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## SAFETY DATA SHEET

In accordance with Annex II to Regulation (EC) 1907/2006  
as amended by Regulation 453/2010

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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

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- 1.1. Product Identifier:** ALTERNAFUEL® CMAX™  
**Product Code:** 346  
**REACH Pre-registration:** EF492986-24  
**CLP Notification No.:** 02-2119751588-25-0000
- 1.2. Relevant identified uses of the substance or mixture and uses advised against:** used as an industrial processing aid for Textiles, Biofuels, or Pulp and Paper.
- 1.3. Details of the supplier of the safety data sheet**
- Name of supplier/manufacturer:  
Dyadic International (USA), Inc.  
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Jupiter, Florida 33477  
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- 1.4. Emergency telephone number**  
CHEMTREC: (800) 424-9300 [in US]  
(703) 527-3887 (collect) [International]

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## SECTION 2: HAZARDS IDENTIFICATION

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### 2.1. Classification of the substance

Category 1: Respiratory sensitizer and irritant

### 2.2. Label elements

**According to Regulation (EC) 1272/2008 (CLP):**

Hazard statements: [Full text available in Section 16]

H334/Danger

Pictograms: GHS08



Precautionary statements:

P261

P285

P304 + P341

P342 + P311

P501

**According to Directive 67/548/EEC (DSD):**

Risk Phrases:

R42/Xn/Harmful

Pictograms:



Safety Phrases:

S23

### 2.3. Other hazards

No other hazards. Not classified as a PBT or vPvB.

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## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

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### 3.1 Substances

The substance is a carbohydrase enzyme:

Component	CAS No.	EINECS/ ELINCS	IUB No.	Amount
Cellulase	9012-54-8	232-734-4	3.2.1.4	4 %

Other Components:

Remaining components of this product (water/inerts) are proprietary, non-hazardous and/or are present at concentrations below reportable limits.

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## SECTION 4: FIRST AID MEASURES

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### 4.1. Description of first aid measures

- Inhalation  
Remove from contaminated area to fresh air. Seek medical attention if allergic response exhibited.
- Skin  
Wash skin with soap and water. Remove contaminated clothes and wash.
- Eye  
Flush eyes with low pressure water for at least 15 minutes. Do not attempt to neutralize chemically. Seek medical attention immediately if irritation persists.
- Ingestion  
Give large quantities of water. If unconscious or in convulsion, take immediately to hospital or physician.

### 4.2. Most important symptoms and effects, both acute and delayed

The substance is a respiratory sensitizer and overexposure by inhalation may cause sensitization and allergic responses including breathing difficulties in hypersensitive individuals.

### 4.3. Indication of any immediate medical attention and special treatment needed

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms, call a POISON CENTER or doctor/physician.

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## SECTION 5: FIRE-FIGHTING MEASURES

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### 5.1. Extinguishing media

Carbon dioxide, foam and/or ABC dry powder.

### 5.2. Special hazards arising from the substance

Oxides of carbon, oxides of nitrogen are hazardous decomposition materials under fire conditions.

### 5.3. Advice for fire-fighters

Fire-fighters should wear NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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### 6.1. Personal precautions, protective equipment and emergency procedures

Contact emergency personnel and keep unnecessary personnel away. Use suitable protective equipment (Section 8). Provide sufficient ventilation and wash or dispose of contaminated clothing.

### 6.2. Environmental precautions

Removal by mechanical means (i.e. vacuuming with HEPA filters) is preferred. Solid may be placed into approved containers for disposal. Dilute remainder with plenty of water avoiding the formation of aerosols and flush to an approved drain.

### 6.3. **Methods and material for containment and cleaning up**

Removal by mechanical means (i.e. vacuuming with HEPA filters) is preferred. Solid may be placed into approved containers for disposal. Dilute remainder with plenty of water avoiding the formation of aerosols and flush to an approved drain.

Contaminated material is to be disposed of in accordance with State, local and Federal Regulations. Compliance includes, but it not restricted to, the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, and complies with all applicable EU, national and local guidelines.

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## SECTION 7: HANDLING AND STORAGE

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### 7.1. **Precautions for safe handling**

Segregate from acids, peroxides and all combustible organic or easily oxidizable materials. Keep from freezing. Protect against physical damage. Keep away from heat and flame.

### 7.2. **Conditions for safe storage, including any incompatibilities**

Keep away from heat and flame. Store in a cool, dry area in closed containers. Avoid accidental discharge into sewers and natural waters. Keep in original container. Empty container retains vapor and product residue. Observe all labelled safeguards until cleaned, reconditioned or destroyed.

### 7.3. **Specific end use(s)**

Not specified.

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## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

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### 8.1 **Control parameters**

No national limit values established for cellulase. No OSHA PEL, TWA or STELs established. Relevant DNELs and PNECs have not yet been determined. Comply with all EU, national and local guidelines.

### 8.2 **Exposure controls**

#### 8.2.1 **Appropriate engineering controls**

Efficient exhaust ventilation should always be provided to draw fumes and vapors away from workers to prevent routine inhalation. Ventilation should be adequate to maintain the ambient workplace atmosphere below the TLV of any items identified under section 2.

#### 8.2.2 **Individual protection measures, such as personal protective equipment**

(a) Eye/face protection: Goggles / Safety Glasses / Mono-goggles (EN 166)

(b) Skin/hand protection: Impervious gloves, such as Neoprene or polyvinyl alcohol, should be worn when handling chemicals. (EN 374). Long Sleeve shirt / Rubber apron / Safety shoes

(c) Respiratory protection: Normal. Wear a NIOSH/MSHA approved respirator whenever exposure to fumes or vapors exceeds the TLV of any items identified under hazardous components section. (EN 143)

(d) Thermal hazards: not applicable

#### 8.2.3 **Environmental exposure controls**

Avoid accidental discharge into sewers and natural waters. Spilled material should be removed immediately to avoid the formation of aerosols.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1. Information on basic physical and chemical properties

- (a) Appearance: Medium to dark amber; liquid
- (b) Odour: Sweet mild fermentation odor
- (c) Odour threshold: not established
- (d) pH:  $6.5 \pm 1.0$
- (e) Melting point / freezing point: pour point not established
- (f) Initial boiling point and boiling range: data not available
- (g) Flash point: data not available
- (h) Evaporation rate: data not available
- (i) Flammability (solid, gas): data not available
- (j) Upper/lower flammability or explosive limits: data not available
- (k) Vapor pressure: data not available
- (l) Vapor density: data not available
- (m) Relative density: 1.1 - 1.3
- (n) Solubility(ies): completely miscible in water; soluble in other solvents
- (o) Partition coefficient: n-octanol/water; data not available
- (p) Auto-ignition temperature: data not available
- (q) Decomposition temperature: data not available
- (r) Viscosity: data not available
- (s) Explosive properties: data not available
- (t) Oxidising properties: data not available

### 9.2. Other information

No additional information

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## SECTION 10: STABILITY AND REACTIVITY

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### 10.1. Reactivity

None identified

### 10.2. Chemical stability

Stable

### 10.3. Possibility of hazardous reactions

None identified; hazardous polymerization does not occur

### 10.4. Conditions to avoid

None known

### 10.5. Incompatible materials

None known

### 10.6. Hazardous decomposition products

None

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### 11.1. Information on toxicological effects

- (a) Acute toxicity: ingestion of this material is not known to result in significant adverse effects. No specific data available.
- (b) Skin corrosion/irritation: this material is not known to be a skin irritant, but it is recommended that prolonged contact with the skin be avoided
- (c) Serious eye damage/irritation: overexposure of the eye is characterized by irritation
- (d) Respiratory or skin sensitization, respiratory sensitizer: overexposure by inhalation may cause sensitization and allergic response in hypersensitive individuals; not a skin sensitizer
- (e) Germ cell mutagenicity: no data available
- (f) Carcinogenicity: this product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be “probable” or “suspected” human carcinogens; no additional test data found for product
- (g) Reproductive toxicity: no data available
- (h) STOT-single exposure: no data available
- (i) STOT-repeated exposure: no data available
- (j) Aspiration hazard: see respiratory sensitization

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## SECTION 12: ECOLOGICAL INFORMATION

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### 12.1 Toxicity

No specific data available, however, enzymes are not known to be significantly ecotoxic.

### 12.2. Persistence and degradability

No specific data available, however, the substance is miscible in water and is not likely to be persistent. In addition, the substance is an enzyme and enzymes are known to be fully biodegradable.

### 12.3. Bioaccumulative potential

No specific data available, however, the substance is miscible in water and is not likely to be bioaccumulative. Also, enzymes are known to be fully biodegradable and therefore would not bioaccumulate.

### 12.4. Mobility in soil

No data available

### 12.5. Results of PBT and vPvB assessment

No specific data available, however, the substance is miscible in water and is not likely to be persistent or bioaccumulative. In addition, the substance is an enzyme and enzymes are known to be fully biodegradable and not bioaccumulative. The substance does not meet the criteria for characterization as either a PBT or vPvB.

### 12.6. Other adverse effects

No other adverse effects known.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

Waste Disposal Method: Chemical additions, processing or otherwise altering this material may make waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from Federal laws and regulations. Consult any regional local authority requirements regarding the proper disposal of this material.

Hazardous Waste: To present knowledge of the supplier, this product is not regarded as hazardous waste as defined by EU Directive 91/689/EC.

Container Handling and Disposal: Rinse containers before disposal.

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## SECTION 14: TRANSPORT INFORMATION

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### 14.1. UN number

None assigned. The substance is not classified as hazardous for transport (UN, IMO, IATA, DOT, etc.)

### 14.2. UN proper shipping name

Not applicable

### 14.3. Transport hazard class(es)

Not applicable

### 14.4. Packing group

Not applicable

### 14.5. Environmental hazards

The substance is not classified as hazardous for transport (UN, IMO, IATA, DOT, etc.)

### 14.6. Special precautions for user

The substance is not classified as hazardous for transport (UN, IMO, IATA, DOT, etc.)

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

The substance is not classified as hazardous for transport (UN, IMO, IATA, DOT, etc.). See sections 7 and 8 for more handling information.

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## SECTION 15: REGULATORY INFORMATION

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### 15.1. Safety, health and environmental regulations/legislation specific for the substance

Classification and labelling have been performed according to EU directives 67/548/EEC, 1999/45/EC, including amendments and the intended use – textile, biofuel, or pulp and paper industrial processing aid.

National Paint and Coatings Hazardous Materials Identification System (“HMIS”) Hazard Ratings:

Health:	1
Flammability:	0
Reactivity:	0
Personal Protection:	B

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

## 15.2. Chemical Safety Assessment

The relevant information in the chemical safety assessment is not yet available.

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## SECTION 16: OTHER INFORMATION

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H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261: Avoid breathing vapor or dust.

P285: In case of inadequate ventilation wear respiratory protection.

P304 + P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P501: Disposal of contents/container in accordance national and international regulations.

R42: May cause sensitisation by inhalation.

S23: Do not breathe vapor or dust.

Xn/Harmful: Repeated inhalation of enzyme aerosol may cause sensitization and will cause allergic type reactions in sensitized individuals. Prolonged skin contact may cause irritation. Do not breathe dust.

Disclaimer: The information and recommendations in this data sheet are believed to be correct and reliable. However, the data offered for consideration and verification by the user and Dyadic International, Inc. offers no guarantee, warranty or representation as to the accuracy or completeness of the data.