

MATERIAL SAFETY DATA SHEET

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier TRC1214 Mid Cut Fatty Acid – Lauric Acid/Myristic Acid		[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	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

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation (mixture): Substance

Name	CAS No.	Wt/Wt %	EC No.	EC Symbols	EC R-phrases
Fatty acids, C10-16	68002-90-4	100	2681056	Xi	R36

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

SECTION 3 — HAZARDS IDENTIFICATION

European Hazard Classification: This product is classified as Xi – Irritant, R36 – Irritating to eyes

- Emergency Overview: **CAUTION: MAY CAUSE EYE IRRITATION**
- 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 - May elicit transient pulmonary irritation if inhaled.
 - Ingestion - Can cause irritation to mucous membranes..

If product is heated, vaporization can occur. Eye, skin, and upper respiratory irritation may occur.

- Physical/Chemical Hazards- None identified.
- Environmental Hazards- None identified.

SECTION 4 — FIRST AID MEASURES

Skin Contact:	Wash skin with soap and water upon contact. Remove contaminated clothing. If irritation develops, get medical attention. Wash clothing before reuse.
Eye Contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
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.

SECTION 5 - FIRE FIGHTING MEASURES

- Extinguishing media: SMALL FIRES: Use CO₂ or dry chemical.
LARGE FIRES: Use foam. DO NOT use water
- Unsuitable extinguishing media: Do not use water as an extinguishing media.
- Flash Point and method: >300° F (>149° 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. Potential combustible dust if flaked or powdered. Dust generated from flaked product will be combustible at sufficient concentration.
- Exposure hazards: Does not decompose up to 400° F (204° C). Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.

SECTION 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. Dike flow of spilled material using soil or sandbags to minimize contamination of drains, surface and ground waters
- Procedures for Spill/Leak Clean-up: Sweep or shovel solids. For liquid spills, neutralization is not required. Contain spill. Absorb or cover with dry earth, sand or other noncombustible 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.

SECTION 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, follow all hazard warnings and precautions even after container is emptied. Keep away from sources of ignition.

TRC1214 – Mid Cut Fatty Acid Lauric Acid/Myristic Acid

- **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.

SECTION 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 Community information.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

- **General Information:**

Physical State @ 72° F (22° C):	Solid
Appearance:	white to light yellow
Odor:	Musty, fatty
Odor Threshold:	Not available

- **Important health, safety and environmental information:**

pH:	3-4
Boiling point/Boiling range:	>570° F (>299° C) @ 760 mm Hg (101.3kPa)
Flash Point & Method:	>300° F (>149° 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:	0.87 @ 20/20° C
Freezing point:	Not available
Solubility:	
Water solubility:	Negligible @ 72° F (22° C)

TRC1214 – Mid Cut Fatty Acid Lauric Acid/Myristic Acid

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:	
Lower:	Not available
Upper:	Not available
Auto ignition temperature:	Not available
Coefficient of water/oil distribution:	Not available

SECTION 10 - STABILITY AND REACTIVITY

- Stability: Stable under normal operational conditions.
- Conditions to Avoid: Not available
- Materials to 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.

SECTION 11 - TOXICOLOGICAL INFORMATION

Dodecanoic acid:

Irritation Data:

Eye, rabbit	Corneal opacity, mild conjunctivitis, iritis – 72 h observation
Skin, rabbit	500 mg. Mild irritation effects

Acute Toxicity:

Oral, rat LD50	12 gm/kg
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Tetradecanoic acid

Irritation Data:

Eye, rabbit	100 mg. Mild irritation effects
Skin, human	75 mg/3D-I MOD

Acute Toxicity:

LD50 skin, rabbit	No available data
LD50 oral, rat	> 10 gm/kg

SECTION 12 - ECOLOGICAL INFORMATION (Based on coconut fatty acid mixture)

Dodecanoic acid:

Bluegill sunfish	96h LC50	63.3 mg/l
	NOEC	32 mg/l
Oryzias latipes	96h LC50	8.6 mg/l
Gammarus sp.	48h EC50	8.6 mg/l
Nitzschia sp.	72h EC50	30000 mol/l

Microbial inhibition None at 10,000 mg/l

Tetradecanoic acid:

Gammarus (Hyale plumulosa)	96h LC50	no mortality at saturation conc.
goldfish	lethal dose	9 mg/l (sodium salt)
red killifish (Oryzias latipes)	96h LC50	in seawater: no mortality at saturation conc. 118 mg/l (sodium myristate)

SECTION 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.

Contaminated packaging: Observe local regulations.

SECTION 14 - TRANSPORT INFORMATION

U.S. DOT: Not regulated for transport
Not classified in RID/ADR - ADNR - IMDG - ICAO/IATA – DGR

SECTION 15 - ADDITIONAL REGULATORY INFORMATION

INVENTORY STATUS: TSCA, EINECS, NDSL (Canada)*, AUSTR, KOREA, CHINA
*NOTE: Individual components listed on DSL

C-1214 WGK water endangering class 1- slightly water endangering
is based on the computation rule
of VwVwS Annex 4 for mixtures.

EC LABELING AND CLASSIFICATION:
According to Directives 67/548/EEC and 1999/45/EC.

- Symbol:	Xi	Irritant
- Risk phrase(s):	R36	Irritating to eyes.
- Safety phrase(s):	S25	Avoid contact with eyes.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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.

SECTION 16 - OTHER INFORMATION

EUROPE

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

R-phrase(s):
R36 Irritating to eyes.

References: RTECS ACCESSION NUMBER OE9800000
RTECS ACCESSION NUMBER QH4375000

Patty's Industrial Hygiene and Toxicology, 4th ed. Edited by George D. Clayton & Florence E. Clayton

BIBRA toxicity profile (1996) n-Decanoic acid

TRC1214 – Mid Cut Fatty Acid Lauric Acid/Myristic Acid

Handbook of Environmental Data on Organic Chemicals, 3rd Edition, Karel Verschueren
Onitsuka et al. 1989. Chemosphere. 18:1621-1631.
Mann & Florence. 1987. Fuel. 66:404-407.

USA LABELING:

CAUTION:

MAY CAUSE EYE IRRITATION

Avoid contact with eyes. Wash thoroughly after handling.

FIRST AID:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

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 of 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