Rierden Chemical & Trading Company

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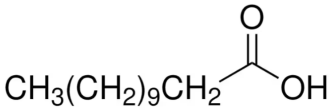
Safety Data Sheet

Lauric Acid



I IDENTIFICATION

Synonyms ***n*-dodecanoic acid, 1-undecanecarboxylic acid, laurostearic acid & others**
CAS # **143-07-7**
Europe EC # **205-582-1**
Material Use **manufacture of alkyd resins, soaps, surfactants, insecticides and food additives**

EMERGENCY INFORMATION		
In the U.S.A.	***Call CHEMTREC***	***(800) 424-9300***
In Canada	***Call CANUTEC (collect)***	***(613) 996-6666***

II HAZARD IDENTIFICATION

GHS Class	***eye irritation***	***aquatic acute***
(Category)	***(2A)***	***(3)***
Signal Words	***WARNING***	***no Signal Word***
		no Pictogram
Hazard Statements	*causes serious eye irritation (H319)*	*harmful to aquatic life (H402)*

GHS Precautionary Statements for Labelling

P262 **Do not get in eyes.**
P280 **Wear eye protection.**
P273 **Avoid release to the environment.**
P305, P351, P338 **Rinse cautiously with water for several minutes. Remove contact lenses if present & easy to do. Continue rinsing.**

III COMPOSITION

	CAS NUMBER	%	TLV ppm / mg/m^3	LD_{50} (*mg/kg*) ORAL	LD_{50} (mg/kg) SKIN	LC_{50} ppm INHALATION
Lauric Acid	143-07-7	100%	not listed	>>5000	>>2000	not known

IV FIRST AID

SKIN: ***Solid:*** Brush off; then wash with soap & water.
Molten: **Wash with cold water immediately!** Then remove contaminated clothing & continue washing. Do not reuse until thoroughly laundered. Seek medical help for burn injury if required.
EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this non-toxic substance. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

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V FLAMMABILITY & FIRE-FIGHTING

Flash Point	163°C / 325°F (Open Cup); above 160°C / 320°F (Cleveland open cup)[1]
Autoignition Temperature	>250°C / >482°F[1]
Flammable Limits	not known
Combustion Products	carbon monoxide, nitrogen oxides, smoke, corrosive aldehydes
Firefighting Precautions	treat as an oil fire; firefighters must wear SCBA
Static Discharge	product dust is combustible may become an explosion hazard

VI ACCIDENTAL RELEASE MEASURES

Leak Precaution	***solid*****:** not applicable; ***molten material***: dyke to control spillage
Handling Spill	***solid*****:** sweep, shovel & store in closed containers for disposal; ***molten material***: pump as much as possible into salvage containers; allow residue to solidify, then shovel & scrape residue into containers for disposal

VII HANDLING & STORAGE

Store away from oxidising agents and alkalis. Never cut, drill, weld or grind on or near this container, whether empty or full. *To ensure product longevity in storage replace drum or IBC cover or ensure that bags are intact.*

Lauric acid dust is potentially flammable/explosive. Avoid generating product dust. If dust forms in processing, install adequate ventilation to clear workplace air. ***Molten material is above 50°C (120°F) – a burn hazard to exposed skin.***

Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

VIII EXPOSURE CONTROL & PERSONAL PROTECTION

ACGIH TLV	not listed	ACGIH STEL	not listed
OSHA PEL	not listed	OSHA STEL	not listed

Ventilation	no special mechanical ventilation required – *lauric acid dust is flammable; a spark or flame may cause ignition*; if dust forms during handling, exhaust ventilation should be installed to prevent fire
Hands	***solid:*** no special protective gloves required ***molten material:*** wear insulated "Viton"* gloves
Eyes	safety glasses with side shields – *always protect eyes!*
Clothing	***solid:*** no special protective clothing required ***molten material:*** *wear suitable insulated "Viton"* clothing to protect against thermal burns*

** Other materials are also resistant to molten lauric acid. Consult supplier for further information*

IX PHYSICAL AND CHEMICAL PROPERTIES

NOTE: *for Flash Point, Autoignition Temp, & Flammable Limits see Part 5.*

Odour & Appearance	white colourless or slightly yellow crystals with a faint odour
Odour Threshold	0.1ppm
Vapour Pressure	0.0075mmHg / <0.001kPa (25°C / 77°F)[1]; 1mmHg / 0.13kPa (121°C / 250°F)
Evaporation Rate (*Butyl Acetate = 1*)	not known – not volatile
Vapour Density (air = 1)	~7 – *theoretical value*
Boiling Range	299°C / 570°F[1]
Melting Point	44-46°C / 111-115°F
Specific Gravity	0.88 (20/20°C)
Water Solubility	4.8mg/litre[1] (20°C / 68°F) – *virtually insoluble*
- in other solvents	vegetable oils, hydrocarbons, acetone, diethyl ether
Log $P_{o/w}$ (*Octanol/H_2O Partition Coefficient*)	4.6; also 5.05[1]
pH	none – *does not yield hydrogen ions in solution*
Molecular Weight	200grams/mole

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X REACTIVITY

Dangerously Reactive With	strong oxidising agents, strong reducing agents
Also Reactive With	saponification with strong alkalis may be vigorous, particularly in the presence of methanol
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	peroxides and aldehydes may form on prolonged storage in contact with air
Mechanical Impact	not sensitive

XI TOXICITY INFORMATION

i. ACUTE EXPOSURE

Skin Contact	"irritating" (*1 of 2 reports*)[1], "not irritating" (*1 of 2 reports*)[1]
Skin Absorption	slight; no toxic effects by this route
Eye Contact	"irritating" but not corrosive (*3 of 4 reports*)[1], "not irritating" (*1 of 4 reports*)[1] 100% lauric acid damaged rabbits' eyes; at 1-2%, there was no irritation[1]
Inhalation	may irritate nose throat and lungs – sneezing, coughing and difficult breathing
Ingestion	little to no effect (lauric acid is a normal component of the diet) – *not a route of industrial exposure*
LD_{50} (oral)	>5000[1], 10,000 & 12,000mg/kg (rat), >10,000mg/kg (mouse)[1]
LD_{50} (skin)	>2000mg/kg (rabbit) – *no mortality*[1]
LC_{50} (inhalation)	not known – not toxic; no mortality observed in testing with capric acid

ii. CHRONIC EXPOSURE

General	4-day contact (*under airtight patch*) caused skin irritation; also observed after 10 days application[1]
Sensitising	not a sensitiser[1]
Carcinogen/Tumorigen	not known to be a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect on humans or animals[1]
Mutagen	not known to be a mutagen or teratogen in humans or animals[1]
Synergistic With	not known
LD_{50} (oral)	>5000[1], 10,000 & 12,000mg/kg (rat), >10,000mg/kg (mouse)[1]
LD_{50} (skin)	>2000mg/kg (rabbit) – *no mortality*[1]
LC_{50} (inhalation)	not known – not toxic; no mortality observed in testing for capric acid[1]

XII ECOLOGICAL INFORMATION

Bioaccumulation	readily metabolised; cannot bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 62%, 85% & 86% in 30 days[1]
Abiotic Degradation	½-life for abiotic degradation in air ~27 hours
Mobility in soil, water	water insoluble; immobile through soil and the water column
Aquatic Toxicity	
LC_{50} (Fish 96 hr)	35mg/litre (Lepomis macrochirus[2] & Oncorhyinchis mykiss), 150mg/litre (Danio rerio)[1], 5mg/litre (Oryzias latipes)[1]
LC_{50} (Crustacea, 48hr)	3.6[1] & 16.9mg/litre (Daphnia magna)[2], 5mg/litre (Artemia salina)[1], 1000mg/litre (Hyale plumulosa)[1]
EC_{50} (Algae, 96hr)	7.6mg/litre (Pseudokirchnerella subcapitata)[1], 9.7mg/litre ("*green algae*")[2]
LC_{10} (Microorganisms)	912 & >1000mg/litre (Pseudomonas putida)[1]

***NOTE:** Lauric acid is virtually insoluble in water. Rapid biodegradation depends on good emulsification in the watery medium.*

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XIII DISPOSAL CONSIDERATIONS

Waste Disposal **do not flush to sewer**; may be incinerated in approved facility with flue gas monitoring & scrubbing, may be landfilled if local regulations permit; ***excellent feedstock for biogas generation or biodiesel production***

Containers **Drums** should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.
Pails must be vented and thoroughly dried prior to crushing and recycling.
IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years.
Warning: never cut, drill, weld or grind on or near this container, even if empty.

XIV TRANSPORT INFORMATION

USA 49 CFR & Canada TDG

Product Identification Number	**UN – not regulated for transport**
Shipping Name	**not regulated for transport**
Classification	**not regulated for transport**
Marine Pollution	***not a marine pollutant***
ERAP Required	***No***
Reportable Quantity (RQ)	***none***

XV REGULATIONS

Canada DSL	**on inventory**
U.S.A. TSCA	**ACTIVE**
Europe EINECS	**on inventory**

This common substance is present on most national chemical inventories.

U.S.A. Regulations:

FIFRA Requirements: The following inert ingredient is also eligible for inclusion in FIFRA Section 25(b) pesticide products applied to food use sites (e.g., food crops, animals used for food, etc.): lauric acid.

FDA Requirements: Lauric acid is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity of the substance added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) any substance intended for use in or on food is of appropriate food grade and is prepared and handled as a food ingredient.

SARA

Physical Hazards	Chemical Hazards
☐Explosive	☐Acute toxicity (any route of exposure)
☐Flammable	☐Skin corrosion or irritation
☐Oxidizer (liquid, solid or gas)	☒Serious eye damage or eye irritation
☐Self-reactive	☐Respiratory or skin sensitization
☐Pyrophoric (liquid or solid)	☐Germ cell mutagenicity
☐Pyrophoric Gas	☐Carcinogenicity
☐Self-heating	☐Reproductive toxicity
☐Organic peroxide	☐Specific target organ toxicity (single or repeated ex.)
☐Corrosive to metal	☐Aspiration hazard
☐Gas under pressure (compressed gas)	☐Simple Asphyxiant
☐In contact with water emits flammable gas	☐Hazard Not Otherwise Classified
☐Combustible Dust	
☐Hazard Not Otherwise Not Otherwise Classified	

XVI OTHER INFORMATION

PLEASE ENSURE THAT THIS MSDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT.

EMERGENCY INFORMATION: Call CHEMTREC (800) 424-9300

Date of Preparation **August 2011**
Date of Revision **November 2017, June 2016, June 2013, February 2019 (D. Moreno), October 2024 (M.Link)**
Prepared for Rierden Chemical & Trading Company, by **Peter Bursztyn**
With data from Registry of Toxic Effects of Chemical Substances (RTECS - USA), Hazardous Substance Data Base (HSDB - USA), Cheminfo (CCOHS - Canada), OSHA website, European Chemicals Agency (EChA) dossiers & other sources (below if used), as required/available.

(1) European Chemicals Agency (EChA) dossier for lauric acid: *http://echa.europa.eu/registration-dossier/-/registered-dossier/15262/1*

(2) USA EPA Screening Level Document, n-Alkyl Carboxylic Acids, December 2009:
http://www.epa.gov/ChAMP/pubs/n-Alkyl%20Carboxylic%20Acids_HBP_December%202008.pdf

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