



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>Beet Molasses</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>Livestock and poultry feed (not for human consumption), feed stock for sugar extraction, yeast production, and other byproducts</p> <p>No restrictions on use</p> <p>Preparation Date: 10 Dec 2014 Revised: New</p>								
<p>Section 2</p>	<p>Hazard(s) Identification</p>	<p>No Hazardous Components</p> <p>Beet molasses is non-hazardous under normal conditions of use, storage, and handling.</p> <p>Molasses that has dried 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>Very rarely, hot sugar products and their syrups have been known to exhibit “runaway behavior”; explosions have been known to occur under a combination of specific conditions. (Please see: §VII – Handling and Storage, “Conditions to Avoid.”</p>								
<p>Section 3</p>	<p>Composition / Information on Ingredients</p>	<p>Beet molasses is a concentrated mixture of soluble material (composition may vary greatly) from sugar beet root (<i>Beta vulgaris</i>) from which 85% of the sucrose has been removed.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Sugar (Sucrose), CAS 57-50-1</td> <td style="width: 40%; text-align: center;">55 – 60%</td> </tr> <tr> <td>Ash</td> <td style="text-align: center;">15 – 20%</td> </tr> <tr> <td>Water, CAS 7732-18-5</td> <td style="text-align: center;">15 – 20%</td> </tr> <tr> <td>Miscellaneous Organics, including Amino Acids</td> <td style="text-align: center;">10 – 20%</td> </tr> </table>		Sugar (Sucrose), CAS 57-50-1	55 – 60%	Ash	15 – 20%	Water, CAS 7732-18-5	15 – 20%	Miscellaneous Organics, including Amino Acids	10 – 20%
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Section 4	First Aid Measures	<p>SKIN: Redness and/or blistering of skin. If hot material gets on skin, flush affected area with cool water; seek medical attention in case of thermal burns.</p> <p>EYES (irritation of eyes from dissolved salts): immediately flush with running water, holding eyelids open. Get medical help if symptoms persist.</p> <p>Non-toxic, but non-palatable; contains bitter-tasting salts and organics.</p>	<p>ALLERGIC REACTIONS: Because sugars are prime feedstock for molds and yeasts, it is conceivable spore-formers could grow under conditions required for their growth. In the event of exposure to these spores, susceptible individuals may require specialized medical attention.</p>
Section 5	Fire-Fighting Measures	<p>If material has solidified, use water or other approved media.</p> <p>Thermal decomposition or burning will produce carbon dioxide, carbon monoxide.</p> <p>Normal fire dept SOP for precautions and PPE.</p>	<p>Avoid extreme heat in closed containers and pipes which may lead to uncontrollable spontaneous combustion (see §VII – Precautions for Safe Handling and Use, “Other Precautions”).</p>
Section 6	Accidental Release Measures	<p>Since material is non-toxic and biodegradable, it may be washed down with water. Material may be hot and is slippery. Clean-up personnel should wear proper protective equipment: goggles or face shield, thermal insulating gloves and non-slip boots.</p>	<p>Spilled material may be pumped into a closed tank for recovery or disposal. Whatever cannot be saved for recovery may be discarded as permitted by applicable regulations.</p>
Section 7	Handling and Storage	<p>Conditions to Avoid: Very rarely, hot sugar products and their syrups, especially molasses, have been known to exhibit “runaway behavior” under the <i>combined conditions</i> of (1) presence of amino acids; (2) enclosed space including piping where pressure can build up; (3) temperatures above 110 °C; (4) extended periods of time (generally less than 5 hours); (5) lowered pH; (6) increased viscosity; (7) lack of adequate thermal transfer.</p> <p>Though extremely rare, explosions have been known to occur under these <i>combined conditions</i>. See Platje, T. et al. (2006): “Study of the ‘Runaway Behavior’ of Technical Sucrose Solutions.” <i>Zuckerindustrie</i> 131, 231 – 238.</p> <p>Therefore: Avoid using steam to loosen material in plugged piping under those conditions listed above without proper pressure relief devices.</p>	

Section 8	Exposure Controls / Personal Protection	None normally required. In case of hot material, wear goggles, and thermal-protective gloves and boots. Sensitive skin may be irritated by continued contact with product; transferring product using high temperatures may cause burns.	In cases of water being used to flush spilled material, floors and steps may become sticky. Use proper footwear when negotiating floors and steps.		
Section 9	Physical and Chemical Properties	Melting Point	N/A	Flash Point	N/A
		Boiling Point	N/A	Flammable Limits	N/A
		Specific Gravity (H ₂ O = 1)	1.348 – 1.385	LEL	N/A
		Evaporation Rate (Butyl Acetate = 1)	N/A	UEL	N/A
		Vapor Pressure (mm Hg)	N/A	Appearance and Odor:	
		Vapor Density (AIR = 1)	N/A	Red-brown to black-colored viscous mass; mildly caramel to bitter amine odor.	
		Solubility in Water:	infinitely soluble		
Section 10	Stability and Reactivity	Stable under ordinary conditions of use and storage. Hazardous polymerization will NOT occur. Avoid temperatures above 120 °F, pH less than 7, and incompatibles.	Avoid strong oxidizers (e.g. nitric acid or sulfuric acid). Thermal decomposition or burning will produce carbon dioxide, carbon monoxide.		
Section 11	Toxicological Information	Non-toxic	Product contains no ingredients currently classified as carcinogenic by NTP, IARC, or OSHA.		
Section 12	Ecological Information (non-mandatory)	Non-toxic and biodegradable.			
Section 13	Disposal Considerations (non-mandatory)	Whatever cannot be saved for recovery may be discarded as permitted by applicable regulations.			
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.)			

<p>Section 16</p>	<p>Other Information</p>	<p><i>Avoid using steam to loosen material in plugged piping under those conditions listed above without proper pressure relief devices due to possible exothermic “runaway behavior” referenced earlier in this document:</i> <u>§VII – Handling and Storage, “Conditions to Avoid.”</u></p>
		<p>Slippery! Avoid excessively high temperatures. However, cold conditions will increase viscosity. If product temperature is kept between 80 – 120 °F (27 – 50 °C), flowability will be maintained and decomposition prevented.</p>