Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: Yeast Nitrogen Base without amino acids, Without amino acids
Product Number: Y0626
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-8832
Emergency Phone: 314-776-6555
Fax: 800-325-5062

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
<th>EC no</th>
<th>Annex I Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAST NITROGEN BASE WITHOUT AMINO ACIDS</td>
<td>None</td>
<td>No</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS #</th>
<th>Percent</th>
<th>SARA 313</th>
<th>EC no</th>
<th>Annex I Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONIUM SULFATE</td>
<td>7783-20-2</td>
<td>&gt; 72.000 %</td>
<td>No</td>
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<td></td>
</tr>
<tr>
<td>POTASSIUM PHOSPHATE, MONOBASIC</td>
<td>7778-77-0</td>
<td>&lt; 76.000 %</td>
<td>No</td>
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<tr>
<td>MAGNESIUM SULFATE ANHYDROUS</td>
<td>7487-88-9</td>
<td>&lt; 15.000 %</td>
<td>No</td>
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<tr>
<td>CALCIUM CHLORIDE</td>
<td>10043-22-4</td>
<td>&lt; 10,000 %</td>
<td>No</td>
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</tr>
<tr>
<td>SODIUM CHLORIDE</td>
<td>7647-14-5</td>
<td>&lt; 5.000 %</td>
<td>No</td>
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<tr>
<td>AMMONIUM CHLORIDE</td>
<td>67-03-8</td>
<td>&lt; 1.000 %</td>
<td>No</td>
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<tr>
<td>BORIC ACID</td>
<td>10043-35-3</td>
<td>&lt; 0.100 %</td>
<td>No</td>
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<tr>
<td>ZINC SULFATE MONOHYDRATE</td>
<td>10034-36-5</td>
<td>&lt; 0.100 %</td>
<td>No</td>
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<tr>
<td>(+)-PANTOTHENIC ACID, CALCIUM SALT</td>
<td>7446-10-7</td>
<td>&lt; 0.100 %</td>
<td>Yes</td>
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<tr>
<td>PYRIDOXINE HYDROCHLORIDE</td>
<td>58-58-0</td>
<td>&lt; 0.100 %</td>
<td>No</td>
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<td>RIBOFLAVIN</td>
<td>80-08-5</td>
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<td>MOLYBDENUM SODIUM HYDROXIDE</td>
<td>10102-40-7</td>
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<tr>
<td>COPPER SULFATE</td>
<td>7758-88-7</td>
<td>&lt; 0.100 %</td>
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<tr>
<td>NICOTINIC ACID</td>
<td>59-67-8</td>
<td>&lt; 0.100 %</td>
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<tr>
<td>FERRIC CHLORIDE ANHYDROUS</td>
<td>7705-08-0</td>
<td>&lt; 0.100 %</td>
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</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview:

Immediate
Intratrating to eyes. Respiratory system and skin. Target organ(s): Central nervous system. G.I. System.

HIMS Rating
Health: 2
Flammability: 0
Reactivity: 0

NFPA Rating
Health: 2
Flammability: 0
Reactivity: 0

Additional chronic hazards present. For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure:
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure:
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure:
In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure:
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media:
Suitable: Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Fighting:
Protective Equipment:
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s):
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up:
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling:
User Exposure:
Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment
Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand
Compatible chemical-resistant gloves.

Eye
Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance
Physical State
Solid

Molecular Weight: N/A

pH
4.9 - 5.9

BP/MP Range
N/A

MP/MP Range
N/A

Freezing Point
N/A

Vapor Pressure
N/A

Vapor Density
N/A

Saturated Vapor Conc.
N/A

SG/Density
N/A

Bulk Density
N/A

Odor Threshold
N/A

Volatile
N/A

VOC Content
N/A

Water Content
N/A

Solvent Content
N/A

Evaporation Rate
N/A

Viscosity
N/A

Partition Coefficient
N/A

Decomposition Temp.
N/A

Flash Point °F
N/A

Flash Point °C
N/A

Explosion Limits
N/A

Flammability
N/A

Autoignition Temp
N/A

Solubility
N/A

Section 10 - Stability and Reactivity

Stability
Stable.

Materials to Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
May cause skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
May cause eye irritation.

Inhalation
May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Target Organ(s) or System(s)
Central nervous system, G.I. System.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: N/A

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
Contact a licensed professional waste disposal service to dispose of this material.

Disposal or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.
Section 15 - Regulatory Information

US Classification and Label Text
Indication of Danger
Irritant.

Risk Statements
Irritating to eyes, respiratory system and skin.

Safety Statements
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US Statements
- Target organ(s): Central nervous system. G.I. System.

United States Regulatory Information
SARA Listed: No

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSI: No
NDSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.