



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>CONCENTRATED BETAINÉ SOLUTION,</u> <u>BETAINÉ LIQUID SOLUTION,</u> <u>AMIX –C,</u> <u>CNS (CROSS-OVER NON-SUGARS)</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>Used for supplemental dietary nitrogen in livestock (not for human consumption)</p> <p>No restrictions on use</p> <p>Preparation Date: 14 Jan 2015</p> <p>Revised: 21 Jan 2015</p>				
<p>Section 2</p>	<p>Hazard(s) Identification</p>	<ul style="list-style-type: none"> • No Hazardous Components • CNS is non-hazardous under normal conditions of use, storage, and handling. • CNS is not considered combustible though in a dried state the organic components may provide secondary fuel for an existing fire. 					
<p>Section 3</p>	<p>Composition / Information on Ingredients</p>	<p>No Hazardous Components; it is a concentrated mixture of aqueous soluble material (composition may vary: betaine and other amino acids) from the processing of the sugar beet root (<i>Beta vulgaris</i>) from which virtually all the sucrose and salts have been removed.</p> <p>Betaine (glycine betaine; Oxyneurine; N,N,N-trimethylglycine; Carboxymethyl)trimethylammonium inner salt): 30 – 40%</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border: none;"><u>anhydrous</u></th> <th style="text-align: center; border: none;"><u>monohydrate</u></th> </tr> </thead> <tbody> <tr> <td style="border: none;"> <p>C₅H₁₁NO₂ Molecular Weight : 117.15 g/mol CAS-No. : 107-43-7 EC-No. : 203-490-6</p> </td> <td style="border: none;"> <p>C₅H₁₁NO₂ · H₂O Molecular Weight : 135.16 g/mol CAS-No. : 590-47-6 EC-No. : 203-490-6</p> </td> </tr> </tbody> </table> <p>Water, 30 – 45% CAS: 7732-18-5 Miscellaneous Organics, including other Amino Acids ~25%</p>		<u>anhydrous</u>	<u>monohydrate</u>	<p>C₅H₁₁NO₂ Molecular Weight : 117.15 g/mol CAS-No. : 107-43-7 EC-No. : 203-490-6</p>	<p>C₅H₁₁NO₂ · H₂O Molecular Weight : 135.16 g/mol CAS-No. : 590-47-6 EC-No. : 203-490-6</p>
<u>anhydrous</u>	<u>monohydrate</u>						
<p>C₅H₁₁NO₂ Molecular Weight : 117.15 g/mol CAS-No. : 107-43-7 EC-No. : 203-490-6</p>	<p>C₅H₁₁NO₂ · H₂O Molecular Weight : 135.16 g/mol CAS-No. : 590-47-6 EC-No. : 203-490-6</p>						

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. Sensitive skin may be irritated by continued contact with product.</p> <p>EYES (irritation of eyes): immediately flush with running water, holding eyelids open. Get medical help if symptoms persist.</p>	<p>ALLERGIC REACTIONS: It is conceivable spore-forming molds could grow under conditions required for their growth. In the event of exposure to these spores, susceptible individuals may require specialized medical attention.</p> <p>Non-toxic, but non-palatable; contains bitter-tasting organics.</p>
Section 5	Fire-Fighting Measures	<p>If material has solidified, use hot water or other approved media.</p> <p>Normal fire dept SOP for precautions and PPE.</p>	<p>Thermal decomposition or burning may produce oxides of carbon and nitrogen, and ammonia.</p>
Section 6	Accidental Release Measures	<p>Material is non-toxic and biodegradable.</p> <p>Barricade tape slippery floor spills and clean up immediately. Collect with some mechanical device; dilute and wash down with warm 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, or return to manufacturer for reprocessing. Whatever cannot be saved for recovery may be discarded as permitted by applicable regulations.</p>
Section 7	Handling and Storage	<p>Conditions to Avoid: Avoid excessively high temperatures. However, cold conditions will increase viscosity. If product temperature is kept between 80 to 120 °F (27 to 50 °C) flowability will be maintained and decomposition prevented.</p>	<p>Caked-up material may “set up” when using steam to clean out tanks and tank cars; hot water is a preferred solvent for cleaning out tanks.</p>
Section 8	Exposure Controls / Personal Protection	<p>None normally required. In case of hot material, wear goggles, and thermal-protective gloves and boots.</p> <p>Sensitive skin may be irritated by continued contact with product; transferring product using high temperatures may cause burns.</p>	<p>In cases of water being used to flush spilled material, floors and steps may become sticky. Use proper footwear when negotiating floors and steps.</p>

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)	1.15 – 1.19	LEL	N/A
		Evaporation Rate (Butyl Acetate = 1)	N/A	UEL	N/A
		Vapor Pressure (mm Hg)	N/A	Appearance and Odor: Dark brown- to black-colored viscous mass, bitter taste, amine odor.	
		pH	7 – 9		
		Solubility in Water: infinitely soluble			
Section 10	Stability and Reactivity	<p>Stable under ordinary conditions of use and storage. Hazardous polymerization will NOT occur.</p> <p>Avoid temperatures above 120 °F, pH less than 7, and incompatibles.</p>		<p>Avoid strong oxidizers such as nitric acid or sulfuric acid, hot acids.</p> <p>Thermal decomposition or burning of dried material may produce ammonia gas, carbon dioxide, and carbon monoxide.</p>	
Section 11	Toxicological Information	<p>Non-toxic</p> <p>LD50 830 mg/kg (mouse –intravenous)</p>		<p>Product contains no ingredients currently classified as carcinogenic by NTP, IARC, ACGIH, or OSHA.</p>	
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 dangerous goods.			

<p>Section 15</p>	<p>Regulatory Information (non-mandatory)</p>	<p>SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.</p> <p>SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.</p> <p>SARA 311/312 Hazards No SARA Hazards</p> <p>Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act.</p> <p>Pennsylvania Right To Know Components Betaine CAS-No. 107-43-7</p> <p>New Jersey Right To Know Components Betaine CAS-No.107-43-7</p> <p>California Prop. 65 Components This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.</p>
<p>Section 16</p>	<p>Other Information</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> <p>Caked-up material may “set up” when using steam to clean out tanks and tank cars; hot water is a preferred solvent for cleaning out tanks.</p>