



MATERIAL SAFETY DATA SHEET

MSDS Number: ACID124-1

Revision Date: May 29, 2003

Supersedes Issue Date: December 1, 1999

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

- **Product identification**

Synonyms/Trade Names: Stearic Acid / **T-1655**

- **Product uses**

The most common uses for this product are for the production of soaps, emulsifiers, lubricants, carrier, and soap surfactants.

- **Company/undertaking identification**

North America: The Procter & Gamble Company
Procter & Gamble Chemicals
Sharon Woods Technical Center
11530 Reed Hartman Highway
Cincinnati, Ohio 45241

Department issuing MSDS: Product Safety and Regulatory Affairs
1-800-477-8899

- **Emergency Telephone:** CHEMTREC 1-800-424-9300 U.S. and Canada
1-703-527-3887 For calls originating elsewhere

U.S. Emergency, Quality or Service Issues: Call Customer Service
1-800-477-8899 or 513-626-6882

2. COMPOSITION/INFORMATION ON INGREDIENTS

Saturated straight chain aliphatic monocarboxylic acids, mainly palmitic and stearic acid.

<u>Name</u>	<u>CAS No.</u>	<u>Wt/Wt %</u>	<u>EC-No.</u>
Octadecanoic acid	57-11-4	40-55	2003134

Contains:

Tetradecanoic acid	544-63-8	0-5	2088752
Hexadecanoic acid	57-10-3	40-55	2003129
Octadecanoic acid	57-11-4	40-55	2003134

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

3. HAZARDS IDENTIFICATION

- Emergency Overview: Potential combustible dust if flaked or powdered. Dust generated from flaked product will be combustible at sufficient concentration.
 - 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. May elicit transient pulmonary irritation if inhaled.
 - 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: Potential combustible dust if flaked or powdered. Dust generated from flaked product will be combustible at sufficient concentration.
 - 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 - Avoid breathing dust. If inhaled, 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: ~356° F (>180° C) ASTM D 92
- Explosive limits in air:
 - Upper: Not available
 - Lower: Not available

5. FIRE FIGHTING MEASURES - CONTINUED

- 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 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: Sweep or shovel solids. For liquid spills, neutralization is 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. Prevent formation of dust. Since empty containers contain product residue, 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 practices should be followed.
Avoid breathing (heated) vapors or dust. 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.
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9. PHYSICAL AND CHEMICAL PROPERTIES

- General Information:
 - Physical State @ 72° F (22° C): Solid
 - Appearance: Water white to yellowish
 - Odor: Musty, fatty
 - Odor Threshold: Not available
- Important health, safety and environmental information:
 - pH: Not available
 - Boiling point/Boiling range: 464° F (240° C) @ 15 mm Hg
 - Flash Point & Method: ~356° F (>180° C) ASTM D 92
 - Flammability (solid, gas): Not available
 - Explosive properties: Not available
 - Oxidising properties: Not available
 - Vapor pressure @ 212° F (100° C) <0.75 mm Hg
 - Specific Gravity (H₂O=1): ~0.84 @ 75/25° C
 - Freezing point: Not available
 - Solubility:
 - Water solubility: Negligible @ 72° F (22° C)
 - Fat solubility (solvent-oil to be specified): Not available

9. PHYSICAL AND CHEMICAL PROPERTIES - CONTINUED

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 conditions.
- Conditions to Avoid: None identified.
- Materials to Avoid: Strong oxidizing agents.
- Hazardous Decomposition Products: Does not decompose up to 400° F (204° C). Thermal decomposition may produce carbon monoxide and/or carbon dioxide.
- Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

	<u>Palmitic Acid</u>	<u>Stearic Acid</u>	
IRRITATION DATA:			
Eye, rabbit	Not irritating	Not irritating	
Skin, rabbit	Not irritating	Not irritating** 500 mg/24H MOD*	
Skin, human	75 mg/3D-I MLD	75 mg/3D-I MLD	
ACUTE TOXICITY:	<u>Palmitic Acid</u>	<u>Stearic Acid</u>	<u>Myristic acid</u>
Oral, rat LD50	>10 gm/kg	>10 gm/kg	> 10 gm/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fishes

		<u>Palmitic Acid</u>	<u>Stearic Acid</u>
Goldfish	(lethal dose)	11 mg/l (sodium salt)	14 mg/l (sodium salt)
Red killifish	96h LD50	150 mg/l (sodium salt)	125 mg/l (sodium salt)

Aquatic Invertebrates

Daphnia magna: Palmitic and stearic acids; not acutely toxic to Daphnia Magna at concentrations within its aqueous solubility (water hardness of 215 & 54 mg/L CaCO₃).

Algae

		<u>Palmitic Acid</u>	<u>Stearic Acid</u>
Scenedesmus subspicatus	EC50	Not available	> 1016 mg/l
Scenedesmus subspicatus	NOEC	Not available	> 1016 mg/l

Sodium stearate: 89% in 28 days “Sealed Vessel Test” (Modified Sturm Test)

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.

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

Octadecanoic acid	Listed on TSCA (USA), DSL (Canada), EINECS (EC), Philippines, China, Korea, Australia, ENCS (Japan)
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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.

References: RTECS ACCESSION NUMBER RT4550000 – Palmitic acid
 *RTECS ACCESSION NUMBER WI2800000 – Stearic acid
 RTECS ACCESSION NUMBER QH4375000 – Myristic acid

**Acute toxicity and irritation studies on a series of fatty acids. J. Am. Oil Chem. Soc., 56(1979), p. 760A-

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

The following sections contain revisions or new statements: 1, 2, 5-10, 13-16.

Department issuing MSDS: Product Safety and Regulatory Affairs 1-800-477-8899.

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.

16. OTHER INFORMATION - CONTINUED

The information contained herein has been compiled from sources considered by Procter & Gamble 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. Procter & Gamble 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.