



AMERICAN CRYSTAL SUGAR COMPANY

GHS SAFETY DATA SHEET

Prepared to U.S. OSHA Standards in compliance with the GHS system (29 CFR 1910.1200(g), rev. 2012)

<p>Section 1</p>	<p>Identification</p>	<p style="text-align: center;"><u>GRANULATED SUGAR</u></p> <p>Manufacturer's Name American Crystal Sugar Co. 101 North 3rd Street Moorhead, MN 56560</p> <p>Emergency Telephone Number: (218) 236-4400</p> <p>Telephone Number for Information (218) 236-4324</p>	<p>food additive, flavor enhancer, baking ingredient, intended for human consumption</p> <p>No restrictions on use</p> <p>Preparation Date: 14 Aug 2014</p> <p>Revised: 21 Nov 2014</p>
<p>Section 2</p>	<p>Hazard(s) Identification</p>	<p>No Hazardous Components</p> <p>Sugar itself supports combustion only poorly and is not by itself a hazard unless it is involved as a secondary fuel in an existing fire.</p>	<p>The dust generated by the transportation and handling of sugar is an explosion hazard; measures must be taken to avoid the creation of fugitive dust and to abate any dust created.</p>
<p>Section 3</p>	<p>Composition / Information on Ingredients</p>	<p>Sucrose, sugar, D(+)Saccharose; C₁₂ H₂₂ O₁₁</p> <p>IUPAC: (2<i>R</i>,3<i>R</i>,4<i>S</i>,5<i>S</i>,6<i>R</i>)-2-[(2<i>S</i>,3<i>S</i>,4<i>S</i>,5<i>R</i>)-3,4-dihydroxy-2,5-bis(hydroxymethyl)oxolan-2-yl]oxy-6-(hydroxymethyl)oxane-3,4,5-triol]</p> <p>beta-D-Fructofuranosyl-alpha D glucopyranoside</p> <p>alpha-D-Gluco pyranosyl beta-D-fructofuranoside</p>	<p>Table sugar, white sugar, fine gran sugar, beet sugar, natural sweetener</p> <p>CAS 57-50-1 UNII C151H8M554 EINECS 200-334-9 RTECS WN6500000 CHEMBL 253582</p> <p>Pure product (organic compound)</p>
<p>Section 4</p>	<p>First Aid Measures</p>	<p>INHALED: not expected to require first aid. Exposure to dust may cause coughing or aggravate pre-existing respiratory conditions (asthma). Remove to fresh air; get medical attention for any breathing difficulty.</p>	<p>EYES: Mechanical irritant (red, watery, sore eyes). Flush granular material with running water, holding eyelids open. Get medical help if symptoms persist.</p>

<p>Section 5</p>	<p>Fire-Fighting Measures</p>	<p>Use water or other approved media. Avoid creating airborne dust with high pressure water streams; the use of a fine spray to saturate the material is suitable for any firefighting. Thermal decomposition or burning will produce carbon dioxide, carbon monoxide.</p> <p>Normal fire dept SOP for precautions and PPE.</p>	<p>Sugar dust is explosive, similar to flour and grain products. Though sugar itself supports combustion poorly, the relative explosion hazard of the dust is severe. As with any finely divided organic (carbon-based) solid, dust may be explosive if mixed with air in critical proportions and in the presence of an ignition source possibly resulting in chain reaction-style, serial explosions.</p>
<p>Section 6</p>	<p>Accidental Release Measures</p>	<p>To mitigate possible dust hazard:</p> <ul style="list-style-type: none"> • remove ignition sources • avoid dispersing dust into the air • ventilate area of spill • use non -sparking tools 	<p>Clean-up personnel should wear proper protective equipment. Sweep or scoop up spill for recovery or disposal and place into a closed container. Non-toxic and biodegradable. Whatever cannot be saved for recovery may be discarded as permitted by applicable regulations.</p>
<p>Section 7</p>	<p>Handling and Storage</p>	<p>Avoid handling techniques which are capable of producing and/or dispersing fugitive dust.</p> <p>Remove ignition sources.</p>	<p>Store in doors in areas of low humidity away from sources of moisture to avoid caking.</p> <p>In case of caking in large capacity storage vessels, personnel working inside the vessel should not stand under large cakes of sugar which could break loose and fall on those personnel.</p>

Section 8	Exposure Controls / Personal Protection	None normally required. Inhalation of high concentrations of the dust may cause coughing and upper respiratory tract irritation. In dusty situation, a NIOSH-approved respirator for dust may be worn. Pre-existing respiratory conditions: use approved mask.	In cases of water being used to flush spilled material, floors and steps may become sticky. Use proper footwear when negotiating floors and steps. Wearing of contact lenses when handling product should be avoided. Wear protective goggles.																							
Section 9	Physical and Chemical Properties	<table border="1"> <tr> <td data-bbox="607 558 964 632">Melting Point</td> <td data-bbox="964 558 1127 632">Decomposes >185 °C</td> </tr> <tr> <td data-bbox="607 632 964 705">Boiling Point</td> <td data-bbox="964 632 1127 705">N/A</td> </tr> <tr> <td data-bbox="607 705 964 779">Specific Gravity (H₂O = 1)</td> <td data-bbox="964 705 1127 779">1.587</td> </tr> <tr> <td data-bbox="607 779 964 831">Vapor Pressure (mm Hg.)</td> <td data-bbox="964 779 1127 831">5.15E-17</td> </tr> <tr> <td data-bbox="607 831 964 863">Vapor Density (AIR = 1)</td> <td data-bbox="964 831 1127 863">N/A</td> </tr> <tr> <td data-bbox="607 863 964 936">Evaporation Rate Butyl Acetate = 1)</td> <td data-bbox="964 863 1127 936">N/A</td> </tr> <tr> <td colspan="2" data-bbox="607 936 1127 1062"> Solubility in Water: <ul style="list-style-type: none"> • 2.07 grams per gram water @25° • 331 grams per 100 grams water @ 70°C </td> </tr> </table>	Melting Point	Decomposes >185 °C	Boiling Point	N/A	Specific Gravity (H ₂ O = 1)	1.587	Vapor Pressure (mm Hg.)	5.15E-17	Vapor Density (AIR = 1)	N/A	Evaporation Rate Butyl Acetate = 1)	N/A	Solubility in Water: <ul style="list-style-type: none"> • 2.07 grams per gram water @25° • 331 grams per 100 grams water @ 70°C 		<table border="1"> <tr> <td data-bbox="1127 558 1289 632">Flash Point</td> <td data-bbox="1289 558 1482 632">N/A</td> </tr> <tr> <td data-bbox="1127 632 1289 705">Flammable Limits</td> <td data-bbox="1289 632 1482 705">N/A</td> </tr> <tr> <td data-bbox="1127 705 1289 737">LEL</td> <td data-bbox="1289 705 1482 737">dust 20 g/m³</td> </tr> <tr> <td data-bbox="1127 737 1289 779">UEL</td> <td data-bbox="1289 737 1482 779">dust 15 kg/m³</td> </tr> </table> <p data-bbox="1127 779 1482 1062">Appearance and Odor: White, crystalline solid (monoclinic sphenoidal); odorless to a characteristic caramel odor.</p>		Flash Point	N/A	Flammable Limits	N/A	LEL	dust 20 g/m ³	UEL	dust 15 kg/m ³
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Section 10	Stability and Reactivity	<p data-bbox="607 1062 1127 1209">Stable under ordinary conditions of use and storage. Hazardous polymerization will NOT occur.</p> <p data-bbox="607 1209 1127 1367">Avoid temperatures above 160F; heat, flames, ignition sources, and incompatibles.</p>	<p data-bbox="1127 1062 1482 1167">Avoid strong oxidizers (e.g. nitric acid or sulfuric acid).</p> <p data-bbox="1127 1167 1482 1367">Thermal decomposition or burning will produce carbon dioxide, carbon monoxide.</p>																							
Section 11	Toxicological Information	<p data-bbox="607 1367 1127 1409">Non-toxic</p> <p data-bbox="607 1409 1127 1545">LD50 29,700 mg/kg (oral, rat): Respiratory cyanosis</p>	<p data-bbox="1127 1367 1482 1545">Product contains no ingredients currently classified as carcinogenic by NTP, IARC, or OSHA.</p>																							
Section 12	Ecological Information (non-mandatory)	<p data-bbox="607 1545 1127 1650">Non-toxic and biodegradable.</p>																								
Section 13	Disposal Considerations (non-mandatory)	<p data-bbox="607 1650 1127 1785">Whatever cannot be saved for recovery may be discarded as permitted by applicable regulations.</p>																								

Section 14	Transport Information (non-mandatory)	Not applicable															
Section 15	Regulatory Information (non-mandatory)	Not ordinarily regulated. (Note some countries do have import quotas which restrict total amount of sugar entering their borders.)															
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