



SAFETY DATA SHEET

SDS ID NO.: 0349MAR019
Revision Date 07/22/2016

1. IDENTIFICATION

Product Name: Marathon Petroleum Ester Bottoms

Synonym: Ester Bottoms; Fatty Acid Methyl Ester Distillation Bottoms
Product Code: 0349MAR019
Chemical Family: Hydrocarbon Mixture

Recommended Use: As a general purpose, Crude-Form Mixture by Up-Chain/Mid-Chain Manufacturers and Processors, where further refinement or processing will occur.

Restrictions on Use: The product as described herein is not-fit-for-use, without further evaluation and processing by the subsequent user(s) of this product in the USA or other jurisdiction, in the following products:

- Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.);
- Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials intended for use as ingredients in such products (e.g. flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum-Toxin Act of 1913 (21 U.S.C. 151 et seq.), by either the Food and Drug Administration or the Department of Agriculture; or
- Any other industrial, commercial, or consumer product that requires meeting discrete specifications and/or regulations for such use, which includes but is not limited to lubricants, paints, consumables, research, testing, or other goods.

Manufacturer, Importer, or Responsible Party Name and Address:
Cincinnati Renewable Fuels LLC
A Subsidiary of Marathon Petroleum Corporation
4700 Este Ave
Cincinnati, OH 45232

SDS information: 1-419-421-3070

Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitization	Category 1B
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Hazards Not Otherwise Classified (HNOC)

Not applicable.

Label elements

EMERGENCY OVERVIEW

Warning

May cause an allergic skin reaction



Appearance Thick Brown Liquid

Physical State Liquid

Odor Mild Chain Fatty Acid

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves

Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response

IF ON SKIN: Wash with plenty of soap and water

If skin irritation or rash occurs: Get medical attention

Wash contaminated clothing before reuse

Precautionary Statements - Storage

Not applicable.

Precautionary Statements - Disposal

Dispose of contents/container at an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition Information:

Name	CAS Number	% Concentration
Soybean Oil, Methyl Ester	67784-80-9	30-60
Soybean Oil	8001-22-7	10-40
Glycerides, Soya Dihydrogenated	68553-05-9	5-10
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock	68918-38-7	1-10
Glycerides Soya Mono-	68201-47-8	0.5-5

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

First Aid Measures**General Advice:**

In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation:

Move victim to fresh air. Provide respiratory support, if necessary. Get medical attention if cough or other respiratory symptoms develop.

Skin Contact:

Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation or rash occurs. Wash contaminated clothing before re-use.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion: If swallowed, DO NOT induce vomiting. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Get immediate medical attention.

Most important signs and symptoms, both short-term and delayed with overexposure

Adverse Effects: May cause sensitization by skin contact. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking. Preexisting skin conditions and/or respiratory disorders may be aggravated by exposure to this product.

Indication of any immediate medical attention and special treatment needed

Notes To Physician: INGESTION: Do not induce vomiting. Low viscosity product can be sucked into the lungs and cause damage after swallowing or vomiting. The metabolism of fatty acid methyl ester may release free methanol in the body that could induce metabolic acidosis with delayed effects. If a large amount of product is ingested, i.e. several ounces, consider the use of ethanol or fomepizole (Antizol) and hemodialysis. Consult standard literature or contact a poison control center for treatment details.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small fires, Class B fire extinguishing media such as CO₂, dry chemical, foam or water spray can be used. For large fires, water spray, fog or foam can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media

Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical

This product is not a flammable liquid per the OSHA Hazard Communication Standard, but may ignite and/or burn at temperatures exceeding the flash point. Spontaneous combustion may occur under high temperature, closed conditions if material is absorbed in various fiber matrices and oxygen is present (e.g. oily rags). Vapors are heavier than air and may accumulate in low lying areas. Vapors may accumulate in confined spaces.

Hazardous combustion products

Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Special protective equipment and precautions for firefighters

Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Keep run-off water out of sewers and water sources.

Additional firefighting tactics

Not applicable.

NFPA

Health 2

Flammability 1

Instability 0

Special Hazard -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources. All contaminated surfaces will be slippery.
Protective equipment:	Use personal protection measures as recommended in Section 8.
Emergency procedures:	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
Environmental precautions:	Avoid release to the environment. Avoid subsoil penetration.
Methods and materials for containment:	Contain liquid with sand or soil.
Methods and materials for cleaning up:	Absorb small spills with absorbent material. Recover large spills into approved containers. Clean contaminated surface thoroughly. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers.

7. HANDLING AND STORAGE

Safe Handling Precautions:	NEVER SIPHON THIS PRODUCT BY MOUTH. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Avoid repeated and prolonged skin contact. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.
Storage Conditions:	Keep in a cool, well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep away from heat and sources of ignition. Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Store wiping rags in metal cans with tightly fitting lids. Corrosion and microbial growth are promoted by the presence of water. Avoid contamination by storing in water-free tanks with scheduled water drainage. Contact with copper/alloys, lead, tin and zinc may result in increased sediment and deposits that can plug filters. Degradation can be avoided by preventing temperature extremes and the presence of air during storage.
Incompatible Materials	Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELs:	OSHA - Vacated PELs	NIOSH IDLH
Soybean Oil, Methyl Ester 67784-80-9	-	-	-	-
Soybean Oil 8001-22-7	-	TWA: 5 mg/m ³ Vegetable oil mist, respirable fraction TWA: 15 mg/m ³ Vegetable oil mist, total	TWA: 5 mg/m ³ mist, respirable fraction TWA: 15 mg/m ³ mist, total	-
Glycerides, Soya Dihydrogenated 68553-05-9	-	-	-	-
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock 68918-38-7	-	-	-	-
Glycerides Soya Mono- 68201-47-8	-	-	-	-

Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures: Ensure adequate ventilation, especially in confined areas. Local or general exhaust required when using at elevated temperatures that generate vapors or mists. Use

mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection:	Use goggles or face-shield if the potential for splashing exists.
Skin and body protection:	Wear neoprene, nitrile or PVA gloves to prevent skin contact. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.
Respiratory protection:	Breathing apparatus needed when aerosol or mist is formed. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Thick Brown Liquid
Color	Brown
Odor	Mild Chain Fatty Acid
Odor Threshold	No data available.

<u>Property</u>	<u>Values (Method)</u>
Melting Point / Freezing Point	No data available.
Initial Boiling Point / Boiling Range	>232 °C / >450 °F
Flash Point	>232 °C / >450 °F
Evaporation Rate	No data available.
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%):	
Upper Flammability Limit:	No data available.
Lower Flammability Limit:	No data available.
Explosion limits:	No data available.
Vapor Pressure	No data available.
Vapor Density	No data available.
Specific Gravity / Relative Density	0.86
Water Solubility	No data available.
Solubility in other solvents	No data available.
Partition Coefficient	No data available.
Decomposition temperature	No data available.
pH:	Not applicable.
Autoignition Temperature	No data available.
Kinematic Viscosity	No data available.
Dynamic Viscosity	1.7 cP @ 140°F
Explosive Properties	No data available.
VOC Content (%)	No data available.
Density	No data available.
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	The product is non-reactive under normal conditions.
<u>Chemical stability</u>	The material is stable at 70°F (21°C), 760 mmHg pressure.
<u>Possibility of hazardous reactions</u>	None under normal processing.
<u>Hazardous polymerization</u>	Will not occur.

Conditions to avoid	Excessive heat, sources of ignition, open flame. Water contamination during storage.
Incompatible Materials	Strong oxidizing agents.
Hazardous decomposition products	None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation	Excessive inhalation of mist may result in respiratory irritation. Overheating may produce vapors which may cause respiratory irritation, dizziness and nausea.
Eye contact	Produces little or no irritation on direct contact with the eye.
Skin contact	May cause sensitization by skin contact. Prolonged and repeated contact may cause defatting and drying of the skin and may lead to irritation and/or dermatitis.
Ingestion	Ingestion of large amounts may cause gastrointestinal disturbances. Aspiration into lungs may cause chemical pneumonia and lung damage.

Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Soybean Oil, Methyl Ester 67784-80-9	>5000 mg/kg (Rat)	>5000 mg/kg (Rat)	-
Soybean Oil 8001-22-7	-	-	-
Glycerides, Soya Dihydrogenated 68553-05-9	-	-	-
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock 68918-38-7	-	-	-
Glycerides Soya Mono- 68201-47-8	-	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

SOYBEAN, METHYL ESTERS: Dermal sensitization study (Guinea Pigs) repeat insult patch procedure with induction and challenge patches indicated a positive sensitization response.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs and Symptoms	May cause allergic skin reaction. Symptoms may include redness, itching, and inflammation. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking. Preexisting skin conditions and/or respiratory disorders may be aggravated by exposure to this product.
Sensitization	May cause sensitization by skin contact. Not expected to be a respiratory sensitizer.
Mutagenic effects	None known.
Carcinogenicity	None known.

Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Soybean Oil, Methyl Ester 67784-80-9	Not Listed	Not Listed	Not Listed	Not Listed
Soybean Oil	Not Listed	Not Listed	Not Listed	Not Listed

8001-22-7				
Glycerides, Soya Dihydrogenated 68553-05-9	Not Listed	Not Listed	Not Listed	Not Listed
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock 68918-38-7	Not Listed	Not Listed	Not Listed	Not Listed
Glycerides Soya Mono- 68201-47-8	Not Listed	Not Listed	Not Listed	Not Listed

Reproductive toxicity	None known.
Specific Target Organ Toxicity (STOT) - single exposure	Not classified.
Specific Target Organ Toxicity (STOT) - repeated exposure	Not classified.
Aspiration hazard	Potential for aspiration if swallowed.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product is not expected to be harmful to aquatic organisms.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Soybean Oil, Methyl Ester 67784-80-9	-	-	-	-
Soybean Oil 8001-22-7	-	-	-	-
Glycerides, Soya Dihydrogenated 68553-05-9	-	-	-	-
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock 68918-38-7	-	-	-	-
Glycerides Soya Mono- 68201-47-8	-	-	-	-

<u>Persistence and degradability</u>	Expected to be readily biodegradable under aerobic conditions.
<u>Bioaccumulation</u>	Not expected to bioaccumulate in aquatic organisms.
<u>Bioaccumulative Potential</u>	If released to soil and water, this product is expected to be readily biodegradable under aerobic conditions.
<u>Mobility in soil</u>	Considered to have high mobility in soil based on glyceride content. May partition into air, soil and water.
<u>Other adverse effects</u>	No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues

Long-term storage may result in decomposition of the oil and could result in a rancid odor.

Safe Handling of Wastes

Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Do not expose to heat, open flames, strong oxidizers or other sources of ignition.

Disposal of Wastes / Methods of Disposal

The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal

Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION**DOT (49 CFR 172.101):**

UN Proper Shipping Name: Not Regulated
UN/Identification No: Not applicable
Class: Not applicable.
Packing Group: Not applicable.

TDG (Canada):

UN Proper Shipping Name: Not Regulated
UN/Identification No: Not applicable.
Transport Hazard Class(es): Not applicable.
Packing Group: Not applicable.

15. REGULATORY INFORMATION**US Federal Regulatory Information:**

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Soybean Oil, Methyl Ester	NA
Soybean Oil	NA
Glycerides, Soya Dihydrogenated	NA
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock	NA
Glycerides Soya Mono-	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
Soybean Oil, Methyl Ester	NA
Soybean Oil	NA
Glycerides, Soya Dihydrogenated	NA
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock	NA
Glycerides Soya Mono-	NA

SARA Section 311/312: Acute Health Hazard

SARA Section 313: This product does not contain components, which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R):

Name	CERCLA/SARA 313 Emission reporting:
Soybean Oil, Methyl Ester	None
Soybean Oil	None
Glycerides, Soya Dihydrogenated	None
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock	None

Glycerides Soya Mono-	None
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State and Community Right-To-Know Regulations:

The following component(s) of this material are identified on the regulatory lists below:

Soybean Oil, Methyl Ester

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Soybean Oil

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Glycerides, Soya Dihydrogenated

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Glycerides Soya Mono-

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Canada DSL/NDL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Soybean Oil, Methyl Ester	D2B	1%
Soybean Oil	Uncontrolled product according to WHMIS classification criteria	-
Glycerides, Soya Dihydrogenated	Uncontrolled product according to WHMIS classification criteria	
(C16-C18) and (C-18) Unsaturated Trialkyl Glyceride Soapstock	Uncontrolled product according to WHMIS classification criteria	
Glycerides Soya Mono-	Uncontrolled product according to WHMIS classification criteria	



Note: Not applicable.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety

Revision Notes

Revision Date 07/22/2016

Revised Sections

The following sections (§) have been updated:

3. COMPOSITION/INFORMATION ON INGREDIENTS

4. FIRST AID MEASURES

7. HANDLING AND STORAGE

9. PHYSICAL AND CHEMICAL PROPERTIES

11. TOXICOLOGICAL INFORMATION

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.