



MATERIAL SAFETY DATA SHEET

Revision date: 06/15/2011

Revision number: 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name LDF CAN

Contact Manufacturer Novozymes Biologicals Inc.
5400 Corporate Circle
Salem, VA, USA 24153

Information Telephone Number 1-540-389-9361

Emergency Telephone Number 1-800-424-9300 (Chemtrec) 24 hours every day

| | |
|---------------|---|
| Health Hazard | 1 |
| Fire Hazard | 0 |
| Reactivity | 0 |

2. HAZARDS IDENTIFICATION

CAUTION

Emergency Overview

Contact may cause eye and skin irritation

Appearance Blue

Physical State Liquid

Odor Slight fermentation odor

Potential Health Effects

Principle Routes of Exposure Eye contact, Skin contact, Ingestion

Acute Effects

Eyes

May cause slight irritation

Skin

Substance may cause slight skin irritation

Inhalation

May cause irritation of respiratory tract

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea

Chronic Effects

Chronic Toxicity No information available

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available

Potential Environmental Effects There is no known ecological information for this product
See Section 12 for additional Ecological information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components

| Chemical Name | CAS-No | Weight % |
|--------------------------|----------------|----------|
| Sodium Nitrate | 7631-99-4 | 10-15% |
| EDTA | 64-02-8 | <0.5% |
| Viable Bacterial Culture | CAS-No | <0.5% |
| Viable Bacteria Culture | Not Applicable | <0.5% |
| Viable Bacteria Culture | Not Applicable | <0.5% |
| Bacillus megaterium | CAS-No | <0.5% |
| Viable Bacteria Culture | Not Applicable | < 0.1% |

Ingredients not listed are either non-hazardous or under reportable concentrations

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| Eye Contact | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician |
| Skin Contact | Wash off immediately with soap and plenty of water |
| Inhalation | Move to fresh air |
| Ingestion | Clean mouth with water and afterwards drink plenty of water |
| Notes to Physician | Treat symptomatically |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable Properties | Slightly flammable according to HMIS criteria |
| Suitable Extinguishing Media | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| Unsuitable Extinguishing Media | None |
| Hazardous Combustion Products | None |
| Specific Hazards Arising from the Chemical | May cause allergic respiratory reaction. |
| Protective Equipment and Precautions for Firefighters | Self-contained breathing apparatus and standard turn-out apparel |

6. ACCIDENTAL RELEASE MEASURES

| | |
|--|---|
| Personal Precautions | For personal protection see section 8 |
| Environmental Precautions | Spilled preparation should be removed immediately to avoid formation of dust from dried preparation. Take up by mechanical means preferably by a vacuum cleaner equipped with a high efficiency filter. Flush remainder carefully with plenty of water. Avoid splashing and high pressure washing (avoid formation of aerosols). Ensure sufficient ventilation. Wash contaminated clothing. |
| Methods for cleaning up | Avoid formation of dust and aerosols Spilled preparation should be removed immediately to avoid formation of dust from dried preparation. Take up by mechanical means preferably by a vacuum cleaner equipped with a HEPA (High Efficiency Particulate Air) filter. Flush remainder carefully with plenty of water. Avoid splashing, high pressure washing or compressed air cleaning to avoid formation of aerosols. Ensure sufficient ventilation. Wash contaminated clothing. |
| For personal protection see section 8 | |

7. HANDLING AND STORAGE

| | |
|-------------------------------|---|
| Handling | Avoid formation of dust and aerosols Ensure adequate ventilation |
| General Precautions | The Substance should be handled under conditions of good industrial hygiene and in conformity with any local regulations in order to avoid unnecessary exposure.. |
| Storage | Keep tightly closed in a dry and cool place. |
| Temperature | Keep in a dry, cool and well-ventilated place. |
| Storage Conditions | In unbroken packaging - dry and protect from the sun. The product has been formulated for optimal stability. Extended storage or adverse conditions such as higher temperatures or higher humidity may lead to a higher dosage requirement. |
| Conditions To Avoid | Avoid Temperatures above 45 C to preserve biological stability. Avoid freezing temperatures. Strong Acids or alkali compounds may inactivate biological cultures. Avoid strong oxidizing agents. |
| Incompatible Materials | Strong acids or alkali compounds may inactivate biological cultures |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls

| | |
|-----------------------------|---|
| Engineering Controls | Ensure adequate ventilation, especially in confined areas Maintain good conditions of industrial hygiene. Some processes may require enclosures, local exhaust ventilation, or other engineering controls to control airborne levels. Additional handling and healthy/safety information is available upon request |
|-----------------------------|---|

Personal Protective Equipment

| | |
|--|---|
| Respiratory Protection | In case of insufficient ventilation wear suitable respiratory equipment that meets HEPA/P100 specifications |
| Eye Protection | Safety glasses with side-shields |
| Skin Protection | Long sleeved clothing |
| Hand Protection | Protective gloves |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practices |
| Environmental exposure controls | Local authorities should be advised if significant spillages cannot be contained |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|--------------------------|
| Appearance | Blue |
| Physical State | Liquid |
| Odor | Slight fermentation odor |
| pH | 8.1-8.5 |
| Boiling Point/Range | No information available |
| Melting Point/Range | No information available |
| Flash Point | No information available |
| Flammability (solid, gas) | No information available |
| Explosive Properties | No information available |
| Oxidizing Properties | No information available |
| Vapor Pressure | No information available |
| Relative density | No data available |
| Solubility | No information available |
| Partition Coefficient (n-octanol/water) | No information available |

The physical data presented above are typical values and should not be construed as a specification

10. STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| Chemical stability | Stable under recommended storage conditions |
| Conditions to Avoid | Stable under normal conditions Excessive temperature variations below 32F or above 155F |
| Materials to avoid | None |
| Hazardous Decomposition Products | None |
| Possibility of Hazardous Reactions | None |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|--|----------------|
| Ingestion, LD50 Rat Oral (mg/kg): | Not Determined |
| Inhalation, LC50 Rat inhalation (mg/l/4hr) | Not Determined |
| Skin, LD50 Rat Dermal (mg/kg) | Not Determined |
| Eye Irritation | Not Determined |

Chronic Toxicity

| | |
|---------------|---|
| Sensitization | According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified |
|---------------|---|

This product is formulated using a range of microorganisms specially selected from the natural environment

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product is not expected to pose an environmental hazard. No Toxicity Data is available specifically for soil organisms, plants and terrestrial animals.

| | |
|----------------------------------|--|
| Environmental Effects | The data available do not support any environmental hazard |
| Persistence/Degradability | The organic components of the product are biodegradable. |
| Bioaccumulative Potential | According to experience not expected |
| Mobility | Not available |
| Other adverse effects | No known effect |

13. DISPOSAL CONSIDERATIONS

| | |
|-------------------------------|--|
| Waste Disposal Method | Dispose of contents/container in accordance with local regulation. |
| Contaminated Packaging | Dispose of wastes in an approved waste disposal facility. |

14. TRANSPORT INFORMATION

| | |
|------------------------------|---------------------|
| Transport Regulations | Not dangerous goods |
| IMDG/IMO | Not regulated |
| RID | Not regulated |
| ADR | Not regulated |
| ICAO | Not regulated |
| IATA | Not regulated |
| DOT | Not regulated |

15. REGULATORY INFORMATION

International Inventories

| | |
|----------|-----------------|
| TSCA | Complies |
| PICCS | Complies |
| KECL | Does not Comply |
| ENCS | Complies |
| CHINA | Complies |
| AICS | Complies |
| DSL/NDSL | Complies |

USA, Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and 40 CFR Part 372.

SARA 311/312 Hazardous Categorization

| | |
|-----------------------------------|----|
| Acute Health Hazard | No |
| Chronic Health Hazard | No |
| Fire Hazard | No |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | No |

USA, State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Canada

WHMIS Hazard Class

Controlled product hazard class D2 A (respiratory sensitizer)

WHMIS Statement

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

16. OTHER INFORMATION

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text. Furthermore, as the conditions of use are beyond the control of Novozymes, it is the responsibility of the customer to determine the conditions of safe use of these products.



Report version

1 / ANSI / English

End of Material Safety Data Sheet