

MATERIAL SAFETY DATA SHEET

1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier Soya Fatty Acid TRS210		[HMIS Classification] Health - 1 Flammability - 0 Physical Hazard - 0	
Product Use The most common uses for this product include being used for the production of soaps, emulsifiers, lubricants, carriers, and soap surfactants.			
Manufacturer's Name Twin Rivers Technologies		Supplier's Name Twin Rivers Technologies	
Street Address 780 Washington Street		Street Address 780 Washington Street	
City Quincy		Province MA	Province MA
Postal Code 02169	Emergency Telephone 617-413-5339	Postal Code 02169	Emergency Telephone 617-413-5339
Date MSDS Prepared March 26, 2001		MSDS Prepared By Twin Rivers Technologies	Phone Number 617-472-9200

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation (mixture): Substance

Name	CAS No.	Wt/Wt %	EC No.	EC Symbols	EC R-phrases
Fatty Acids, C16-18 and C18 unsaturated	67701-08-0	100	2669327	Not applicable	Not applicable

Occupational exposure limits, if applicable, are listed in Section 8.

LC/LD50 information is listed in Section 11.

Full text of R phrase(s) are listed in Section 16.

3. HAZARDS IDENTIFICATION

- European Hazard Classification: This product is not classified as dangerous according to Directive 67/548/EEC.
- Emergency Overview: North America Non- Hazardous
- Potential Health Effects:
 - Eye: Accidental exposure to the eyes will cause only a mild but transient irritation.
 - Skin: Mild, primary skin irritation with prolonged or repeated contact. Heated product may cause thermal burns if contacted.
 - Inhalation: Not applicable at ambient temperature.
 - Ingestion: May cause irritation of gastrointestinal tract.

If product is heated, vaporization can occur. Eye, skin, and upper respiratory irritation may occur.
- Physical/Chemical Hazards: None identified.
- Environmental Hazards: None identified.

4. FIRST AID MEASURES

- Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
- Skin: Wash skin with soap and water upon contact. Remove contaminated clothing. If irritation develops, get medical attention. Wash clothing before reuse.
- Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion: If swallowed, do not induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

- Extinguishing Media:

SMALL FIRES:	Use CO2 or dry chemical.
LARGE FIRES:	Use foam.
- Unsuitable extinguishing media: Do not use water as an extinguishing media.
- Flash Point and method: 408° F (208.9° C) PMCC
- Explosive limits in air:

Upper:	Not available
Lower:	Not available
- Auto-ignition temperature: Not available
- Sensitivity to mechanical impact/static discharge: Not available.
- Special Protective Equipment: Wear self-contained breathing apparatus and full protective clothing.
- Other Fire Fighting Considerations: Cool containers with flooding quantities of water until well after fire is out.
- Exposure hazards: Does not decompose up to 400° F (204° C). Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions: An appropriate NIOSH/MSHA approved respirator should be used if a mist, vapor or dust is generated. Wear suitable gloves and eye/face protection. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Environmental Precautions: Minimize contamination of drains, surface and ground waters.
- Procedures for Spill/Leak Clean-up: Neutralization not required. Contain spill. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers for disposal. Dispose as any grease or oily material in compliance with Federal, State, and/or Local requirements.

Refer to Section 8 for additional personal protection information.
 Refer to Section 13 for disposal considerations.

7. HANDLING AND STORAGE

- Handling: Handle in accordance with good hygiene and safety procedures. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Since empty containers contain product residue and can be dangerous, follow all hazard warnings and precautions even after container is emptied. Keep away from sources of ignition.
- Storage: Keep away from possible contact with incompatible substances. Should be stored in resin-lined steel, aluminum, stainless steel, or reinforced fiberglass vessels. Do not store near possible sources of ignition.
- Specific use(s): Follow bulk handling and storage procedures as noted above.

Refer to Section 6 for clean-up of spillages.
 Refer to Section 13 for disposal considerations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- General Precautions: Good industrial hygiene should be followed. Avoid breathing (heated) vapors. Avoid eye and skin contact.
- Exposure Limit Values: Not established.
- Exposure Controls:
 - Engineering Controls:
 - Ventilation: Local exhaust: preferred
 Mechanical: may be necessary if working at elevated temperatures or in enclosed areas.
 - Personal Protective Equipment:
 - Eye: Goggles or face shield with goggles, dependent upon potential exposure.
 - Skin: Protective gloves: Rubber or plastic
 Dependent upon degree of potential exposure, additional personal protective equipment may be required, such as chemical boots and full protective clothing.
 - Inhalation: None required for ambient temperature, although an appropriate NIOSH/MSHA approved air-purifying respirator should be used if a mist, vapor or dust is generated. A NIOSH/MSHA approved self-contained breathing apparatus or air-supplied respirator is recommended if the concentration exceeds the capacity of cartridge respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
- Other Controls: Boots, eye wash fountain, safety shower, apron, protective clothing.
- Environmental Exposure Controls: Contact Twin Rivers Technologies for specific Community information.

9. PHYSICAL AND CHEMICAL PROPERTIES

- General Information:
 - Physical State at 72° F (22° C): Liquid to semi-solid
 - Appearance: Water white to yellow
 - Odor: Musty, fatty
 - Odor Threshold: Not available

• Important health, safety and environmental information:

pH:	Not available
Boiling point/Boiling range:	Over 500° F (260° C) @ 760 mm Hg (101.3kPa)
Flash Point & Method:	408° F (208.9° C) PMCC
Flammability (solid, gas):	Not available
Explosive properties:	Not available
Oxidising properties:	Not available
Vapor pressure:	@ 72° F (22° C) < 1 mm Hg
Relative density:	0.85 - 0.90 @ 49/25° C
Freezing point:	Not available
Solubility: Water solubility:	Negligible @ 72° F (22° C)
Fat solubility (solvent-oil to be specified):	Not available
Partition coefficient: n-octanol/water:	Not available
Viscosity:	Not available
Vapor density:	Not available
Evaporation Rate (nBuOAc=1):	Not available
Explosive Limits:	Not available
Auto ignition temperature:	Not available
Coefficient of water/oil distribution:	Not available

10. STABILITY AND REACTIVITY

- Stability: Stable under normal operational procedures.
- Conditions to Avoid: None identified.
- Materials to Avoid: Avoid strong oxidizing agents.
- Hazardous Decomposition Products: Does not decompose up to 400° F (204° C). Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.
- Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity / Rats

The acute oral LD50 for male albino rats was greater than 24 g/kg of body weight.

Skin Safety

The application of undiluted fatty acid produced mild irritation to rabbit's skin after a 24-hr. exposure. The primary irritation index was 1.6 out of a possible score of 8.

Eye Safety

The administration of undiluted test material to the eyes of rabbits produced mild, transient eye irritation. No corneal or iris involvement was observed.

12. ECOLOGICAL INFORMATION

	OLEIC ACID	LINOLEIC
96 HOUR LC50, Bluegills	66.6 mg/L	No available data
96 HOUR LC50, Fathead minnows	205 mg/L	No available data

13. DISPOSAL CONSIDERATIONS

DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL REGULATIONS. Do not dispose of via sinks, drains or into the immediate environment.

14. TRANSPORT INFORMATION

U.S. DOT: Not regulated for transport

Not classified in RID/ADR - ADNR - IMDG - ICAO/IATA - DGR

15. ADDITIONAL REGULATORY INFORMATION

INVENTORY STATUS:

Listed on TSCA (USA), AICS (Australia), DSL (Canada), EINECS (EU), IECSC (China), KECI (Korea), New Zealand (Composite List of Single Component Substances to be considered for Transfer (April 2003)), PICCS (Philippines)

WGK water endangering class 1, slightly water endangering

Canada

HAZARDOUS INGREDIENTS – WHMIS (Canadian Workplace Hazardous Materials Information System)

This product when tested as a whole is not a controlled substance within the meaning of the Hazardous Products Act.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

EUROPE

This product safety data sheet was prepared in compliance with Directive 2001/58/EC.

References: "Safety Studies on a Series of Fatty Acids" by G.B. Briggs, R.L. Doyle and J.A. Young; Amer. Ind. Assoc. J. 251-253 (April 1976).

*V. R. Mattson, et al, "Acute toxicity of selected organic compounds to fathead minnows," EPA-600/3-76-097, Oct. 1976.

The following sections contain revisions or new statements: 1, 15.

The submission of the MSDS may be required by law, but this is not an assertion that the substance is hazardous when used in accordance with proper safety practices and normal handling procedures. Data supplied are for use only in connection with occupational safety and health.

The information contained herein has been compiled from sources considered by Twin Rivers Technologies to be dependable and is accurate to the best of the Company's knowledge. The information relates to the specific product designated herein, and does not relate to use in combination with any other material or any other process. Twin Rivers Technologies assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the controlled product.