

Material Safety Data Sheet Bionatrol-I

Version 1.1

Date Revised: March 3, 2016

1. Product Identification

| | | |
|-----------------------------------|---|--|
| Product Name | : | Bionatrol-I |
| Chemical Name | : | Refined Vegetable Oil and Fatty Acid. |
| Material Uses | : | Agricultural material – See product label for full directions for use. |
| <u>NFPA</u> | | |
| Health | : | N/A |
| Flammability | : | N/A |
| Reactivity | : | N/A |
| <u>HMS</u> | | |
| Health | : | N/A |
| Flammability | : | N/A |
| Reactivity | : | N/A |
| <u>Manufacturer's Information</u> | | |
| Name | : | NTS Research & Inc. |
| Address | : | #112-16 Fawcett Road, Coquitlam, BC, Canada V6K 6X9 |
| Telephone | : | +1 (604) 525-1256 |

2. Precautionary Labeling

Avoid contact with eyes. Keep in tightly closed container. Wash thoroughly after handling.

3. Composition/Information on Ingredients

| | | |
|-------------------|---|---------------------------------------|
| Substance/Mixture | : | Mixture. |
| Chemical Name | : | Refined Vegetable Oil and Fatty Acid. |

| Ingredients | % by weight | CAS # |
|-----------------------|-------------|-----------|
| Refined Vegetable Oil | 43 | 8001-22-7 |
| Inert Ingredients | 57 | |

4. Physical Data

| | | |
|---------------------------------------|---|--|
| Appearance | : | Green liquid at room temperature (20°C). |
| Acidity | : | pH 7 (neutral) |
| Boiling Point | : | 97°C |
| Specific Gravity (H ₂ O=1) | : | 0.989 at 20°C |
| Freezing Point | : | - 3°C |
| Vapor Pressure | : | Not determined. |
| Vapor Density | : | Not determined. |
| Evaporation Rate | : | Not determined. |
| Flash Point (Method Used) | : | > 320°C (closed cup) |
| Solubility in Water | : | Not soluble. |
| Liquid Surface Tension | : | (Est.) 25 dyne/cm at 20°C |

5. Fire and Explosion Hazard Information

| | | |
|--|---|--|
| Fire Hazard | : | No. |
| Handling Precautions | : | Use product with caution around heat, sparks, pilot lights, static electricity and open flames. |
| Extinguishing Media and Fire Fighting Procedures | : | Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists. |

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials."

Tenth Edition (1991):

Use water spray, dry chemical, foam or carbon dioxide to extinguish the fire. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

Decomposition Products Under Fire Conditions : Fumes, smoke carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

6. Emergency and First Aid Procedures

- Eye Contact : If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.
- Skin Contact : In case of skin contact, remove any contaminated clothing and wash skin with soap and water. Launder or dry-clean clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high-pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.
- Inhalation : Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer oxygen, if available. If overexposed to oil mist, remove from further exposure until excessive oil mist condition subsides.
- Ingestion : If ingested, DO NOT induce vomiting; call a physician immediately.

7. Health and Hazard Information

- Signs and Symptoms of Exposure : Prolonged or repeated skin contact may cause skin irritation.
- Nature of Hazard and Toxicity Information : In accordance with the current OSHA Hazard Communication Standard criteria, this product does not require a cancer hazard warning. This is because the product is formulated from base stocks, which are severely hydrotreated, severely solvent extracted, and/or processed by mild hydrotreatment and extraction. Alternatively, it may consist of components not otherwise affected by IARC criteria, such as atmospheric distillates or synthetically derived materials, and as such is not characterized by current IARC classification criteria. Prolonged or repeated skin contact with this product tends to remove skin oils, possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria. Product contacting the eyes may cause eye irritation. Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. This product is judged to have an acute oral LD50 (rat) greater than 10 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 7 g/kg of body weight.
- Pre-Existing Medical Conditions Which Maybe Aggravated By Exposure : None recognized.

8. Reactivity

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc. as this presents a serious explosion hazard.

9. Environmental Information

Steps to be Taken In Case Material is Released or Spilled : Recover free product. Add sand, earth, or other suitable absorbent to spill area. Minimize skin contact. Keep product out of sewers and watercourses by drinking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas. Assure conformity with applicable governmental regulations.

10. Protection and Precaution

Ventilation : Use local exhaust to capture vapor, mists or fumes, if necessary. Provide ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. No smoking, or use of flame or other ignition sources.

Respiratory Protection : Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

Protective Gloves : Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

Eye Protection : Use splash goggles or face shield when eye contact may occur.
