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Material Safety Data Sheet
Tall Oil Fatty Acid

Section 1 - Chemical Product and Company Identification

Synonyms : TOFA
Molecular Weight : NA
Chemical Formula : NA
Company Identification : Tradeasia International Pte. Limited
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Section 2 - Composition and Information on Ingredients

Composition:

Chemical Name	CAS No	Purity, %
Tall Oil Fatty Acid	61790-12-3	100%

Section 3 – Hazards Identification

3.1 Classification of the substance according to GHS

Signal Word(s): None Hazard Statement(s): None Product is not classified as hazardous under GHS criteria or OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 4 – First-Aid Measures

4.1. Description of first aid measures

If inhaled

Move person to non-contaminated air. If affected person is not breathing, apply artificial respiration. Seek medical attention.

In case of skin contact

In case of skin contact, wash immediately with soap and water. If irritation develops or persists, get medical attention. If hot product contacts skin, cool under running water and seek medical attention. Wash contaminated clothing before reuse.

In case of eye contact

Immediately flush eyes with flooding amounts of cool, low-pressure water for at least 15 minutes. If irritation persists, get medical attention. If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention immediately.

If swallowed

If swallowed, contact a physician or poison control center immediately. DO NOT induce vomiting unless directed to do so by medical personnel.

Section 5 – Fire Fighting Measures

Flash Point: >204ºC (>400ºF) (Cleveland Open Cup)

5.1. Suitable Extinguishing media

Carbon dioxide, dry chemical, or water. Avoid using a direct stream of water.

5.2. Specific hazards arising from the chemical

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.

5.3 Fire-fighting/Further advice

Wear full protective clothing, including self-contained positive pressure or 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

Containment: Contain the discharged material. Do not allow product to enter sewer or waterways. Check with local and state environmental agencies for guidance.

Clean-up Procedures: Spills may present a slipping (physical) hazard. Wear appropriate protective equipment and clothing during clean up. 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 oil under the Clean Water Act. Follow all applicable regulations. Follow all Local, State, Federal and Provincial regulations for disposal.

Evacuation Procedures: Isolate area. Keep unnecessary personnel away. In case of large spills, follow all facility emergency response procedures.

Special Instructions: Remove soiled clothing and launder before reuse. Avoid contact with skin and eyes. Avoid inhalation of fumes from hot product**.**

Section 7 – Handling and Storage

7.1. Precautions for safe handling

Avoid contact with eyes, skin and clothing. 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.

7.2. Conditions for safe storage, including any incompatibilities

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

8.1. Control parameters

Components	CAS-No.	Value	Control parameters	Basis
Tall Oil Fatty Acid	61790-12-3	No data available	No data available	NA

8.2. Appropriate engineering controls

- Showers
- Eyewash station
- Ventilation systems:

  Use product outdoors or in well-ventilated area. The use of local exhaust ventilation is recommended to control emissions near the source and to maintain air concentration below exposure standard. Provide mechanical ventilation in confined spaces. Use explosion-proof ventilation equipment

8.3. Individual protection measures, such as personal protective equipment (PPE)

Respiratory Protection

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 halfface piece respirator equipped with appropriate chemical cartridges may be used.

Hand Protection

Use impervious gloves. For heated 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).

Eye Protection

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.

Body Protection

Work clothing sufficient to prevent all skin contact should be worn, such as coveralls and long sleeves. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Advice on Safe Handling

Wash contaminated clothing before reuse. Wear appropriate protective clothing to prevent exposure.
Wash hands before breaks and at the end of workday. Do not eat, drink or smoke around product.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance : Light Yellow Liquid
Odour : Mild
Odour threshold : N.A.
pH @ 20°C : no data available
Melting point : 4 °C
Boiling point : no data available
Flash point : >204º C (>400º F) (Cleveland Open Cup)
Evaporation rate : Approx. 0 (n-BuAc=1) .
Flammability : Non-flammable
Upper/lower flammability or explosive limits : no data available
Vapour pressure : <0.001 mm Hg at 20º C (68º F)
Vapour density : N.A.
Relative density : N.A.
Solubility in water : 12.6 mg/L at 20º C (tall oil fatty acid)
Partition coefficient: n-octanol/water : LogKow 4.9-7.6 at 30º C (tall oil fatty acid)
Auto-ignition temperature : 495 °F
Decomposition temperature : no data available
Viscosity : 20 cP at 25º C

Section 10 – Stability and Reactivity

10.1. Chemical stability

Stable under recommended storage conditions.

10.2. Possibility of hazardous reactions

This product is stable. Hazardous polymerization will not occur.

10.3. Conditions to avoid:

Avoid strong oxidizing agents. Avoid prolonged contact with porous materials.

10.4. Incompatible materials
Strong oxidizers

10.5. Hazardous decomposition products
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.

Section 11 – Toxicological Information
Eye: Direct contact with product may cause mild eye irritation. If heated product contacts the eye, thermal burns may result.
Skin: Product may cause mild skin irritation after prolonged contact. If heated, product can cause thermal burns.
Inhalation: Exposure to oil mists/vapors/fumes may cause respiratory tract irritation. Inhalation of mists/vapors/fumes generated by heating this product may cause respiratory tract irritation with throat discomfort, coughing and difficulty breathing.
Ingestion: Ingestion of large quantities may result in gastrointestinal disturbances including irritation, nausea, and diarrhea. Aspiration into lungs may cause severe damage, including chemical pneumonitis and pulmonary edema.

Acute toxicity
LD50 Oral – rat – >10,000 mg/kg
LD50 Dermal - rabbit - >2,000 mg/kg

Skin corrosion/irritation
Not found to be a skin irritant in rabbits

Serious eye damage/eye irritation
Not found to be an eye irritant in rabbits

Respiratory or skin sensitization
Not found to be a skin sensitizer in the Buehler or Guinea Pig Maximization Test (GPMT)

Germ cell mutagenicity
Non mutagenic in the AMES Salmonella Assay. Chromosomal aberrations in Chinese hamster ovary (CHO) cells were evident only at concentrations that were overtly toxic to the cells .

Carcinogenicity
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.

Reproductive toxicity
No alteration of reproductive physiology was found in rats at feeding levels of 5% and 10% of their diet. No evidence of reproductive or developmental toxicity in a full two-generation study.
Reproduction/Developmental NOEL = 5000 mg/kg/day

Section 12 – Ecological Information
Ecotoxicity (for Tall oil fatty acid):
Acute Toxicity, Fish: 96-hr LL50 >1000 mg/l loading rate WAF; NOEL 1000 mg/l loading rate WAF
Acute Toxicity, Daphnia: 48-hr EL50 > 1000 mg/l loading rate WAF; NOEL 1000 mg/l loading rate WAF
Growth Inhibition, Algae: 72-hr EL50 for AUC= 854.90 mg/l loading rate WAF, NOEL 500 mg/l loading rate WAF
Biodegradability: 56%, 74%, 84% degradation after 28 days (three tests), readily biodegradable indicating not expected to persist in the environment (for Tall oil fatty acid)
Bioaccumulative
Potential: Partition Coefficient (LogKow) 4.9-7.6 (OECD 117), upper range indicates potential to bioaccumulate (for Tall oil fatty acid)
Other: 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.

Section 13 – Disposal Considerations

Waste disposal of substance: Waste material 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.

Section 14 – Transport Information

DOT Classification:	Not a DOT controlled material.
DOT Proper Shipping Name:	None
DOT Identification Number:	None
Packing Group:	None
Hazardous Substances Reportable Quantity:	None
Special Provisions for Transport:	IF SHIPPED OVER 100°C (but less than 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
Additional Shipping Information:	Not a Marine Pollutant
International Transportation Regulations:	Not classified

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15 – Regulatory Information

15.1. International Inventories

TSCA:	This product is on the Toxic Substances Control Act (TSCA) Inventory.

SARA TITLE III:

SARA 302 (40 CFR 355):	None of this product's components are listed.
SARA 311/312 (40 CFR 370.2):	None.
SARA 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.

EPA, Clean Water Act: Regulated as non-petroleum based oil. Spills of this material to navigable waters in quantities sufficient to produce "sheen" are reportable.

International Inventories: This product is either listed or exempt from listing on the following inventories: Canada DSL, Europe EINECS, Japan ENCS, Korea ECL, Australia AICS, China IECS and Philippines PICCS.

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

Other: Use as animal feed is prohibited in the United States. Similar regulations may restrict such use in other locations.

Section 16 : Additional Information

References: Not available.
Other Special Considerations: Not available.

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