

SAFETY DATA SHEET

1. Identification

Product identifier	BIODIESEL
Other means of identification	
SDS number	10364
Synonyms	B99 * B99.9 * B99.99 * B100
Recommended use	Renewable fuel; diesel blending component.
Recommended restrictions	Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

Manufacturer/Importer/Supplier/Distributor information

Supplier

Flint Hills Resources, LP
4111 E. 37th St. North
Wichita, KS 67220
67220-3203
United States

Telephone numbers – 24 hour emergency assistance

Chemtrec 800-424-9300 (CCN:8586)

Telephone numbers – general assistance

8-5 (M-F, CST) SDS Assistance 316-828-7988

Email: msdsrequest@fhr.com

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Aspiration hazard	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be fatal if swallowed and enters airways.
Precautionary statement	
Prevention	Not applicable.
Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	When it is heated, this material may cause thermal burns. Wear protective gloves/eye protection/face protection.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
METHYL ESTERS		See Below	95 - 100
WATER		7732-18-5	≤ 0.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments

Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

Methyl Esters ingredient can be represented by CAS RN 67762-38-3, CAS RN 67762-26-9, CAS RN 515152-40-6, or a mixture of the three.

This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Duonix Beatrice, LP representative.

4. First-aid measures

Inhalation

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR).

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin contact

Wash skin with plenty of soap and water.

Get medical attention if irritation develops or persists.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

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. Get medical attention if irritation develops or persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important symptoms/effects, acute and delayed

Aspiration may cause pulmonary edema and pneumonitis. INHALATION: Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs.

May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

SKIN:

Prolonged skin contact may defat the skin and cause drying, cracking and/or dermatitis.

EYES:

May cause slight to mild eye irritation with tearing, redness, or a stinging or burning sensation. May cause temporary swelling of the eyes with blurred vision. Effects may become more serious with repeated or prolonged contact.

INGESTION:

May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. INGESTION: If ingested this material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. SKIN: Hot material may cause skin burns. EYES: Hot material may cause burns to the eyes. Early ophthalmologic evaluation is recommended.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Use water spray, dry chemical, carbon dioxide, or fire-fighting foam for fires to extinguish fire.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Combustion may produce COx, reactive hydrocarbons, irritating vapors, and other decomposition products in the case of incomplete combustion. Material will burn in a fire.
Special protective equipment and precautions for firefighters	Evacuate area and fight fire from a safe distance. Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow, if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire. Always stay away from tanks engulfed in flame. Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary people away; isolate hazard area and deny entry. For spills in confined areas, ensure adequate ventilation. For spills outdoors, stay upwind. IF TANK, RAILCAR OR TANK TRUCK IS INVOLVED IN A FIRE, isolate for 800 meters (1/2 mile) in all directions. Evacuate area endangered by release as required. See Exposure Controls/Personal Protection (Section 8).
Methods and materials for containment and cleaning up	Do not touch or walk through spilled material. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Small Spills: Keep unnecessary people away. Isolate area for at least 50 meters (164 feet) in all directions to preserve public safety. For large spills, if downwind consider initial evacuation for at least 800 meters (1/2 mile). Large Spills: Dike far ahead of liquid spill for later disposal. Avoid clean up procedures that may result in water pollution. Stop leak when safe to do so. See Exposure Controls/Personal Protection (Section 8).
Environmental precautions	Prevent entry into water ways, sewers, basements or confined areas. Notify local, provincial and/or federal authorities, if required.
7. Handling and storage	
Precautions for safe handling	Do not breathe mist or vapor. Avoid contact with strong oxidizers. Prevent small spills to minimize slip hazard or release to the environment. Do not cut, grind, drill, weld or reuse empty containers unless adequate precautions are taken. Rags, cloths and debris saturated with this material should be put into dedicated storage and disposal drum or can filled with enough water to completely immerse the contents. Heated material can cause thermal burns. Avoid personal contact with this material. Always observe good personal hygiene measures, such as removing contaminated clothing and protective equipment, washing after handling the material and before entering public areas. Restrict eating, drinking and smoking to designated areas to prevent personal chemical contamination. Routinely wash work clothing and protective equipment to remove contaminants. See Section 8 of the SDS for Personal Protective Equipment.
Conditions for safe storage, including any incompatibilities	Store in closed containers in a cool, isolated, well-ventilated area away from excessive heat and incompatibles. Avoid contact with strong oxidizers. Empty containers may contain material residue. Do not reuse without adequate precautions.

8. Exposure controls/personal protection

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Consider the following when employing engineering controls and selecting personal protective equipment: potential hazards of the material, applicable exposure limits, job activities, and other substances in the work place. Ventilation and other forms of engineering controls are the preferred means for controlling exposures below occupational exposure limits and guidelines.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Keep away from eyes and face. Contact can be avoided by using chemical safety glasses, goggles and/or face shield. Have eye washing facilities readily available where eye contact can occur.
Skin protection	
Hand protection	Avoid skin contact with this material. Use chemical resistant gloves when handling this material. Contact the glove manufacturer for specific advice on glove selection regarding permeability and breakthrough times for your use conditions. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. When handling hot material, use heat resistant gloves.
Other	Avoid skin contact with this material. Additional protective clothing may be necessary.
Respiratory protection	Under normal conditions of use, ventilation and engineering controls are sufficient. If irritation is evident, and/or a non-routine or emergency situation, NIOSH approved breathing equipment may be required.
Thermal hazards	Contact with hot material can cause thermal burns which may result in permanent damage. Wear appropriate thermal protective clothing. Additional protection may be necessary to prevent skin contact including use of apron, arm covers, face shield, or boots.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Not applicable
Color	Clear to translucent yellow to red
Odor	Mild
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 95 °F (> 35 °C)
Flash point	> 200 °F (> 93.33 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Density	60.80 lb/ft ³
Kinematic viscosity	3.93 - 4.3 mm ² /s
VOC	100

10. Stability and reactivity

Reactivity	See statements below.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Not anticipated under normal conditions.
Conditions to avoid	Avoid unventilated areas, heat, open flames, sparks and ungrounded electrical equipment.
Incompatible materials	Avoid contact with strong oxidizers. See precautions under Handling & Storage (Section 7).
Hazardous decomposition products	Not anticipated under normal conditions.

11. Toxicological information**Information on likely routes of exposure**

Inhalation	Likely route of exposure
Skin contact	Likely route of exposure
Eye contact	Likely route of exposure
Ingestion	Likely route of exposure

Symptoms related to the physical, chemical and toxicological characteristics

Aspiration may cause pulmonary edema and pneumonitis. **INHALATION:**
Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs.

May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

SKIN:
Prolonged skin contact may defat the skin and cause drying, cracking and/or dermatitis.

EYES:
May cause slight eye irritation with tearing, redness, or a stinging or burning sensation. May cause transient swelling of the eyes with blurred vision. Effects may become more serious with repeated or prolonged contact.

INGESTION:
May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Not classified.

Components	Species	Test Results
METHYL ESTERS		
<u>Acute</u>		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
WATER (CAS 7732-18-5)		
<u>Acute</u>		
Oral		
LD50	Rat	> 89800 mg/kg
Skin corrosion/irritation	Not classified.	
Serious eye damage/eye irritation	Not classified.	

Respiratory or skin sensitization

Respiratory sensitization Not classified.

Skin sensitization Not classified.

Germ cell mutagenicity Not classified.

Carcinogenicity Not classified.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Not classified.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Toxicological data

BIODIESEL: Biodiesel and renewable diesel are names of alternative diesel-substitute fuels, derived from biological sources such as vegetable oils or tallow. Limited acute studies indicate that renewable/biodiesel has very low inherent toxicity. Short-term mutagenicity assays on the neat material have been negative to date. A subchronic inhalation exposure of rats to emissions from a diesel engine burning biodiesel fuel derived from soybean oil found statistically significant, but minor and not consistently exposure-related, differences in body weight, nonpulmonary organ weights, serum chemistry, and glial fibrillary acidic protein in the brain. No significant exposure-related effects on survival, clinical signs, feed consumption, ocular toxicity, hematology, neurohistology, micronuclei in bone marrow, sister chromatid exchanges in peripheral blood lymphocytes, fertility, reproductive toxicity, or teratology were noted. A number of recent studies have addressed some of the potential health impacts of emissions from biodiesel combustion and have found that there is lower mutagenic potency of biodiesel exhaust extracts when compared to those of petroleum derived diesel fuel. While there are suggestions that its exhaust emissions are less likely to present any risk to human health relative to petroleum diesel emissions, the variable nature of biodiesels chemical composition necessitates more research in biologic systems.

12. Ecological information

Ecotoxicity Material not classified as harmful to aquatic organisms.

Components	Species	Test Results
METHYL ESTERS		
Aquatic		
<i>Acute</i>		
Algae	EC50 Pseudokirchnerella subcapitata	> 100 mg/l, 72 hr
Crustacea	EC50 Daphnia magna	> 100 mg/l, 48 hr
Fish	EC50 Danio rerio	> 100 mg/l, 96 hr

Persistence and degradability Readily biodegradable in the environment.

Bioaccumulative potential Not likely to bioaccumulate in aquatic organisms.

Mobility in soil May partition into air, soil and water.

Other adverse effects No other adverse effects expected.

13. Disposal considerations

Disposal instructions Dispose of contents/container in accordance with local/regional/national/international regulations. This material, as supplied, when discarded or disposed of, is a hazardous waste according to Federal Regulations due to the material exhibiting a hazardous characteristic under Subpart C of 40 CFR 261. The transportation, storage, treatment and disposal of waste material must be conducted in compliance with federal, state, and local regulations. Under RCRA it is the responsibility of the user of the material to determine, at the time of disposal, whether this material meets RCRA criteria for hazardous waste.

For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).

Hazardous waste code	The proper waste code must be evaluated at the time of disposal and should be determined by the user and waste disposal company.
Waste from residues / unused products	Dispose of this material in accordance with all applicable local and national regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with government regulations. Packaging may contain residue that can be hazardous.

14. Transport information

General information	BILL OF LADING - BULK (U. S. DOT): Not regulated by DOT BILL OF LADING - NON-BULK (U. S. DOT): Not regulated by DOT Due to the possible variances of this material, the shipping classification must be evaluated at the time of shipment. Please consult 49 CFR 171 - 180 for specific shipping information.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not classified for MARPOL. Please contact the Transportation Compliance CSO if transportation mode is ship or vessel to determine the need for a MARPOL classification.

15. Regulatory information

US federal regulations	All ingredients are on the active TSCA inventory, or are not required to be listed on the active TSCA inventory. This material does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372). Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to comply may result in substantial civil and criminal penalties. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories Aspiration hazard

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

California Proposition 65



WARNING: California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

16. Other information, including date of preparation or last revision

Issue date	09-08-2015
Revision date	02-13-2018
Version #	04
Further information	<p>WARNING: THIS PRODUCT, AS INDICATED, CONTAINS BIODIESEL. BIODIESEL, OR FUELS BLENDED WITH BIODIESEL, MAY UNDER CERTAIN COLD WEATHER CONDITIONS GEL, CLOG, DAMAGE OR HARM FUEL STORAGE TANKS, PIPING, METERS, DIESEL ENGINES AND/OR RELATED FUEL SYSTEMS (INCLUDING, BUT NOT LIMITED TO MARINE EQUIPMENT). IT IS IMPERATIVE THAT BEFORE YOU USE OR STORE THIS PRODUCT YOU CONDUCT AN ASSESSMENT TO DETERMINE WHETHER THIS FUEL IS COMPATIBLE WITH YOUR PARTICULAR EQUIPMENT/MACHINERY IN WHICH THIS FUEL MIGHT BE STORED, TRANSPORTED OR COMBUSTED. AS SOME MANUFACTURERS MAY VOID ENGINE WARRANTIES IF THIS FUEL IS USED, IT IS IMPORTANT YOU REVIEW THE TERMS OF YOUR MANUFACTURER'S WARRANTY AND DETERMINE IF THIS FUEL IS RIGHT FOR YOUR APPLICATION.</p> <p>DISCLAIMER OF ALL WARRANTIES: DUONIX BEATRICE MAKES NO WARRANTY EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR WARRANTY FOR FITNESS FOR ANY PARTICULAR PURPOSE AND HEREBY DISCLAIMS ALL SUCH WARRANTIES REGARDING THIS PRODUCT.</p> <p>Fixed equipment: E-124 Pump-around Trim Cooler D-120 C-103 Reflux Pump-around Drum T-1701/2 ME Day Tanks E-1701/2 ME Day Tank Exchangers T-1703-5 ME Storage Tank Exchangers E-1703-5 ME Storage Tank Exchangers</p> <p>Rotating equipment: P-118 A/B Reflux Pump-around A-1701/2 ME Day Tank Agitators A-1703-5 ME Storage Tank Agitators P-1703 A/B ME Load Out Pump P-1702 ME Transfer Pump</p> <p>PFD Process streams: 505, 510, 513, 514, 1121, 1419, 1420, 1421, 1422, 1423, 1424, 1425</p>
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 1 Instability: 0
Disclaimer	THIS SDS HAS BEEN PREPARED TO COMPLY WITH FEDERAL REGULATIONS THAT ARE INTENDED TO QUICKLY PROVIDE USEFUL INFORMATION TO THE USER(S) OF THIS MATERIAL OR PRODUCT - IT IS NOT INTENDED TO SERVE AS A COMPREHENSIVE DISCUSSION OF ALL POSSIBLE RISKS OF HAZARDS, BUT RATHER PROVIDES INFORMATION GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY AS RELEVANT REGARDING THE POTENTIAL HAZARDS OF THIS PRODUCT. ADEQUATE TRAINING, INSTRUCTION, WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS. USERS SHOULD REVIEW THE INFORMATION IN THE SDS, AND SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS, INCLUDING ENSURING THAT THIS IS THE MOST CURRENT SDS.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.
Completed by	Flint Hills Resources, LP - Operations EH&S