SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Material Name: Biodiesel

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use: Laboratory Use

1.3 Details of the Supplier of the safety data sheet

Manufacturer/Supplier: Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4 Emergency Telephone Number

: Chemtrec- 24 Hour Emergency Response
1(800) 424-9300
International Collect: +1 703 741 5970

SDS Assistance Email: sds@clarktesting.com

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Regulation (EC) No 1272/2008 (CLP)</th>
<th>Hazard classes / Hazard categories</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified, Not classified</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

2.2 Label Elements

Labeling according to Regulation (EC) No 1272/2008
Hazard pictograms N/A : 

CLP Hazard Statements :
No symbol
No signal word

PHYSICAL HAZARDS:
Not classified as a physical hazard according to CLP criteria.

HEALTH HAZARDS:
Not classified as a health hazard under CLP criteria.

ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

2.3 Other Hazards

Health Hazards :
No specific hazards under normal use conditions. This product is not expected to pose an inhalation hazard under conditions of foreseeable use.

Safety Hazards :
This material is a static accumulator. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Environmental Hazards :
Not classified as dangerous for the environment.

Other Information :
The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance
CAS No. : 68937-84-8
EC No : 273-095-1

3.2 Mixtures
Mixture Description : Product is not a mixture according to regulation 1907/2006/EC.

Classification of components according to Regulation (EC) No 1272/2008
### Chemical Name

Fatty Acids, methyl ester (FAME)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty Acids, methyl ester (FAME)</td>
<td>68937-84-8</td>
<td>273-095-1</td>
<td>100</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST-AID MEASURES

#### 4.1 Description of First Aid Measures

**General Information**: Not expected to be a health hazard when used under normal conditions.

**Inhalation**: Remove to fresh air. If symptoms persist, obtain medical advice.

**Skin Contact**: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.

**Eye Contact**: Flush eye with copious quantities of water for at least 15 minutes. If persistent irritation occurs, obtain medical attention.

**Ingestion**: In general, no treatment is necessary unless large quantities are swallowed, however, get medical advice.

**Self-protection of the first aider**: When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury, and surroundings.

**4.2 Most important symptoms and effects, both acute and delayed**: Not applicable.

**4.3 Indication of any immediate medical attention and special treatment needed**: Treat symptomatically.

### SECTION 5. FIRE-FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

**5.1 Extinguishing Media**

<table>
<thead>
<tr>
<th>Media</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foam, water spray or fog</td>
<td>Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. <strong>Unsuitable</strong> Extinguishing: Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.</td>
</tr>
</tbody>
</table>

**5.2 Special hazards arising from the substance or mixture**

A complex mixture of airborne solid and liquid particulates and gases (smoke). Hazardous combustion products may include: Carbon dioxide. Carbon monoxide may be evolved if incomplete combustion occurs.

**5.3 Advice for firefighters**

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

**Additional Advice**

Keep adjacent containers cool by spraying with water. If the fire cannot be extinguished the only course of action is to evacuate immediately. Contain residual material at affected sites to
NFPA Hazard Classification: Health:1 Flammability:1 Instability:0

SECTION 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1 For non-emergency personnel:

- Do not breathe fumes, vapour.
- Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.

6.2 Environmental Precautions

- Prevent from spreading or entering into waterways, sewers, basements or confined areas.

6.3 Methods and Material for Containment and Cleaning Up

- Prevent from spreading by making a barrier with sand, earth or other containment material.
- Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

General Precautions

- Use local exhaust ventilation if there is risk of inhalation of vapors, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

7.1 Precautions for Safe Handling

- Avoid prolonged or repeated contact with skin. Avoid inhaling vapor and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. When using do not eat or drink. Use local
exhaust ventilation if there is risk of inhalation of vapors, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Conditions for safe storage, including any incompatibilities:

- Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Protect from frost. Store separately from oxidizing agents. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapors in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.
- 15 - 25°C / 59 - 77°F

7.3 Specific end use(s):
- Not applicable

Additional Information:
- Not applicable.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

8.1 Control Parameters

Occupational Exposure Limits

Biological Exposure Index (BEI)
No biological limit allocated.

Derived No Effect Levels (DNEL/DMEL) Table:
- Not applicable

PNEC related information:
Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances.

Monitoring Methods:
Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analyzed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
8.2 Exposure Controls

General Information: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Occupational Exposure Controls

Personal Protective Equipment: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardization (CEN) standards.

Eye Protection: Wear safety glasses or full-face shield if splashes are likely to occur. Approved to EU Standard EN166.

Hand Protection: Select gloves tested to a relevant standard (e.g. Europe EN374, US F739). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Respiratory Protection: No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Select a filter suitable for combined particulate/organic gases and vapors [Type A/Type P boiling point > 65°C (149°F)] meeting EN14387 and EN143.

Thermal Hazards: Not applicable.
Environmental Exposure Controls
Environmental exposure control measures: Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapor. Take appropriate measures to fulfil the requirements of relevant environmental protection legislation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: Amber/pale yellow liquid
Odor: Slight
pH: 6-8

Vapour pressure: Not available
Relative Density: 0.88
Water solubility: Insoluble
Solubility in other solvents: Data not available
n-octanol/water partition: Typical 6.2 at 25 °C / 77 °F coefficient (log Pow)

Kinematic viscosity: Typical 3.5 - 5 mm²/s at 40 °C / 104 °F
Vapour density (air=1): Not applicable
Evaporation rate (nBuAc=1): Data not available
Flammability: Not combustible
Flash Point: 130°C (54.4°F)

9.1 Information on basic physical and chemical properties

Electrical conductivity:

Low conductivity: < 100 pS/m. The conductivity of this material makes it a static accumulator. A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m. Whether a liquid is nonconductive or semi-conductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.

Other Information: Not applicable.
SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: Reacts with strong oxidizing agents.

10.2 Chemical stability: Stable under normal conditions of use.

10.3 Possibility of Hazardous Reactions:

10.4 Conditions to Avoid: Extremes of temperature and direct sunlight.

10.5 Incompatible Materials: Strong oxidizing agents. Strong bases.

10.6 Hazardous Decomposition Products: Hazardous decomposition products are not expected to form during normal storage. Combustion produces carbon monoxide, carbon dioxide along with thick smoke.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects

Basis for Assessment: Information given is based on product data, a knowledge of the components and the toxicology of similar products.

Acute Oral Toxicity: Low toxicity: LD50 > 5000 mg/kg

Acute Dermal Toxicity: Expected to be of low toxicity: LD50 > 5000 mg/kg

Acute Inhalation Toxicity: Expected to be of low toxicity if inhaled.

Skin corrosion/irritation: Expected to be non-irritating to skin.

Serious eye damage/irritation: Expected to be non-irritating to eyes.

Respiratory Irritation: Not expected to be a respiratory irritant.

Respiratory or skin sensitization: Not expected to be a sensitizer.

Aspiration Hazard: Not considered an aspiration hazard.

Germ cell mutagenicity: Not expected to be mutagenic.

Carcinogenicity: Not expected to be carcinogenic.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean Oil, Me Ester</td>
<td>GHS / CLP: No carcinogenicity classification</td>
</tr>
<tr>
<td>Fatty Acids, soya, methyl</td>
<td>GHS / CLP: No carcinogenicity classification</td>
</tr>
</tbody>
</table>

Reproductive and Developmental Toxicity: Not expected to impair fertility. Not expected to be a developmental toxicant.

Summary on evaluation of the CMR properties

Carcinogenicity: This product does not meet the criteria for classification in categories 1A/1B.

Mutagenicity: This product does not meet the criteria for classification in categories 1A/1B.

Reproductive Toxicity (fertility): This product does not meet the criteria for classification in categories 1A/1B.

Specific target organ toxicity - single exposure: Not expected to be a hazard.

Specific target organ toxicity - repeated exposure: Not expected to be a hazard.

Additional Information: Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12. ECOLOGICAL INFORMATION
Basis for Assessment: Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

12.1 Toxicity

Acute Toxicity: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract.

Fish: Practically non toxic: LL/EL/IL50 > 100 mg/l
Aquatic crustacea: Practically non toxic: LL/EL/IL50 > 100 mg/l
Algae/aquatic plants: Practically non toxic: LL/EL/IL50 > 100 mg/l
Microorganisms: Practically non toxic: LL/EL/IL50 > 100 mg/l

Chronic Toxicity
Fish: Data not available
Aquatic crustacea: Data not available

12.2 Persistence and degradability: Readily biodegradable.

12.3 Bio accumulative Potential: Does not have the potential to bioaccumulate significantly.

12.4 Mobility in Soil: If product enters soil, one or more constituents will be highly mobile and may contaminate groundwater.

12.5 Result of PBT and vPvB assessment: The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.6 Other Adverse Effects: Will exert oxygen demand when significant quantities enter watercourses and may cause damage to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Material Disposal: Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Local Legislation: EU Waste Disposal Code (EWC): 06 10 99 wastes not otherwise specified. Classification of waste is always the responsibility of the end user.

SECTION 14. TRANSPORT INFORMATION

Land transport (ADR/RID):
ADR
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.
RID
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

Inland waterways transport (ADN):
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

Sea transport (IMDG Code):
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

Air transport (IATA):
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

SECTION 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture

Other regulatory Information

15.2 Chemical Safety Assessment: A Chemical Safety Assessment was performed for this substance.

SECTION 16. OTHER INFORMATION

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS. The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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