

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Material Name	: B100 Biodiesel
Other Names	: B100, Fatty Acid Methyl Esters (FAME)
Recommended use / Restrictions of use	: Fuel for diesel engines, Additive for diesel fuel
Supplier	: Z Energy Limited 3 Queens Wharf Wellington New Zealand
Telephone	: +64 4 472 0080
Fax	: +64 4 498 0260
Local Contact	
Telephone	: 0800 474 355
Fax	: 0800 100 536
Email	: general@z.co.nz
Web location	: http://z.co.nz/about-z/faqs-and-support/products/fuel-safety-data-sheets/
Emergency Telephone Number	: 0800 243 622 (24 hours) / (International) +64 4 917 9888

2. HAZARDS IDENTIFICATION

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

Not classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) EPA Notice 2017.

Not classified as Dangerous Goods according to NZS 5433; 2012.

Hazardous Substances Classification	: Non-Hazardous
Safety Hazards	: May combust at high temperatures. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.
GHS Classification	: Not applicable
Signal Word	: None
GHS Hazard Statements	: Not applicable.
GHS Precautionary Statements	: Not applicable.

HUMAN HEALTH HAZARDS

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May be harmful if swallowed. May be irritating to skin on prolonged contact.

SAFETY HAZARDS

Liquid may combust at high temperatures. Liquid can ignite leading to a flash fire, or an explosion in a confined space. May ignite on surfaces at temperatures above auto-ignition temperature. Vapour in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature, where vapour concentrations are within the flammability range.

ENVIRONMENTAL HAZARDS

No data available.

OTHER INFORMATION

This product is intended for use as a fuel in a closed system. If used for any other purpose, in open systems or as a spray, ignition and exposure risks will increase and a careful risk assessment should be carried out.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Information on Composition : Diesel fuel produced from biological sources.

100% Non-hazardous Ingredients (GHS).

Chemical Identity	CAS	Identification number	Conc.[%]
Alkyl C14 – C24 Methyl Esters	67784-80-9	267-055-2	100 %

4. FIRST AID MEASURES

- Inhalation** : If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms persist seek medical attention.
- Skin Contact** : Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. If symptoms develop, seek medical attention.
- Eye Contact** : If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing for several minutes until all contaminants are washed out completely. Seek medical attention.

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- Ingestion** : Do NOT induce vomiting. Wash out mouth and lips with water. Where vomiting occurs naturally have affected person place head below hip level in order to reduce risk of aspiration. Seek immediate medical attention.
- First Aid Facilities** : An eye wash facility, and a general washing facility.
- Notes to Physician** : Treat symptomatically.
Other Information : For advice in an emergency, contact a Poisons Information Centre (Phone New Zealand 0800 764 766) or a doctor at once.

5. FIRE FIGHTING MEASURES

- Specific Hazards** : The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and may be reignited on surface water. Flammable vapours may be present even at temperatures below the flash point.
- Hazards from Combustion Products** : Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.
- Extinguishing Media** : Foam, fine water spray and dry chemical powder. Carbon dioxide, Clean Agents (e.g. Inergen, Argonite etc.), sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water jet.
- Protective Equipment for Firefighters** : Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.
- Additional Advice** : Keep adjacent drums and tanks cool by spraying with water from a safe location. If possible remove them from the danger zone. If adequate cooling cannot be achieved, the area needs to be evacuated, and further fire fighting and cooling attempts should be carried out from a safe location.
- Hazchem Code** : Not applicable

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6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

- Personal precautions, protective equipment and emergency procedures** : Remove all possible sources of ignition in the surrounding area. Contaminated clothing may be a fire hazard and therefore should be soaked with water before being removed. Ventilate contaminated area thoroughly. Do not breathe fumes, vapour. Avoid contact with skin, eyes, clothing. Wear chemical resistant knee length safety boots and PVC jacket and trousers. Wear safety glasses or full face shield if splashes are likely to occur. Wear appropriate personal protective equipment and clothing to prevent exposure. Stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place inert absorbent, non-combustible material onto spillage. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. Cloth, paper and other materials that are used to absorb spills present a fire hazard. Avoid their accumulation by disposing of them safely and immediately. If contamination of sewers or waterways occurs inform the local water authorities and EPA in accordance with local regulations.
- Environmental Precautions** : Prevent from spreading or entering into drains and surface waters (e.g. lakes, ponds, ditches, rivers and streams) by using sand, earth, or other appropriate non-combustible barriers. Inform local authorities if impacts cannot be prevented.
- Methods and material for containment and clean up (Small Spillages)** : To minimize soil and groundwater contamination, absorb liquid with sand earth or other recommended adsorbent material, as soon as safe to do so after the spill. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations. Do not dispose into an interceptor.
- Methods and material for containment and clean up (Large Spillages)** : Prevent from spreading by making a barrier with sand, earth or other containment material. Dispose of as for small spills.
Maritime Spillages:
Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

7. HANDLING AND STORAGE

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- Precautions for safe handling** : Liquid may combust at high temperatures. Avoid naked flames. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Avoid prolonged or repeated contact with skin. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Prevent spillages. Never siphon by mouth. When using do not eat, drink or smoke. Avoid contact with skin, eyes and respiratory system. If using pressurised equipment, take extra care to avoid injection under the skin. Only use in well-ventilated areas. Take precautionary measures against static discharges. Ensure all equipment is properly bonded. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Cloth, paper and other materials that are used to absorb spills present a fire hazard. Avoid their accumulation by disposing of them safely and immediately. In addition to any specific recommendations given for controls of risks to health, safety and the environment, an assessment of risks must be made to help determine controls appropriate to local circumstances.
- Conditions for safe storage** : This product must never be stored in buildings occupied by people. Drums and small containers should be stored in well-ventilated areas or stores. Keep container tightly closed in a dry, well ventilated place away from direct sunlight and other sources of heat or ignition. Keep in a bunded area with a sealed (low permeability) floor, to provide containment against spillage. Stack drums to a height not exceeding 3 metres without the use of racking. Seek specialist advice for the design, construction and operation of bulk storage facilities.
- Product transfer** : Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

The following exposure standards have been established for the product by WorkSafe NZ, last updated in 2019.

Material	Source	Type	ppm	mg/m ³	Notation
Fatty Acid, Methyl Ester		TWA	-	-	ACGIH
		STEL	-	-	ACGIH

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Additional Information : TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.
STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

Biological Limit Value (BLV) : Data not available.

Appropriate Engineering Controls : Provide sufficient ventilation to keep airborne levels below the exposure limits. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flameproof exhaust ventilation system is required. Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1:2009: Classification of hazardous areas - Examples of area classification - General, for further information concerning ventilation requirements.

Individual protection measures

Respiratory Protection : If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable organic vapour filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Hand Protection : Wear gloves of impervious material e.g. nitrile or neoprene rubber gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance. The use of barrier cream is recommended.

Eye Protection : Chemical safety glasses or face shield recommended as appropriate. Final choice of appropriate eye/face protection will vary according to individual circumstances including methods of handling or engineering controls as determined by appropriate risk assessments. Eye protection should conform to Australian/New Zealand Standard AS/NZS 1337- Eye Protectors for Industrial Applications.

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Protective Clothing : Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled. Industrial clothing should conform to the specifications detailed in AS/NZS 2919: Industrial clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Pale yellow clear liquid.
Odour : Characteristic mild odour.
Odour threshold : Not determined
pH : Not determined
Boiling point : >200°C
Melting / freezing point : Not available
Flash point : >120°C (Closed Cup)
Flammability limits : Lower: Not available
Upper: Not available
Auto-ignition temperature : >200°C
Decomposition temp. : Not determined
Flammability (solid, gas) : Non-flammable.
Vapour pressure : <2 mmHg at 25°C.
Specific gravity : 0.88
Water solubility : Insoluble
Viscosity, kinematic : 3.5-5.0 cSt at 25°C.
Vapour density (air=1) : >1
Evaporation Rate : <1 (n-Butyl acetate=1)
Volatiles : <2% v/v
Coefficient Water/Oil Distr. : Not available

10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions of storage and handling.
Conditions to Avoid : Heat, open flames, sparks and other sources of ignition.
Incompatible materials : Strong oxidizing agents.
Hazardous Decomposition Products : Thermal decomposition may result in the release of toxic and/or irritating fumes including carbon monoxide and carbon dioxide.
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Hazardous Polymerization : Will not occur

Hazardous Reactions

: May react with strong oxidising agents.
Biodiesel soaked rags or spill absorbents can cause spontaneous combustion if not handled properly – store in approved safety containers and dispose of correctly (oil soaked rags may be washed with soap and water and allowed to dry in a well ventilated area).

11. TOXICOLOGICAL INFORMATION

Basis for Assessment : Full toxicological studies have not been carried out on this product. Information given is based on knowledge of the components and the toxicology of similar products.

Acute oral toxicity : No data available.

Acute dermal toxicity : No data available.

Acute inhalation toxicity : No data available.

Mutagenicity : Not a mutagenic substance

Carcinogenicity : Not a carcinogenic substance.

Reproductive and Developmental Toxicity : Not a developmental toxicant.

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- Human Effects** : Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis and may make the skin more susceptible to irritation and penetration by other materials. Under conditions of poor personal hygiene, excessive exposure may lead to irritation, oil acne and folliculitis and development of warty growths which may subsequently become malignant.
- Other Information** : High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.
- Eye** : May cause irritation in contact with the eyes, which can result in redness, stinging and lachrymation.
- Skin** : May cause irritation to the skin resulting in itching and redness of the skin. Poisoning may occur from prolonged or massive skin contact.
- Inhalation** : In an enclosed area, the vapours may cause headache, nausea with vomiting and dizziness.
NOTE: Below 40 °C the vapour pressure is too low to cause any health hazard. High concentrations will build up in poorly ventilated areas and at higher temperatures.
- Ingestion** : If swallowed, it may cause irritation to the gastrointestinal system. Symptoms may include abdominal pain, nausea, vomiting, diarrhoea or depression of the central nervous system including nausea and dizziness. Small amounts of liquid aspirated into the respiratory system during ingestion or vomiting may lead to aspiration into the lungs with a possibility of chemical pneumonia or lung damage.
- Chronic Effects** : Prolonged and repeated exposure through inhalation or swallowing of this material can result in harmful effects to health. Prolonged or repeated skin contact may also result in skin dryness and cracking, skin irritation leading to dermatitis.

12. ECOLOGICAL INFORMATION

- Mobility** : Floats on water. Large volumes may penetrate soil and could contaminate groundwater.
- Persistence/
degradability** : Biodegradable. May persist under anaerobic conditions. Oxidises rapidly by photochemical reactions in air.

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Bioaccumulative potential	: No data available.
Exotoxicity	: No data available.
Environmental Protection	: Do not discharge this material into drains, sewers and waterways.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations	: Waste arising from a spillage or tank cleaning should be disposed of in accordance with applicable local and national regulations. Do not dispose into the environment, in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination. Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near containers. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.
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14. TRANSPORT INFORMATION

Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2012

Not classified as Dangerous Goods for transport according to the NZS 5433:2012 Transport of Dangerous Goods on Land.

IMDG

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

IATA

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

15. REGULATORY INFORMATION

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

Not classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) EPA Notice 2017.

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NZIoC All components of this product are listed on the New Zealand Inventory of Chemicals (NZIoC).

AICS All components of this product are listed on the Australian Inventory of Chemical Substances (AICS).

Restrictions

This product must not be used in applications other than those recommended without first seeking the advice of the supplier.

16. OTHER INFORMATION

SDS Version Number	: 2.0
SDS Effective Date	: 01 September 2020
SDS Regulation	: The content and format of this SDS is in accordance with HSNO Approved Code of Practice (No. HSNO CoP 8-1 09-06): Preparation of Safety Data Sheets.
Uses and Restrictions	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product