# Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>CITGO Biodiesel (B100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Biodiesel; B100 Biodiesel; Virgin Biodiesel; Soy Biodiesel; Rapeseed Biodiesel, Tallow Biodiesel; Canola Biodiesel; Soybean Esters B100 Biodiesel; Soy Methyl Ester (SME); Biomass Based Diesel; Fatty Acid Methyl Esters.</td>
</tr>
<tr>
<td>Code</td>
<td>BDB100</td>
</tr>
</tbody>
</table>

**Supplier's details**

<table>
<thead>
<tr>
<th>CITGO Petroleum Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.O. Box 4689</td>
</tr>
<tr>
<td>Houston, TX 77210</td>
</tr>
<tr>
<td><a href="mailto:sdsvend@citgo.com">sdsvend@citgo.com</a></td>
</tr>
</tbody>
</table>

**Emergency telephone number (with hours of operation)**

| Technical Contact: (800) 248-4684 |
| Medical Emergency: (832) 486-4700 |
| CHEMTREC Emergency: (800) 424-9300 |
| (United States Only) |

# Section 2. Hazards identification

**OSHA/HCS status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture**

- SKIN IRRITATION - Category 2
- EYE IRRITATION - Category 2B
- CARCINOGENICITY - Category 2
- SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
- ASPIRATION HAZARD - Category 1

**GHS label elements**

- **Hazard pictograms**

**Signal word**

Danger

**Hazard statements**

Causes skin and eye irritation.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.

**Precautionary statements**

- **General**
  
  Diesel engine exhaust can cause upper respiratory tract irritation and reversible pulmonary effects. Long-term exposure to diesel engine exhaust may cause cancer. Do not syphon by mouth.

- **Prevention**
  
  Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

- **Response**
  
  IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Section 2. Hazards identification

Storage: Store locked up.
Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements: Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Avoid contact with skin and clothing. Wash thoroughly after handling.

Hazards not otherwise classified: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion. Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture: Substance
Other means of identification: Biodiesel; B100 Biodiesel; Virgin Biodiesel; Soy Biodiesel; Rapeseed Biodiesel, Tallow Biodiesel; Canola Biodiesel; Soybean Esters B100 Biodiesel; Soy Methyl Ester (SME); Biomass Based Diesel; Fatty Acid Methyl Esters.

CAS number/other identifiers

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean Oil, Methyl Ester</td>
<td>30-60</td>
<td>67784-80-9</td>
</tr>
<tr>
<td>Fatty Acids, Methyl Esters</td>
<td>30-60</td>
<td>68937-84-8</td>
</tr>
<tr>
<td>Fatty acids, tallow, M esters</td>
<td>30-60</td>
<td>61788-61-2</td>
</tr>
<tr>
<td>Fatty Acids, C14-18 and C16-18- Unsaturated, M esters</td>
<td>30-60</td>
<td>67762-26-9</td>
</tr>
<tr>
<td>Rape Oil, Methyl Ester</td>
<td>30-60</td>
<td>73891-99-3</td>
</tr>
<tr>
<td>Fatty Acids, Canola-Oil, Methyl Esters</td>
<td>30-60</td>
<td>129828-16-6</td>
</tr>
<tr>
<td>Methanol</td>
<td>&lt;0.5</td>
<td>67-56-1</td>
</tr>
</tbody>
</table>

* = Various    ** = Mixture    *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Section 4. First aid measures

**Ingestion**
- Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**
- **Eye contact**: Causes eye irritation.
- **Inhalation**: May cause respiratory irritation.
- **Skin contact**: Causes skin irritation. Defatting to the skin.
- **Ingestion**: May be fatal if swallowed and enters airways.

**Over-exposure signs/symptoms**
- **Eye contact**: Adverse symptoms may include the following: pain or irritation, watering, redness.
- **Inhalation**: Adverse symptoms may include the following: respiratory tract irritation, coughing.
- **Skin contact**: Adverse symptoms may include the following: irritation, redness, dryness, cracking.
- **Ingestion**: Adverse symptoms may include the following: nausea or vomiting.

**Indication of immediate medical attention and special treatment needed, if necessary**
- **Notes to physician**: If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.
- **Specific treatments**: Treat symptomatically and supportively.
- **Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**
- **Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.
- **Unsuitable extinguishing media**: None known.
### Section 5. Fire-fighting measures

| Specific hazards arising from the chemical | This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. In a fire or if heated, a pressure increase will occur and the container may burst. |
| Hazardous thermal decomposition products | Decomposition products may include the following materials: carbon dioxide, carbon monoxide, Diesel engine exhaust |
| Special protective actions for fire-fighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| Special protective equipment for fire-fighters | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |

### Section 6. Accidental release measures

| Personal precautions, protective equipment and emergency procedures |
| For non-emergency personnel | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| For emergency responders | If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| Environmental precautions | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

**Methods and materials for containment and cleaning up**

| Small spill | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| Large spill | Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. |

### Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures**

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or
Section 7. Handling and storage

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits
Methanol

ACGIH TLV (United States, 3/2016).
Absorbed through skin.
TWA: 200 ppm 8 hours.
TWA: 262 mg/m³ 8 hours.
STEL: 250 ppm 15 minutes.
STEL: 328 mg/m³ 15 minutes.

NIOSH REL (United States, 10/2013).
Absorbed through skin.
TWA: 200 ppm 10 hours.
TWA: 260 mg/m³ 10 hours.
STEL: 250 ppm 15 minutes.
STEL: 325 mg/m³ 15 minutes.

OSHA PEL (United States, 6/2016).
TWA: 200 ppm 8 hours.
TWA: 260 mg/m³ 8 hours.

Appropriate engineering controls
Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Section 8. Exposure controls/personal protection

Environmental exposure controls
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
- Appropriate techniques should be used to remove potentially contaminated clothing.
- Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection
- Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection
- Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Heavy duty, industrial grade chemically resistant gloves constructed of nitrile, neoprene, polyethylene, fluoroplastic rubber or polyvinyl chloride as approved by glove manufacturer.
- Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Leather gloves are not protective for liquid contact.

Body protection
- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
- Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.

Respiratory protection
- Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance
- Physical state: Liquid.
- Color: Amber.
- Odor: Slight.
- pH: Neutral

Boiling point
- >140°C (>284°F)

Flash point
- Closed cup: >93°C (>199.4°F)

Lower and upper explosive (flammable) limits
- Not available.

Vapor pressure
- <0.13 kPa (<1 mm Hg) [room temperature]

Vapor density
- Not available.

Relative density
- 0.86 to 0.89

Density lbs/gal
- Estimated 7.29 lbs/gal

Density gm/cm³
- 7.35 g/cm³
### Section 9. Physical and chemical properties

**Flow time (ISO 2431)**: Not available.

**Viscosity**
- Kinematic (40°C (104°F)): <0.05 cm²/s (<5 cSt)

**Viscosity SUS**
- Estimated 21 SUS @104 F

**Conductivity**
- <50 picosiemens/meter (unadditized)

### Section 10. Stability and reactivity

**Reactivity**
- Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).

**Chemical stability**
- The product is stable.

**Possibility of hazardous reactions**
- Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid**
- Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not store with strong oxidizing agents.

**Incompatible materials**
- No specific data.

**Hazardous decomposition products**
- Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### Section 11. Toxicological information

#### Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean Oil, Methyl Ester</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Fatty Acids, Methyl Esters</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Fatty Acids, C14-18 and C16-18-Unsaturated, Methyl Esters</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Rape Oil, Methyl Ester</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>145000 ppm</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>64000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5600 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: No additional information.

#### Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>40 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

**Skin**: May cause skin irritation.
- **Soybean oil, Me ester**: May cause mild irritation.
- **Fatty acids, C12-18, Me esters**: May cause mild irritation.
- **Fatty acids, C14-18 and C16-18-unsatd., Me esters**: May cause mild irritation.
- **Rape oil, Me ester**: May cause mild irritation.
- **Fatty acids, canola-oil, Me esters**: May cause mild irritation.

**Eyes**: May cause eye irritation.
Section 11. Toxicological information

Carcinogenicity
Not available.

Mutagenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Conclusion/Summary
No additional information.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITGO Biodiesel (B100)</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Methanol</td>
<td>Category 1</td>
<td>Not determined</td>
<td>kidneys and liver</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean Oil, Methyl Ester</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure
Not available.

Potential acute health effects

<table>
<thead>
<tr>
<th>Type</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>Causes eye irritation.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Causes skin irritation. Defatting to the skin.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be fatal if swallowed and enters airways.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

**Skin contact**
Adverse symptoms may include the following:
- irritation
- redness
- dryness
- cracking

**Inhalation**
Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

**Ingestion**
Adverse symptoms may include the following:
- nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

**Short term exposure**
- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Long term exposure**
- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Potential chronic health effects**
Not available.

- **General**: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- **Carcinogenicity**: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- **Mutagenicity**: No known significant effects or critical hazards.
- **Teratogenicity**: No known significant effects or critical hazards.
- **Developmental effects**: No known significant effects or critical hazards.
- **Fertility effects**: No known significant effects or critical hazards.

Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Acute EC50 16.912 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2500000 µg/l Marine water</td>
<td>Crustaceans - Crangon crangon - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 3289 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 290 mg/l Fresh water</td>
<td>Fish - Danio rerio - Egg</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 9.96 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Not available.

**Persistence and degradability**

**Date of issue/Date of revision**: 4/12/2018
Section 12. Ecological information

Conclusion/Summary: Not available.

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Log(P_w)</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty Acids, C14-18 and C16-18- Unsaturated, Methyl Esters Methanol</td>
<td>&gt;6.2</td>
<td>3</td>
<td>low</td>
</tr>
<tr>
<td>Methanol</td>
<td>-0.77</td>
<td>&lt;10</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

| Soil/water partition coefficient (K\(oc\)) | Not available. |

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.
Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ: Not applicable.

SARA 311/312

Classification:
- SKIN IRRITATION - Category 2
- EYE IRRITATION - Category 2B
- CARCINOGENICITY - Category 2
- SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
- ASPIRATION HAZARD - Category 1
- HNOC - Defatting irritant
- HNOC - Static-accumulating flammable liquid

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITGO Biodiesel (B100)</td>
<td>&gt;99</td>
<td>SKIN IRRITATION - Category 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EYE IRRITATION - Category 2B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CARCINOGENICITY - Category 2</td>
</tr>
<tr>
<td>Soybean Oil, Methyl Ester</td>
<td>30 - 60</td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>Methanol</td>
<td>&lt;0.5</td>
<td>HNOC - Defatting irritant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HNOC - Static-accumulating flammable liquid</td>
</tr>
</tbody>
</table>

State regulations

Massachusetts: None of the components are listed.
New York: None of the components are listed.
New Jersey: None of the components are listed.
Pennsylvania: None of the components are listed.

California Prop. 65 Clear and Reasonable Warnings (2018)

WARNING: This product can expose you to chemicals including Diesel exhaust particulate, which is known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol</td>
<td>&lt;0.2</td>
<td>No.</td>
<td>Yes.</td>
<td>-</td>
<td>Yes.</td>
</tr>
<tr>
<td>Diesel exhaust particulate</td>
<td>&lt;3</td>
<td>Yes.</td>
<td>No.</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

International regulations

WHMIS (Canada): Class D-2A: Material causing other toxic effects (Very toxic).

Inventory list

United States: All components are listed or exempted.
Australia: Not determined.
Canada: At least one component is not listed in DSL but all such components are listed in NDSL.

Date of issue/Date of revision: 4/12/2018
Date of previous issue: No previous validation
Version: 1

4/12/2018
11/13
Section 15. Regulatory information

China : Not determined.
Europe : Not determined.
Japan : Japan inventory (ENCS): Not determined.
        Japan inventory (ISHL): Not determined.
Malaysia : Not determined.
New Zealand : Not determined.
Philippines : Not determined.
Republic of Korea : Not determined.
Taiwan : Not determined.
Thailand : Not determined.
Turkey : Not determined.
Viet Nam : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability/Reactivity</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKIN IRRITATION - Category 2</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>EYE IRRITATION - Category 2B</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>CARCINOGENICITY - Category 2</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>ASPIRATION HAZARD - Category 1</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

History

Date of printing : 4/12/2018
Date of issue/Date of revision : 4/12/2018
Date of previous issue : No previous validation
Version : 1

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

References : Not available.
Section 16. Other information

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation