However, distilled tall oil may contain some or all of the following:

**Tall Oil Fatty Acids:**

Growth Inhibition Test, OECD 201 (Alga):	AUC, 72-hr EL <sub>50</sub> = 854.90 mg/l <sup>-1</sup> with NOELr = 500 mg/l <sup>-1</sup> ; Average Specific Growth Rate, 72-hr EL <sub>50</sub> = >1000 mg/l <sup>-1</sup> , NOELr = 500 mg/l <sup>-1</sup> at 0 - 48-hr & 750 mg/l <sup>-1</sup> at 0 -72-hr;
Acute toxicity, OECD 202 (Daphnia):	48-hr EL <sub>50</sub> = >1000mg/l <sup>-1</sup> , NOELr = 1000 mg/l <sup>-1</sup> ;
Acute Toxicity, OECD 203 (Fathead Minnows):	96-hr LL <sub>50</sub> = >1000mg/l <sup>-1</sup> , NOELr = 1000 mg/l <sup>-1</sup> ;
Ready Biodegradation (modified Sturm test):	74% after 28 days;
Partition coefficient (HPLC):	log 10 Pow 4.89 to 5.98;

EL<sub>50</sub> = Median Effective Loading under static conditions to solutions prepared as Water Accommodated Fractions (WAF) at different loading rates.

AUC = Area Under Growth Curve.

LL<sub>50</sub> = Median Lethal Loading under static conditions to solutions prepared as Water Accommodated Fractions (WAF) at different loading rates.

NOELr = The No Observed Effect Loading Rate under the conditions of the test.

**Tall Oil Pitch:**

Acute fish toxicity (Zebra):  
LC50 (96h) = > 400 mg/l.

Growth inhibition studies (Fresh water algae):  
EC50 (72 hr) = > 1000 mg/l, (NOEC = 5000 mg/l).

Immobilization studies (Daphnia magna):  
EC50 (48 hr) = > 2000 mg/l.

**Environmental Fate**

Biodegradability studies showed tall oil fatty acids to be readily biodegradable. Product was degraded 50% within seven days.

**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 analysis 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**

<b>Federal and State Regulations</b>	<p>OSHA: Not hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).</p> <p>SARA TITLE III:  SARA Section 302 (40 CFR 355 Appendix A): <b>None of this product's components are listed;</b>  SARA Section 311/312 (40 CFR 370.2): <b>None;</b>  SARA Section 313 (40 CFR 372.65): <b>None of this product's components are listed;</b>  CERCLA (40 CFR 302.4): <b>None of this product's components are listed.</b></p> <p>EPA, Clean Water Act: Regulated as a non-petroleum based oil. Spills of this material to navigable waters in quantities sufficient to produce "sheen" are reportable.</p> <p>TSCA Inventory: All of this product's components are listed.</p> <p>International Inventories: All of this product's components are on or exempt from these inventories: Canada DSL, EINECS, Japan, Korea, Australia, China and the Philippines.</p> <p>State Lists: None of this product's components are listed in CA, FL, MA, MN, NJ, or PA.</p> <p>This product does not contain any chemicals currently on the California List of Known Carcinogens and Reproductive Toxins.</p>
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**Section 16. Other Information**

<b>Key/Legend</b>	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.		
<b>Validated by</b>	Richard Moyer on 8/18/2003.	<b>Verified by</b>	Regulatory Affairs Dept..
		<b>Printed</b>	8/20/2003.
<b>Supersedes Date</b>	09/20/01	<b>Reason for Revision</b>	Updated Section 12.

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