

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier TRC810 Hexanoic, Octanoic and Decanoic acid blend; Caproic, Caprylic and Capric acid blend		[HMIS Classification] Health - 2 Flammability - 1 Physical Hazard - 0	
Product Use The most common uses for this product are for the production of cutting oils, specialty soaps, and chain terminators.			
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	City Quincy	Province MA
Postal Code 02169	Emergency Telephone 617-413-5339	Postal Code 02169	Emergency Telephone 617-413-5339
Date MSDS Prepared May 17, 2010	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
Octanoic acid	124-07-2	53 – 60	2046775	C	R34
Decanoic acid	334-48-5	34 – 42	2063764	Xi	R36/38

Occupational exposure limits, if applicable, are listed in Section 8.
LC/LD50 information is listed in Section 11.

3. HAZARDS IDENTIFICATION

- Emergency Overview: **CAUTION:** Eye and skin irritant.
Avoid contact with eyes, skin or clothing. Wash thoroughly after handling.
- Potential Health Effects:
 - Eye: May cause severe but transient eye irritation.
 - Skin: Prolonged skin exposure may cause severe irritation..
 - Inhalation: May elicit pulmonary irritation if mist or vapors are formed.
May cause coughing or difficult breathing.
 - 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. 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: Remove material from mouth. Drink plenty of water. Do not induce vomiting. Obtain medical attention immediately.

5. FIRE FIGHTING MEASURES

- Extinguishing Media:

SMALL FIRES:	Use CO ₂ or dry chemical.
LARGE FIRES:	Use foam.
- Unsuitable extinguishing media: Do not use water as an extinguishing media.
- Flash Point and method: 275° F (135° 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: 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. Prevent formation of dust. 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. Store in acid resistant vessels such as stainless steel, aluminum, or steel coated with resin lining such as Lithcote LC-19 or Kanigen. Do not store near 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):	Solid
Appearance:	Water white to light yellow
Odor:	Musty, pungent
Odor Threshold:	Not available

- Important health, safety and environmental information:

pH:	3 – 4 (non-aqueous)
Boiling point/Boiling range:	>450°F (>232°C) @ 760 mm Hg (101.3kPa)
Flash Point & Method:	275° F (135° 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:	0.9 @ 72°F/22° 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 LD50 for albino rats was 12.6 gm/kg of body weight.

Eye Irritation (Rabbits)

Undiluted C-810 with no rinsing of the eyes produced severe ocular damage whereas rinsing the eyes with water after instillation of the test material reduced involvement to mild to moderate but transient irritation.

Eye Irritation (Monkeys)

Undiluted C-810, with no rinsing of the eyes with water after instillation, produced superficial corneal effects and rather severe congestion of the conjunctiva. All eyes were normal within nine days after instillation of the test material.

Skin Irritation (Four-Hour Test)*

	Primary Irritation Index	Degree of Irritancy
Rabbits	4.5	Moderate
Guinea Pigs	0.5	Slight
Humans	2.3	Moderate

* "Interspecies Comparisons of Skin Irritancy", by G. A. Nixon, C. A. Tyson and W.C. Wertz;
Tox. & Appld. Pharm. 31: 481-490 (1975)

12. ECOLOGICAL INFORMATION

C-810 Fatty Acid:

Bluegills	96h LC50	28.2 mg/l
	NOEC	10 mg/l
COD Value:	2.0 g O ₂ /g of product	

The following is data on the individual components:

Octanoic acid:

Daphnia magna	24h EC50:	550 mg/l
Leuciscus idus	48h LC50:	173 mg/l
Red killifish	96h LC50: in seawater	105 mg/l
	in freshwater	57 mg/l
Bluegill sunfish	96h LC50:	39.9 mg/l

Algae:

Nitzschia closterium	72h EC50:	144 mg/l
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Decanoic acid:

Bluegills	96h LC50:	18.9 mg/l
	NOEC	10 mg/l
Red killifish	96h LC50: in seawater	31 mg/l
	in freshwater	20 mg/l
Gammarus	96h LC50	41 mg/l

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 - ADNOR - IMDG - ICAO/IATA - DGR

15. ADDITIONAL REGULATORY INFORMATION

INVENTORY STATUS: TSCA (USA), Australia, DSL (Canada), China, EINECS (EU), ENCS (Japan), Korea, Philippines

Canada

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

This product when tested as a whole is considered a controlled substance, Class D, Division 2, Subdivision B (skin and eye irritant, toxic) 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.

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16. OTHER INFORMATION

US OSHA Labeling:

CAUTION: CAUSES IRRITATION

Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

In case of contact:

EYES- Immediately flush with plenty of water.

Get medical attention.

SKIN- Wash with soap and plenty of water. Wash clothing before reuse.

Discard contaminated shoes.

References:

"Interspecies Comparisons of Skin Irritancy", by G. A. Nixon, C. A. Tyson and W.C. Wertz;
Tox. & Appld. Pharm. 31: 481-490 (1975)

K. Verschueren. Handbook of environmental data on organic chemicals, 3rd ed. (1998).

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.