Dextrose Anhydrous Granular, USP, EP, BP, JP MSDS
Dear Customer,

This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI\(^1\) format to the GHS\(^2\) format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond.
   ANSI labels: pictograms, if present, will be inside individual black boxes.

2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number.
   Directly to the left will be a string of control characters, followed by a single letter.
   For GHS labels, the string of characters will end in “GHS:”

---

C\(_4\)H\(_3\)\(_4\)O

**BE159**

**SIZ SY**

**Benzyl Benzoate**
(Benzyl Alcohol)

**Phenylmethyl Ester**

U.S.P.

CAS: 120-07-5

F.W. 212.24

---

C\(_9\)H\(_8\)O\(_2\)

**GHS07**

**HAZARD**

**1**

**Acute**

**2**

**Chronic**

**3**

**Reproductive**

**4**

**Specific Hazard Statements**

**H225**

**Causes serious eye irritation.**

**H315**

**Causes respiratory irritation.**

**H335**

**May cause respiratory irritation.**

---

**KEEP OUT OF REACH OF CHILDREN**

[Image: Spectrum Chemical MSDS logo]

**Spectrum Chemical**

14422 South San Pedro Street

Gardena, California 90248

PHONE 310.516.8000

FAX 310.516.9843

AN ISO 9001:2008 REGISTERED COMPANY

www.spectrumchemical.com
Sincerely,

Regulatory Affairs
# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>![1]</td>
<td>![1]</td>
<td>![1]</td>
</tr>
</tbody>
</table>

### Personal Protective Equipment

- **Health Hazard**: 1
- **Fire Hazard**: 1
- **Reactivity**: 0

<table>
<thead>
<tr>
<th>Product code:</th>
<th>DE140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name:</td>
<td>DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP</td>
</tr>
<tr>
<td>Chemical Name:</td>
<td>No information available</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>Cartose, Cerelose, Corn sugar, D-Glucose, anhydrous, Dextropur, Dextrose, Dextrosol, Glucolin, Glucose, Glucose, anhydrous</td>
</tr>
<tr>
<td>Recommended use:</td>
<td>In foods</td>
</tr>
<tr>
<td>CAS #:</td>
<td>50-99-7</td>
</tr>
<tr>
<td>RTECS #:</td>
<td>L3600000</td>
</tr>
<tr>
<td>Formula:</td>
<td>C6-H12-O6</td>
</tr>
<tr>
<td>CI#:</td>
<td>Not available</td>
</tr>
<tr>
<td>Supplier:</td>
<td>Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000</td>
</tr>
<tr>
<td>Order Online At:</td>
<td><a href="https://www.spectrumchemical.com">https://www.spectrumchemical.com</a></td>
</tr>
<tr>
<td>Emergency Telephone Number:</td>
<td>CHEMTREC: 1-800-424-9300</td>
</tr>
<tr>
<td>Contact Person (East Coast):</td>
<td>Regina Wachenheim</td>
</tr>
<tr>
<td>Contact Person (West Coast):</td>
<td>Martin LaBenz</td>
</tr>
</tbody>
</table>

## 2. HAZARDS IDENTIFICATION

See Section 8.
2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING!
MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR
May cause skin and eye irritation
May cause irritation of respiratory tract


OSHA Regulatory Status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Potential Health Effects:

Skin Contact:
May cause skin irritation.

Eye Contact:
May cause eye irritation.

Inhalation:
May cause irritation of respiratory tract.

Ingestion:
Expected to be a low hazard. May cause gastrointestinal disturbances. May cause hypermotility, diarrhea.

Chronic Potential Health Effects:

<table>
<thead>
<tr>
<th>Component</th>
<th>Carcinogen Status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous 50-99-7 (100)</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Target Organs:
No information available

Mutagenic Effects:
May affect genetic material
Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects
Mutagenic effects in mammalian somatic cells
Experiments with animal lymphocytes have shown mutagenic effects

Teratogenic Effects:
No information available

Aggravated Medical Conditions:
No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

Product code: DE140
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>50-99-7</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. In case of shortness of breath, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F): No information available.

Flash Point Tested according to:
Not available

Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available

Autoignition Temperature (°C/°F): No information available

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: Carbon monoxide; Carbon dioxide

Specific hazards: May be combustible at high temperatures. Avoid generating dust. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:**
Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition. Avoid dust formation. Avoid dispersal of dust in the air. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Nonsparking tools should be used.

**Environmental Precautions:**
No information available.

**Methods for Cleaning Up:**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

**Handling**

*Technical Measures/Precautions:*
Provide sufficient air exchange and/or exhaust in work rooms. Minimize dust generation and accumulation. Avoid dust formation. Dry powders can build static electricity charges when subjected to friction of transfer and mixing operations. All equipment used when handling the product must be grounded. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from incompatible materials.

*Safe Handling Advice:*
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

**Storage**

*Technical Measures/Storage Conditions:*
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

*Incompatible Materials:*
Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION
Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e. there is no leakage from the equipment). It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in the handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.

Personal Protective Equipment

**Eye protection:** Safety glasses. Safety glasses with side-shields.

**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Wear respirator with dust filter.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

National occupational exposure limits

**United States**

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<tbody>
<tr>
<td>Dextrose, Anhydrous - 50-99-7</td>
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**Canada**

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
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<tbody>
<tr>
<td>Dextrose, Anhydrous 50-99-7</td>
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</table>

**Australia and Mexico**

<table>
<thead>
<tr>
<th>Components</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous 50-99-7</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.
Odor: Odorless.
Flash point (°C): No data available
Autoignition Temperature (°C/°F): No information available
pH: No information available
Decomposition temperature(°C/°F): No information available
Evaporation rate: No information available
Odor threshold (ppm): No information available

Solubility:
Freely soluble in water
Solubility in Water: 1200 gm/l or 1g/0.8 ml @ 30 deg. C; 1 g/1.1 ml @ 25 deg. C; 1 g/0.41 ml @ 50 deg. C; 1 g/0.28 ml @ 70 deg. C; 1 g/0.18 ml @ 90 deg. C.
Solubility in Methanol: 1 g/120 ml @ 20 deg. C
Very slightly soluble in Methanol
Slightly soluble in Acetone
Slightly soluble in alcohol
Soluble in Pyridine, Aniline, hot Glacial Acetic Acid

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions
Conditions to avoid: Heat. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Incompatible materials.
Incompatible Materials: Oxidizing agents.
Hazardous decomposition products: Carbon monoxide. Carbon dioxide.
Possibility of Hazardous Reactions: No information available
Polymerization: Hazardous polymerisation does not occur
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Dextrose, Anhydrous - 50-99-7
- LD50/oral/rat = 25800 mg/kg
- LD50/oral/mouse = No information available
- LD50/dermal/rat = No information available
- LD50/dermal/rabbit = No information available
- LC50/inhalation/rat = No information available
- LC50/inhalation/mouse = No information available
- LD50/oral/rat = 25800 mg/kg
- LD50/oral/mouse = No information available

Local Effects

Skin irritation: May cause skin irritation.
Eye irritation: Contact with eyes may cause irritation.
Inhalation: May cause irritation of respiratory tract.
Ingestion: Not expected to be a health hazard. May cause gastrointestinal disturbances. May cause gastrointestinal upset or indigestion. May cause hypermotility, diarrhea. May cause hyperglycemia.
Sensitization: No information available

Carcinogenic effects: Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>NTP</th>
<th>IARC</th>
<th>OSHA HCS - Carcinogens</th>
<th>ACGIH - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects:
- May affect genetic material
- Mutations in microorganisms
- Experiments with bacteria and/or yeast have shown mutagenic effects
- Mutagenic effects in mammalian somatic cells
- Experiments with animal lymphocytes have shown mutagenic effects

Product code: DE140
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
Reproductive Effects: Concern about the effects of Glucose on human embryonic development are based on the finding that infants of diabetic women and women who develop gestational diabetes have an increased incidence of congenital anomalies. The most common abnormalities are cardiac and neural tube defects. With more strict control of diabetes, the congenital anomaly rate appears to be decreased, provided such control is instituted early in pregnancy. The findings suggest, but do not prove that an elevated glucose level in maternal blood is the teratogenic principle in diabetic pregnancies.

Teratogenic Effects: No information available

Target Organs: No information available

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: No information available

Ecotoxicity effects: No data available.

Aquatic toxicity: No information available

Mobility: No information available

Persistence and degradability: No information available

Bioaccumulative potential: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No: Not regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: None
Subsidiary Risk: Not applicable
Marine Pollutant: No data available
ERG No: No information available
DOT QL (lbs): No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available

Product code: DE140

Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
15. REGULATORY INFORMATION

International Inventories

Product code: DE140  
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>Philippines (PICCS)</th>
<th>KOREA KECL</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
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<td>Present</td>
<td>Present KE-17727</td>
<td>Present (8)-46</td>
<td>Present</td>
<td>Present</td>
<td>Present 200-075-1</td>
</tr>
</tbody>
</table>

### U.S. Regulations

* **Dextrose, Anhydrous**

  FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1857


**Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
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<td>Not Listed</td>
<td>Not Listed</td>
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</table>

### CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
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</table>

### U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

### Canada

**WHMIS hazard class:**

Non-controlled

**Dextrose, Anhydrous**

Uncontrolled product according to WHMIS classification criteria

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Product code:** DE140  
**Product name:** DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
EU Classification

R-phrase(s)
not determined

S-phrase(s)
none

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td></td>
<td></td>
<td>No information</td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Not dangerous

16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

Preparation Date: 13-Aug-2014

Reason for revision: Not applicable

Prepared by: Sonia Owen

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product code: DE140
Product Name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP

Other means of identification
Synonyms:
- Cartose
- Cerelose
- Corn sugar
- D-Glucose, anhydrous
- Dextropur
- Dextrose
- Dextrosol
- Glucolin
- Glucose
- Glucose, anhydrous

CAS #: 50-99-7
RTECS #: LZ6600000
CI#: Not available

Recommended use of the chemical and restrictions on use
Recommended use: In foods.
Uses advised against: No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number
Chemtrec 1-800-424-9300

Contact Person:
- Martin LaBenz (West Coast)
- Regina Wachenheim (East Coast)

2. HAZARDS IDENTIFICATION

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Combustible dust

Label elements

Product code: DE140
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
Warning

May form combustible dust concentrations in air

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
<td>50-99-7</td>
<td>100</td>
<td>*</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. In case of shortness of breath, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms: May cause eye/skin irritation. May cause gastrointestinal disturbances. May cause hypermotility, diarrhea.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media
5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon monoxide; Carbon dioxide

Specific hazards: May be combustible at high temperatures
Avoid generating dust
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition. Avoid dust formation. Avoid dispersal of dust in the air. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Nonsparking tools should be used.

Environmental precautions No information available.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Minimize dust generation and accumulation. Avoid dust formation. Dry powders can build static electricity charges when subjected to friction of transfer and mixing operations. All equipment used when handling the product must be grounded. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.
Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<tbody>
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<td>Dextrose, Anhydrous - 50-99-7</td>
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Canada

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<tr>
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<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
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Australia and Mexico

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<th>Mexico</th>
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<tbody>
<tr>
<td>Dextrose, Anhydrous 50-99-7</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures to reduce exposure:
Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e. there is no leakage from the equipment). It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in the handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses. Safety glasses with side-shields.
Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.
Respiratory protection: Wear respirator with dust filter..
Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

Product code: DE140
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.

Appearance: Powder. Crystalline powder.

Odor: Odorless.

Taste: Sweet.

Flash Point Tested according to: Not available

Autoignition Temperature (°C/°F): No information available

Boiling point/range(°C/°F): No information available

Density (g/cm³): No information available

Evaporation rate: No information available

Odor threshold (ppm): No information available

Miscibility: No information available

Solubility: Freely soluble in water
Solubility in Water: 1200 gm/l or 1g/0.8 ml @ 30 deg. C.; 1 g/1.1 ml @ 25 deg. C; 1 g/0.41 ml @ 50 deg. C; 1 g/0.28 ml @ 70 deg. C; 1 g/0.18 ml @ 90 deg. C.
Solubility in Methanol: 1 g/120 ml @ 20 deg. C
Very slightly solubile in Methanol
Slightly soluble in Acetone
Slightly soluble in alcohol
Soluble in Pyridine, Aniline, hot Glacial Acetic Acid

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents

Chemical stability
Stability: Stable at normal conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid:
Heat. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Incompatible materials.

Product code: DE140

Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
Incompatible Materials: Oxidizing agents.

Hazardous decomposition products: Carbon monoxide. Carbon dioxide.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Dextrose, Anhydrous - 50-99-7

LD50/oral/rat = 25800 mg/kg
LD50/oral/mouse: No information available
LD50/dermal/rabbit: No information available
LD50/dermal/rat: No information available
LC50/inhalation/rat: No information available
LC50/inhalation/mouse: No information available
Other LD50 or LC50 information: No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 25800mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Product code: DE140

Product name: DEXTROSE,
ANHYDROUS, GRANULAR, USP, EP,
BP, JP
**Skin Contact:**  May cause skin irritation.

**Eye Contact:**  May cause eye irritation.

**Inhalation**
- May cause irritation of respiratory tract.

**Ingestion**
- Not expected to be a health hazard. May cause gastrointestinal disturbances. May cause gastrointestinal upset or indigestion. May cause hypermotility, diarrhea. May cause hyperglycemia.

**Aspiration hazard**
- No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity**
- No information available

**Sensitization:**
- No information available

**Mutagenic Effects:**
- May affect genetic material
  - Mutations in microorganisms
  - Experiments with bacteria and/or yeast have shown mutagenic effects
  - Mutagenic effects in mammalian somatic cells
  - Experiments with animal lymphocytes have shown mutagenic effects

**Carcinogenic effects:**
- Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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<td>Not listed</td>
<td>Not listed</td>
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</table>

**Reproductive toxicity**
- No data is available

**Reproductive Effects:**
- No information available

**Developmental Effects:**
- Concerns about the effects of Glucose on human embryonic development are based on the finding that infants of diabetic women and women who develop gestational diabetes have an increased incidence of congenital anomalies. The most common abnormalities are cardiac and neural tube defects. With more strict control of diabetes, the congenital anomaly rate appears to be decreased, provided such control is instituted early in pregnancy. The findings suggest, but do not prove that an elevated glucose level in maternal blood is the teratogenic principle in diabetic pregnancies.

**Teratogenic Effects:**
- No information available

**Specific Target Organ Toxicity**

**STOT - single exposure**
- No information available

**STOT - repeated exposure**
- No information available

**Target Organs:**
- No information available

12. **ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:**
- No data available.

**Product code:** DE140

**Product name:** DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

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<tbody>
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14. TRANSPORT INFORMATION

DOT
- UN-No: Not regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: Not applicable
- Packing Group: None
- Marine Pollutant: No data available
- ERG No: No information available
- DOT RQ (lbs): No information available

TDG (Canada)
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

ADR
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Packing Group: No information available
- Subsidiary Risk: No information available
- Classification Code: No information available
- Description: No information available

IMO / IMDG

Product code: DE140
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
14. TRANSPORT INFORMATION

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<td>Marine Pollutant</td>
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<td>Maximum Quantity:</td>
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RID

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ICAO

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IATA

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15. REGULATORY INFORMATION

International Inventories

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<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<td>Present KE-17727</td>
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<td>Present (8)-46</td>
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<td>Present 200-075-1</td>
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U.S. Regulations

**Dextrose, Anhydrous**

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1857


**Chemicals Known to the State of California to Cause Cancer:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Product code: DE140
Product name: DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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### CERCLA/SARA

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<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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### U.S. TSCA

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<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tbody>
<tr>
<td>Dextrose, Anhydrous</td>
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### Canada

**WHMIS hazard class:**
Non-controlled

**Dextrose, Anhydrous**
Uncontrolled product according to WHMIS classification criteria

**Canada Controlled Products Regulation:**
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

<table>
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<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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<tr>
<th>Components</th>
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<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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### EU Classification

**R-phrase(s)**
not determined

**S-phrase(s)**
none

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<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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<td>Dextrose, Anhydrous</td>
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The product is classified in accordance with Annex VI to Directive 67/548/EEC
Indication of danger:
Not dangerous

### 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
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</table>

#### See Section 8.

**Preparation Date:** 8/13/2014  
**Revision Date:** 8/13/2014  
**Prepared by:** Sonia Owen

**Disclaimer:**
All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Material Safety Data Sheet

**Product code:** DE140  
**Product name:** DEXTROSE, ANHYDROUS, GRANULAR, USP, EP, BP, JP
Contact Distributor
www.qualityexcipients.com
info@qualityexcipients.com