SAFETY DATA SHEET

1. Identification

Product identifier: SUCROSE

Other means of identification
Product No.: 6321, L380, 7724, 7723, 1397, 4074, 4072, 8360, 4097, 4005, 37726

Recommended use and restriction on use
Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer
Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034
Telephone: Customer Service: 855-282-6867
Fax: Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151
Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard Classification

OSHA hazard(s)
Combustible dust

Label Elements
Hazard Symbol: No symbol
Signal Word: Warning
Hazard Statement: May form combustible dust concentrations in air.

Precautionary Statement
Prevention: Prevent dust accumulation to minimize explosion hazard.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients
Substances

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCROSE</td>
<td>57-50-1</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin Contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: May cause irritation to skin, eyes, and respiratory tract.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Dust may form explosive mixture with air.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray. Carbon dioxide Dry chemical.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures
Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Keep upwind. Avoid inhalation of dust. Ventilate closed spaces before entering them. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Notification Procedures: Prevent runoff from entering drains, sewers, or streams. Inform authorities if large amounts are involved.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. All handling to take place in well-ventilated area. Avoid generation and spreading of dust. Avoid inhalation of dust. Ground container and transfer equipment to eliminate static electric sparks. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Use non-sparking hand tools and explosion-proof electrical equipment. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep containers tightly closed. Store in a well-ventilated place. Store in a dry place.

8. Exposure controls/personal protection

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCROSE</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td>SUCROSE - Respirable.</td>
<td>REL</td>
<td>5 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td>SUCROSE - Total</td>
<td>REL</td>
<td>10 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td>SUCROSE - Total dust.</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>SUCROSE - Respirable fraction.</td>
<td>PEL</td>
<td>5 mg/m³</td>
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</table>

Appropriate Engineering Controls: No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Eye/face protection: Use tight fitting goggles if dust is generated.

Skin Protection
Hand Protection: Wear protective gloves.

Other: Wear suitable protective clothing.

Respiratory Protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance
Physical state: Solid
Form: Crystals or powder.
Color: White
Odor: Odorless
Odor threshold: No data available.
pH: No data available.
Melting point/freezing point: 185.5 °C
Initial boiling point and boiling range: No data available.
Flash Point: Not applicable
Evaporation rate: No data available.
Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits
Flammability limit - upper (%): No data available.
Flammability limit - lower (%): No data available.
Explosive limit - upper (%): No data available.
Explosive limit - lower (%): No data available.

Vapor pressure: No data available.
Vapor density: No data available.
Relative density: 1.59 (20 °C)
Solubility(ies)
Solubility in water: 2,000 g/l
Solubility (other): No data available.
Partition coefficient (n-octanol/water): -3.70
Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

Other information
Dust explosion properties: 138 m.b./s
Minimum ignition energy: 100 mJ
Molecular weight: 342.3 g/mol (C12H22O11)

10. Stability and reactivity
Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Material is stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur.

Conditions to Avoid: Heat, sparks, flames. Dust clouds may be explosive under certain conditions.


Hazardous Decomposition Products: Thermal decomposition may release oxides of carbon.

### 11. Toxicological Information

**Information on likely routes of exposure**

Ingestion: Expected to be a low ingestion hazard.

Inhalation: Dust may irritate respiratory system.

Skin Contact: May cause irritation.

Eye contact: May cause temporary eye irritation.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

**Oral**
- Product: LD 50 (Rat): 29,700 mg/kg

**Dermal**
- Product: No data available.

**Inhalation**
- Product: No data available.

**Repeated Dose Toxicity**
- Product: No data available.

**Skin Corrosion/Irritation**
- Product: May cause skin irritation.

**Serious Eye Damage/Eye Irritation**
- Product: May irritate eyes.

**Respiratory or Skin Sensitization**
- Product: Not a skin sensitizer.

**Carcinogenicity**
- Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
- No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
- No carcinogenic components identified

- No carcinogenic components identified
Germ Cell Mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive Toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: None known.

Specific Target Organ Toxicity - Repeated Exposure
Product: None known.

Aspiration Hazard
Product: Not classified

Other Effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: Expected to be readily biodegradable.

BOD/COD Ratio
Product: No data available.

Bioaccumulative Potential
Bioconcentration Factor (BCF)
Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)
Product: Log Kow: -3.70

Mobility in Soil: The product is water soluble and may spread in water systems.
Other Adverse Effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT Not regulated.

IMDG Not regulated.

IATA Not regulated.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Not listed.

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

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<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
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<tr>
<td>SUCROSE</td>
<td>500 lbs</td>
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</table>

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None
None present or none present in regulated quantities.

US State Regulations
US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List
SUCROSE
Listed

US. Pennsylvania RTK - Hazardous Substances
SUCROSE
Listed

US. Rhode Island RTK
SUCROSE
Listed

Inventory Status:
Australia AICS: On or in compliance with the inventory
Canada DSL Inventory List: On or in compliance with the inventory
EINECS, ELINCS or NLP: On or in compliance with the inventory
Japan (ENCS) List: Not in compliance with the inventory.
China Inv. Existing Chemical Substances: Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
Canada NDSL Inventory: Not in compliance with the inventory.
Philippines PICCS: On or in compliance with the inventory
US TSCA Inventory: On or in compliance with the inventory
New Zealand Inventory of Chemicals: On or in compliance with the inventory
Japan ISHL Listing: On or in compliance with the inventory
Japan Pharmacopoeia Listing: Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID

0 1 0

0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Flammability
Health
Reactivity
Special hazard.

Issue Date: 11-03-2014
Revision Date: No data available.
Version #: 1.3
Further Information: No data available.
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