

RCT**Rierden Chemical & Trading Company****115 West Church Street****P.O. Box 7072****Libertyville, IL 60048****Tel (847) 816-9310 Fax (847) 816-6364****sales@rierdenchemical.com****Safety Data Sheet****Biodiesel****I IDENTIFICATION**

Synonyms Soybean Oil, Methyl esters (Methyl Soyate) *OR* Rapeseed Oil Methyl Esters (RME);
Fatty Acid Methyl Esters, C₁₆ – C₁₈ & C₁₈ unsaturated; Fatty Acids, Vegetable Oil Methyl Esters

CAS #* 67784-80-9 *OR* 73891-99-3

Europe EC #** 203-993-0 *OR* 267-055-2

Material Use fuel (diesel, jet & heating) oil blending

*Includes one or more of: 112-39-0, 112-61-8, 112-62-9, 112-63-0

**Includes one or more of: 203-966-3, 203-990-4, 203-992-5

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** *NOT HAZARDOUS***(Category)****Signal Words** *NONE***Hazard Statements** *NONE***III COMPOSITION**

	CAS NUMBER	%	TLV ppm / mg/m ³	LD ₅₀ (mg/kg) ORAL	LD ₅₀ (mg/kg) SKIN	LC ₅₀ mg/m ³ INHALATION
Soybean Oil, Methyl Esters <i>OR</i>	67784-80-9	100%	not listed**	not known	not known	not known
Rapeseed Oil, Methyl Esters <i>may include one or more of:</i>	73891-99-3	100%	not listed**	not known	not known	not known
Methyl Ester of Palmitic Acid	112-39-0	variable*	not listed**	>>2000	not known	>>5100
Methyl Ester of Stearic Acid	112-61-8	variable*	not listed**	>>2000	not known	>>5000
Methyl Ester of Oleic Acid	112-62-9	variable*	not listed**	not known	not known	not known
Methyl Ester of Linoleic Acid	112-63-0	variable*	not listed**	not known	not known	not known

* proportions vary depending on the original fat or oil – none are considered hazardous

** may be regulated as oily mists – 5mg/m³**IV FIRST AID**

SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.

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 product. The stomach should only be emptied under medical supervision, after installing an airway to protect the lungs.

cont'd next page**PLEASE ENSURE THAT THIS MSDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT****EMERGENCY INFORMATION:****Call CHEMTREC****(800) 424-9300**

V FLAMMABILITY & FIRE-FIGHTING

Flash Point	not below 130°C / 266°F (closed cup)
Autoignition Temperature	not known – probably ~240°C / ~460°F
Flammable Limits	not known
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments including corrosive aldehydes
Firefighting Precautions	treat as an oil fire; firefighters must wear SCBA
Static Discharge	cannot accumulate a static charge

VI ACCIDENTAL RELEASE MEASURES

Leak Precaution	dyke to prevent environmental contamination
Handling Spill	recover free liquid with explosion-proof pumps; absorb residue on an inert sorbent, sweep, shovel & store in closed 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. Always replace drum, pail or IBC cap prior to moving the container.

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 exhaust ventilation required		
Hands	no special protective glove required; "Viton" gloves are resistant to this product		
Eyes	safety glasses with side shields – <i>always protect eyes!</i>		
Clothing	no special protective clothing required		

IX PHYSICAL AND CHEMICAL PROPERTIES

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

Odour & Appearance	clear white to pale-yellow liquid with mild fatty odour
Odour Threshold	not known
Vapour Pressure	not known – very low; fatty acid methyl esters C ₁₄ and higher <5x10 ⁻⁵ mmHg
Evaporation Rate (Butyl Acetate = 1)	not known – not volatile
Vapour Density (air = 1)	>9 – <i>theoretical value</i>
Decomposition Temperature	not known – <i>no decomposition below 100°C / 212°F</i>
Boiling Range	200-440°C / 390-820°F
Freezing Point	not known – <i>may be as high as 5°C / 421°F</i>
Cloud Point	variable – approximately 0°C / 32°F
Specific Gravity	0.86 (20/20°C)
Water Solubility	fatty acid methyl esters are essentially insoluble in water
- in other solvents	vegetable oils, hydrocarbons, acetone, diethyl ether
Log p _{oc} (Octanol/H ₂ O Partition Coefficient)	8.2 ¹ – <i>for stearic acid, methyl ester as representative of the group</i>
Viscosity	not known
pH	none – <i>does not yield hydrogen ions in solution</i>
Molecular Weight	approx. 256-300 (<i>mixture of the methyl esters of several fatty acids</i>)

cont'd next page

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

EMERGENCY INFORMATION:

Call CHEMTREC

(800) 424-9300



X REACTIVITY

Dangerously Reactive With	strong oxidising agents
Also Reactive With	acids or alkalis may cause hydrolysis; strong alkalis may cause vigorous saponification
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	acids or alkalis may cause hydrolysis
Decomposition Products	methanol
Mechanical Impact	not sensitive

XI TOXICITY INFORMATION**i. ACUTE EXPOSURE**

Skin Contact	no effect on brief contact; methyl palmitate irritating in rabbits after 4 hours continuous contact ¹ methyl stearate not irritating in rabbits after 4 hours continuous contact ²
Skin Absorption	probably nil; no toxic effects by this route
Eye Contact	little to no effect ^{1,2}
Inhalation	little to no effect
Ingestion	little to no effect – not a route of industrial exposure
LD ₅₀ (oral)	>2000mg/kg (rat – methyl stearate) ² , >2000mg/kg (rat – methyl palmitate) ¹ – no mortality in either study
LD ₅₀ (skin)	not known – not toxic
LC ₅₀ (inhalation)	>5100mg/m ³ (rat – methyl stearate) ² , >5000mg/m ³ (rat – methyl palmitate) ¹ – no mortality in either study

ii. CHRONIC EXPOSURE

General	prolonged or repeated skin exposure may cause dermatitis through removal of skin oils
Sensitising	not a sensitiser ^{1,2}
Carcinogen/Tumorigen	not known to be a tumorigen or a carcinogen in humans or animals ^{1,2}
Reproductive Effect	no known effect on humans or animals ¹
Mutagen	not known to be a mutagen or teratogen in humans or animals ^{1,2}
Synergistic With	not known

XII ECOLOGICAL INFORMATION

Bioaccumulation	readily metabolised; will not bioaccumulate
Biodegradation	biodegrades readily; methyl palmitate 75% in 28 days ¹ , methyl stearate 87% in 28 days ²
Abiotic Degradation	predicted atmospheric oxidation ½-life 0.5 days
Mobility in soil, water	water insoluble; moves very slowly through soil and the water column
Aquatic Toxicity	not known – no evidence of toxicity to the aquatic environment
LC ₅₀ (Fish, 96hr)	550mg/litre (Brachydanio rerio – methyl palmitate) ¹ , no data available for methyl stearate ²
LC ₅₀ (Crustacea, 48hr)	>0.02 & >100mg/litre (Danio rerio – both methyl stearate & palmitate) – no immobility observed ^{1,2} , >100mg/litre (Danio rerio – methyl stearate only) ²
EC ₅₀ (Algae, 72hr)	>0.023 & >100mg/litre (Pseudokirchnerella subcapitata) ^{1,2}
LC ₅₀ (Microorganisms)	no data – ready biodegradation suggests that this product is not toxic to sewage bacteria

NOTE: Data dossiers for methyl palmitate (Ref #1) & methyl stearate (Ref #2) represent the various fatty acid methyl esters in this product. Fatty acid methyl esters are almost water insoluble. Various methods are used in the above tests to disperse them into water, probably accounting for the large variability. The conclusion is that this product has very low toxicity to aquatic life.

cont'd next page

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

EMERGENCY INFORMATION:

Call CHEMTREC

(800) 424-9300



XIII DISPOSAL CONSIDERATIONS

Waste Disposal **do not flush to sewer**; may be incinerated in approved facility with flue gas monitoring & scrubbing; local regulations may permit disposal of this non-hazardous product in a sanitary landfill

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

Shipping Name

Classification

Marine Pollution**ERAP Required****Reportable Quantity (RQ)****UN – not regulated for transport****not regulated for transport****not regulated for transport****not a marine pollutant****No****none****XV REGULATIONS****Canada DSL** on inventory**U.S.A. TSCA** on inventory**Europe EINECS** on inventory**Sara 311/312**

Acute: No

Chronic: No

Fire: No

Sudden Release of Pressure: No

Reactivity: Yes

XVI OTHER INFORMATION**Date of Preparation** March 2011**Date of Revision** April 2013, April 2016Prepared 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, dossier for methyl palmitate (substance representative of the product):**<http://echa.europa.eu/registration-dossier/-/registered-dossier/15817>(2) **European Chemicals Agency, dossier for methyl stearate (substance representative of the product):**<http://echa.europa.eu/registration-dossier/-/registered-dossier/2147>**last page of SDS****PLEASE ENSURE THAT THIS MSDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT****EMERGENCY INFORMATION:****Call CHEMTREC****(800) 424-9300**