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Section 1

Identification

## INNOVATING SCIENCE<sup>®</sup> by Aldon 221 Ro. V

"Cutting edge science for the classroom"

221 Rochester Street Avon, NY 14414-9409 (585) 226-6177 CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory and industrial use only. Not for drug, food or household use.

Product ACETIC ACID, GLACIAL	
Synonyms Ethanoic Acid / Methanecarboxylic Acid / Glacial Acetic Acid	
Section 2 Hazards identification	
<ul> <li>Signal word: DANGER</li> <li>Pictograms: GHS02 / GHS05</li> <li>Target organs: Respiratory system, Eyes, Skin, Teeth</li> <li> <b>Without State Provided State Pr</b></li></ul>	<ul> <li>Precautionary statement:</li> <li>P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.</li> <li>P233: Keep container tightly closed.</li> <li>P241: Use explosion-proof electrical/ventilating/lighting equipment.</li> <li>P242: Use only non-sparking tools.</li> <li>P243: Take precautionary measures against static discharge.</li> <li>P260: Do not breathe mist/vapours/spray.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</li> <li>P363: Wash contaminated clothing before reuse.</li> <li>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</li> <li>P310: Immediately call a POISON CENTER or doctor.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.</li> <li>P403+P235: Store in a well-ventilated place. Keep cool.</li> <li>P405: Store locked up.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

#### Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Acetic acid		64-19-7	99.8%	200-580-7	
Section 4	First aid measures		1		

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE CORNEAL BURNS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION AND/OR BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This chemical reacts violently with strong oxidizers, generating a fire and explosion hazard. Reacts violently with strong bases, strong acids and many other compounds.

## Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure controls / personal prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits.	Acetic acid	TWA: 25 mg/m <sup>3</sup> STEL: 37 mg/m <sup>3</sup>	TWA: 25 mg/m <sup>3</sup>	TWA: 25 mg/m <sup>3</sup> STEL: 37 mg/m <sup>3</sup>

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-

Section 9 Appearance: Clear,							
Appearance: Clear,	Physical and chemical p	-					
Odor: Strong, acrid, Odor threshold: Da pH: <2 Melting / Freezing p Boiling point: 118.	vinegar-like odor. ta not available. <b>point:</b> 16.7°C (62°F)	Flammability Explosion lim Vapor pressu Vapor density Relative dens	ate (Butyl acetate = 1):         (solid/gas): Data not avaits:         Lower / Upper: 4.         re (mm Hg): 11.4 @ 20         (Air = 1): 2.07         ity (Specific gravity): 1         ): Soluble in water.	/ailable. 0% / 19.9% ℃	Auto-ignit Decompos Viscosity: Molecular		e: 464°C (869°F) u <b>re:</b> Data not available. ble.
Section 10	Stability and reactivity						
Incompatible mater	I: Excessive temperatures, here	at, sparks, open f chromic acid, nitri	ic acid, sodium peroxide	of ignition. , carbonates, hydro	xides, phospł	nates. Corrosive	to some metals. Potentially viol
Hazardous decomp	osition products: Carbon mo	noxide, hydroger	n sulfide and other harm	ul gases or vapors	including oxid	les and/or other	compounds of sulfur and sodiur
Section 11	Toxicological information	ı					
IARC: No componer OSHA: No componer Ca Prop 65: This pro <b>Reproductive toxic</b> <b>STOT-single expos</b>	of this product present at level at of this product present at level of this product present at level oduct does not contain any cher ity: Data not available ure: Data not available osure: Data not available	els greater than or els greater than o	r equal to 0.1% is identif or equal to 0.1% is identi	ed as probable, po fied as a carcinoge	ssible or confi n or potential	irmed human car carcinogen by O	0,
shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor	Data not available ects: e to vapor may cause irritation of	sophagus, and st s, and blisters. corneal burns, ai	omach. Signs and symp	otoms may include	pain, nausea,	vomiting, diarrhe	hing, wheezing, tightness of che
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor Additional informat Section 12	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information	sophagus, and st s, and blisters. corneal burns, ai health effects ab	omach. Signs and symp nd loss of vision. pove. Exercise appropria	otoms may include	pain, nausea,	vomiting, diarrhe	
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor Additional informat Section 12 Toxicity to fish: Ga Toxicity to daphnia Toxicity to algae: E Persistence and de Mobility in soil: No Other adverse effect Section 13	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information mbusia affinis (fish, fresh water and other aquatic invertebra uglena gracilis (Algae), EC100 gradability: Easily biodegrada data available :ts: An environmental hazard of Disposal considerations	sophagus, and st s, and blisters. corneal burns, an health effects ab ), LC50 = 251 mg tes: Daphnia may = 720 mg/L ble Bioaccum PBT and v annot be exclude	omach. Signs and symp nd loss of vision. bove. Exercise appropria g/L/24 hours gna (Crustacea), EC50 = nulative potential: Not of vPvB assessment: Not ed in the event of unprofe	te procedures to m = 95 mg/L/24 hours expected to bioaccu data available essional handling o	pain, nausea, inimize poten umulate r disposal.	vomiting, diarrhe	ea, dizziness, drowsiness,
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor Additional informar Section 12 Toxicity to fish: Ga Toxicity to dish: Ga Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Coxicity to daphnia toxicity to algae: E Persistence and de Mobility in soil: No Other adverse effect Section 13 These disposal gu	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information mbusia affinis (fish, fresh water and other aquatic invertebra uglena gracilis (Algae), EC100 gradability: Easily biodegrada data available :ts: An environmental hazard of Disposal considerations	sophagus, and st s, and blisters. corneal burns, an health effects at corneal burns, an health effects at tes: Daphnia may zero mg/L ble Bioaccum PBT and v annot be exclude disposal of cata	omach. Signs and symp nd loss of vision. bove. Exercise appropria g/L/24 hours gna (Crustacea), EC50 = nulative potential: Not of vPvB assessment: Not ed in the event of unprofe alog-size quantities or	te procedures to m = 95 mg/L/24 hours expected to bioacce data available essional handling o	inimize poten umulate r disposal.	vomiting, diarrhe tial hazards.	container. State and/or loca
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor Additional informar Section 12 Toxicity to fash: Ga Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Section 12 Nother adverse effect Section 13 These disposal gu regulations may be Section 14 UN/NA number: Hazard class: 8,	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information mbusia affinis (fish, fresh water and other aquatic invertebra uglena gracilis (Algae), EC100 gradability: Easily biodegrada data available cts: An environmental hazard of Disposal considerations idelines are intended for the d different. Dispose of in actor Transport information UN2789	sophagus, and st s, and blisters. corneal burns, an l health effects at ), LC50 = 251 mg tes: Daphnia mag = 720 mg/L ble Bioaccum PBT and v annot be exclude disposal of cata cordance with a name: Acetic group: II	omach. Signs and symp nd loss of vision. bove. Exercise appropria g/L/24 hours gna (Crustacea), EC50 = <b>nulative potential:</b> Not vPvB assessment: Not alog-size quantities or Il local, state and fede c acid, glacial <b>Reportat</b>	te procedures to m = 95 mg/L/24 hours expected to bioacce data available essional handling o	inimize poten umulate r disposal. ations may a contract with	vomiting, diarrhe tial hazards.	container. State and/or loca
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor Additional informar Section 12 Toxicity to fash: Ga Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Section 12 Nother adverse effect Section 13 These disposal gu regulations may be Section 14 UN/NA number: Hazard class: 8,	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information mbusia affinis (fish, fresh water and other aquatic invertebra uglena gracilis (Algae), EC100 gradability: Easily biodegrada data available cts: An environmental hazard of Disposal considerations idelines are intended for the e different. Dispose of in actor Transport information UN2789 (3) Packing	sophagus, and st s, and blisters. corneal burns, an l health effects at ), LC50 = 251 mg tes: Daphnia mag = 720 mg/L ble Bioaccum PBT and v annot be exclude disposal of cata cordance with a name: Acetic group: II	omach. Signs and symp nd loss of vision. bove. Exercise appropria g/L/24 hours gna (Crustacea), EC50 = <b>nulative potential:</b> Not vPvB assessment: Not alog-size quantities or Il local, state and fede c acid, glacial <b>Reportat</b>	te procedures to m e 95 mg/L/24 hours expected to bioaccu data available essional handling o ily. Federal regul ral regulations or	inimize poten umulate r disposal. ations may a contract with	vomiting, diarrhe tial hazards.	container. State and/or loca
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with s Signs and symptor Additional informar Section 12 Toxicity to fish: Ga Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to daphnia Toxicity to dapa: E Persistence and de Mobility in soil: No Other adverse effect Section 13 These disposal gu regulations may be Section 14 UN/NA number: Hazard class: 8, Exceptions: Lim Section 15 A chemical is considered	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information mbusia affinis (fish, fresh water and other aquatic invertebra uglena gracilis (Algae), EC100 gradability: Easily biodegrada data available cts: An environmental hazard of Disposal considerations idelines are intended for the e different. Dispose of in acc Transport information UN2789 Shipping (3) Packing ited quantity equal to or less Regulatory information d to be listed if the CAS number for	sophagus, and st s, and blisters. corneal burns, and health effects ab ), LC50 = 251 mg tes: Daphnia mag = 720 mg/L ble Bioaccum PBT and v annot be excluded disposal of cata cordance with a name: Acetio group: II s than 1 L the anhydrous form	omach. Signs and symp nd loss of vision. bove. Exercise appropria g/L/24 hours gna (Crustacea), EC50 = <b>nulative potential:</b> Not of <b>/PvB assessment:</b> Not ed in the event of unprofe alog-size quantities or Il local, state and fede c acid, glacial <b>Reportat</b> <b>2020 ERC</b> n is on the Inventory list.	te procedures to m e 95 mg/L/24 hours expected to bioaccu data available essional handling o lly. Federal regul ral regulations or ble Quantity: 5,0 6 Guide # 132	pain, nausea, inimize poten umulate r disposal. ations may a contract with 000 lbs (227	vomiting, diarrhe tial hazards. apply to empty h a licensed ch 0 kg) <b>M</b>	container. State and/or loca emical disposal agency. arine pollutant: No
Potential health eff Inhalation: Exposur shortness of breath, Ingestion: May caus faintness, weakness Skin: Contact with s Eyes: Contact with Signs and symptor Additional informar Section 12 Toxicity to fish: Ga Toxicity to daphnia Toxicity to daphnia Toxicity to algae: E Persistence and de Mobility in soil: No Other adverse effect Section 13 These disposal gur regulations may be Section 14 UN/NA number: Hazard class: 8, Exceptions: Lim Section 15	Data not available ects: e to vapor may cause irritation and headache. se burns of the mouth, throat, e , collapse and coma. kin causes pain, redness, burn eyes may cause redness, pain, ns of exposure: See Potentia tion: RTECS #: AF1225000 Ecological information mbusia affinis (fish, fresh water and other aquatic invertebra uglena gracilis (Algae), EC100 gradability: Easily biodegrada data available cts: An environmental hazard of Disposal considerations idelines are intended for the e different. Dispose of in acc Transport information UN2789 Shipping (3) Packing ited quantity equal to or less Regulatory information d to be listed if the CAS number for	sophagus, and st s, and blisters. corneal burns, and health effects ab ), LC50 = 251 mg tes: Daphnia mag = 720 mg/L ible Bioaccum PBT and v cannot be excluded disposal of cata cordance with a name: Acetic group: II s than 1 L	omach. Signs and symp nd loss of vision. bove. Exercise appropria g/L/24 hours gna (Crustacea), EC50 = nulative potential: Not of vPvB assessment: No ed in the event of unprofe alog-size quantities or Il local, state and fede c acid, glacial Reportat 2020 ERC	te procedures to m e 95 mg/L/24 hours expected to bioaccu data available essional handling o ily. Federal regul ral regulations or	inimize poten umulate r disposal. ations may a contract with	vomiting, diarrhe tial hazards.	container. State and/or loca

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Section 1

Identification

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by Aldon 221 Rochester Street Avon, NY 14414-9409 (585) 226-6177 CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

For laboratory and industrial use only. Not for drug, food or household use.

Product AMMONIUM CHLORIDE	
Synonyms Ammonium Muriate ; Sal Ammoniac	
Section 2 Hazards identification	
Signal word: WARNING Pictograms: GHS07 Target organs: None known GHS Classification: Acute toxicity, oral (Category 4) Eye irritation (Category 2A) GHS Label information: Hazard statement: H302: Harmful if swallowed. H319: Causes serious eye irritation.	<ul> <li>Precautionary statement:</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P270: Do not eat, drink or smoke when using this product.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P337+P313: If eye irritation persists: Get medical attention.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

#### Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3 Composition / information on	ingredients			
Chemical Name	CAS #	%	EINECS	
Ammonium chloride	12125-02-9	100%	235-186-4	
Section 4 First aid measures				

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire fighting measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Reacts violently with ammonium nitrate and potassium chlorate. This generates fire and explosion hazard. Vaporizes at temperatures of about 335°C (653°F) evolving fumes of nitrogen oxides, chloride ions and ammonia gas.

## Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure controls / personal pro	tection			
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Limits.	Ammonium chloride fume	TWA: 10 mg/m <sup>3</sup> STEL: 20 mg/m <sup>3</sup>	None established	TWA: 10 ma/m <sup>3</sup> STEL: 20 ma/m <sup>3</sup>	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator

approved respirator	-						
Section 9	Physical and chemical	properties					
Appearance: Solid Odor: No odor. Odor threshold: D pH: Data not availa Melting / Freezing	, white, crystalline powder ata not available. ble. <b>point:</b> 520°C (968°F) limes @ 340°C (644°F)	Evaporation ra Flammability ( Explosion limi Vapor pressur Vapor density Relative densi	ate (=1): Data not a solid/gas): Data not a its: as NH <sub>3</sub> Lower: 1 re (mm Hg): Data not a (Air = 1): Data not av ty (Specific gravity): : Soluble in water.	vailable. 5% <b>Upper:</b> 28% available ailable	Auto-igniti Decompos Viscosity: Molecular		: Data not available <b>re:</b> Data not available. ıle.
Section 10	Stability and reactivity				1		
Incompatible mate	Stable d: Somewhat hygroscopic. H rials: Oxidizing agents, acids, position products: Ammonia	as an acid reaction bases, lead and si	lver salts.		nmonia and be	come more acid	on exposure and in storage.
Section 11	Toxicological information	on					
Skin corrosion/irri Serious eye dama Respiratory or ski Germ cell mutage Carcinogenity: Da NTP: No componer IARC: No compone OSHA: No compone Ca Prop 65: This pr Reproductive toxi STOT-single expor STOT-repeated ex Aspiration hazard Potential health ef Inhalation: Inhalatii Ingestion: Ingestion Skin: Contact with Signs and sympto	It of this product present at leve nt of this product present at leve ent of this product present at leve oduct does not contain any che city: Data not available sure: Data not available posure: Data not available : Data not available	ant. lable els greater than or e rels greater than o emicals known to th may cause upper , vomiting, acidosis rmatitis. isual impairment.	equal to 0.1% is identi r equal to 0.1% is ident the State of California to respiratory tract irritation, irritation of the mouth	fied as probable, po- iffied as a carcinoge cause cancer or rep on, coughing, and ch esophagus and gas	ssible or confir n or potential o productive toxi noking sensation stric system.	rmed human carc carcinogen by OS icity. on. ngestion may res	SHA.
Section 12	Ecological information						
Toxicity to daphnia Toxicity to algae: I Persistence and d Mobility in soil: N	almo clarki (fish, fresh water, m a and other aquatic invertebr Dunaliella tertiolecta (Algae) EC egradability: No data available o data available cts: An environmental hazard Disposal consideration	ates: Artemia salin 240 = 21.3 mg/L/90 e Bioaccum PBT and v cannot be exclude	a (Crustacea), EC50 = minutes ulative potential: No PvB assessment: No	28 mg/L/24 hours data available data available	r disposal.		
	•		llog-size quantities o	nly. Federal regul	ations may a	pply to empty c	ontainer. State and/or local
regulations may b Section 14	e different. Dispose of in ad	cordance with al	l local, state and fede	eral regulations or	contract with	a licensed che	emical disposal agency.
Section 14 UN/NA number:	Transport information		lot Pogulated				
Hazard class: N Exceptions: No	lot applicable Pa	ipping name: N cking group: N 20 ERG Guide #	lot applicable	Reportable Qua	antity: No	Ma	arine pollutant: No
Section 15	Regulatory information						
	ed to be listed if the CAS number for		-		Del	NDO	
Compor Ammonium chloride		Listed	CERLCA (RQ) 5000 lbs (2270 kg)	RCRA code Not listed	DSL Listed	NDSL Not listed	CA Prop 65 This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information						
							ered by them and must make indepen- s. NTP: National Toxicology Program.

dent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook. Form 06/2015

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Section 1

Identification

#### INNOVATING SCIENCE® by Aldon 221 Roc Avon, N

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## CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory and industrial use only. Not for drug, food or household use.

AMMONIUM HYDROXIDE, 28-30% Product Synonyms Ammonium Hydroxide, Water Solution Section 2 Hazards identification Signal word: DANGER Precautionary statement: Pictograms: GHS05 / GHS09 P260: Do not breathe mist/vapours/spray. Target organs: Eyes, Skin, Mucous membranes P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P310: Immediately call a POISON CENTER or doctor. **GHS Classification:** P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated Skin corrosion (Category 1B) clothing. Rinse skin with water/shower. Acute aquatic (Category 1) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for STOT-SE (Category 3) breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove GHS Label information: Hazard statement: contact lenses, if present and easy to do. Continue rinsing. H314: Causes severe skin burns and eye damage. P312: Call a POISON CENTER or doctor if you feel unwell. H335: May cause respiratory irritation. P363: Wash contaminated clothing before reuse. H400: Very toxic to aquatic life. P391: Collect spillage. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

#### Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Lachrymator Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3 Cor	mposition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Water Ammonium hydroxide (as A	Ammonia)		oximately 70-72% oximately 28-30%	231-791-2 215-647-6	
Section 4 Firs	st aid measures				

**INGESTION:** MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE FATAL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE BURNS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SEVERE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire fighting measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly.

## Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Carefully neutralize with Sodium bicarbonate, absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray, or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure controls / personal pro	tection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Ammonia CAS No. 7664-41-7	TWA: 17 mg/m <sup>3</sup> ; STEL: 24 mg/m <sup>3</sup>	TWA: 50 ppm, 35 mg/m <sup>3</sup>	TWA: 18 mg/m <sup>3</sup> ; STEL: 27 mg/m <sup>3</sup>

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-

approved respirate							
Section 9	Physical and chemical p	roperties					
Odor: Strong, pur Odor threshold: pH: Data not avai	<b>g point:</b> -77°C (-106°F) ℃ (97°F)	Flammability Explosion lim Vapor pressur Vapor density Relative dens	rate (Water = 1): 1 (solid/gas): Data not ava itts: Lower / Upper: 169 re (mm Hg): 115 mm @ / (Air = 1): 0.6-1.2 ity (Specific gravity): 0.9 : Complete in water.	% / 27%(NH <sub>3</sub> gas) 20°C (68°F)	Auto-igniti Decompos Viscosity: Molecular		:: 651°C (1204°F) ire: Data not available. ble.
Section 10	Stability and reactivity						
Incompatible mat	y: Stable oid: Excessive temperatures wh terials: Acids, strong oxidizers, I mposition products: Decompos	ich cause evapora nalogens, heavy m	netals.		as and nitroge	n oxides.	
Section 11	Toxicological informatio	n					
Germ cell mutage Carcinogenity: D NTP: No compone IARC: No compone OSHA: No compone Ca Prop 65: This p	ent of this product present at leve nent of this product present at leve onent of this product present at le product does not contain any che	ls greater than or els greater than or vels greater than o	r equal to 0.1% is identifie or equal to 0.1% is identifi	ed as probable, po ied as a carcinoge	ssible or confir n or potential o	med human care carcinogen by OS	5,
STOT-single expo STOT-repeated e Aspiration hazar Potential health e Inhalation: Burnin Ingestion: Abdom Skin: Redness, sl Eyes: Redness, p Signs and sympt skin. Inhalation m	xicity: Data not available osure: The substance or mixture exposure: Data not available d: Data not available effects: mg sensation, cough, labored breating ninal cramps, abdominal pain, sor kin burns, pain, blisters. poain, blurred vision, burns. toms of exposure: Material is e nay be fatal as a result of spasm, mation: RTECS #: BQ9625000	athing, shortness o e throat, vomiting, xtremely destructiv inflammation and	of breath, sore throat. , ve to tissue of the mucou edema of the larynx and	s membranes, upp	er respiratory,	gastrointestinal	and digestive tracts, eyes and
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STOT-single expo STOT-repeated e Aspiration hazar Potential health of Inhalation: Burnin Ingestion: Abdom Skin: Redness, sl Eyes: Redness, sl Eyes: Redness, sl Signs and sympt skin. Inhalation m Additional inform Section 12 Toxicity to fish: I Toxicity to fish: I Toxicity to dapae: Persistence and Mobility in soil: I	osure: The substance or mixture exposure: Data not available effects: ng sensation, cough, labored brea- ninal cramps, abdominal pain, sor kin burns, pain, blisters. boms of exposure: Material is e nay be fatal as a result of spasm, nation: RTECS #: BQ9625000 Ecological information LC50 Lepomis macrochirus (blue nia and other aquatic invertebra i TLm Diatom (algae) 420 mg/L/1 degradability: No data available No data available	athing, shortness of e throat, vomiting, atremely destruction inflammation and (Ammonium hydro gill) 0.024-0.093 n ates: LC50 Daphn 20H @ 22°C (50% e Bioaccum PBT and v cannot be exclude	of breath, sore throat. edema of the larynx and oxide, anhydrous] ng/L/48H nia magna (water flea) 0.6 6 growth reduction) nulative potential: No da	s membranes, upp bronchi, chemical 6 mg/L/48H @ 22 ata available lata available	er respiratory, pneumonitis a °C	gastrointestinal	and digestive tracts, eyes and
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Page E1 of E2

Section 1

Identification

# **INNOVATING SCIENCE<sup>®</sup>** "Cutting edge science for the classroom"

by Aldon 221 Rochester Street Avon. NY 14414-9409 (585) 226-6177

## **CHEMTREC 24 Hour Emergency** Phone Number (800) 424-9300 For laboratory and industrial use only.

Not for drug, food or household use.

Synonyms       Muriatic Acid, Water Solution / Hydrogen Chloride, Water Solution         Section 2       Hazards identification         Signal word:       WARNING         Pictograms:       GHS05         Target organs:       Respiratory system, skin, eyes, lungs.         GHS Classification:       Corrosive to metals (Category 1)         Skin irritant (Category 3)       Eye irritant (Category 2B)	Precautionary statement(s): P234: Keep only in original container. P264: Wash hands thoroughly after handling. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313: If skin irritation occurs: Get medical attention. P337+P313: If eye irritation persists: Get medical attention. P390: Absorb spillage to prevent material damage. P406: Store in corrosive resistant container with a resistant inner liner.
Signal word: WARNING Pictograms: GHS05 Target organs: Respiratory system, skin, eyes, lungs. GHS Classification: Corrosive to metals (Category 1) Skin irritant (Category 3)	<ul> <li>P234: Keep only in original container.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P332+P313: If skin irritation occurs: Get medical attention.</li> <li>P337+P313: If eye irritation persists: Get medical attention.</li> <li>P390: Absorb spillage to prevent material damage.</li> </ul>
Pictograms: GHS05 Target organs: Respiratory system, skin, eyes, lungs. GHS Classification: Corrosive to metals (Category 1) Skin irritant (Category 3)	<ul> <li>P234: Keep only in original container.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P332+P313: If skin irritation occurs: Get medical attention.</li> <li>P337+P313: If eye irritation persists: Get medical attention.</li> <li>P390: Absorb spillage to prevent material damage.</li> </ul>
GHS Label information: Hazard statement(s): H290: May be corrosive to metals. H316: Causes mild skin irritation. H320: Causes eye irritation.	

Section 3	Composition / information on ingredients							
Chemical Name		CAS #	%	EINECS				
Water Hydrochloric acid		7732-18-5 7647-01-0	96.86% 3.14%	231-791-2 231-595-7				
Section 4	First aid measures							

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire fighting measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with metals produce hydrogen, which is flammable and may produce explosive mixtures with air.

Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8	Exposure controls / personal protection						
Exposure Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Limits:	Hydrogen chloride	STEL: C 2 ppm / C 2.98 mg/m <sup>3</sup>	STEL: C 5 ppm / C 7 mg/m <sup>3</sup>	STEL: C 5 ppm / C 7 mg/m <sup>3</sup>			

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low. Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.								
Section 9	Physical and chemical pro	perties						
Appearance: Clear, Odor: No odor. Odor threshold: No pH: No data availabl Melting / Freezing p Boiling point: ~ 100 Flash point: Not flar Evaporation rate ( =	data available e oint: ~0°C (~ 32°F) [water] °C (212°F) [water] nmable.	Explosion lin Vapor pressu Vapor densit Relative dens Solubility(ies Partition coeff	(solid/gas): No data a nits: Upper/Lower: No rre (mm Hg): 14 [water y (Air = 1): 0.7 [water] sity (Specific gravity): ): Complete. icient: (n-octanol / water): temperature: No data	o data available ] 1.0 [water] No data available	Viscosity: Molecular	sition temperatur No data availabl formula: Mixture weight: Mixture.	е.	
Section 10	Stability and reactivity							
Conditions to avoid	Chemical stability:       Stable       Hazardous polymerization:       Will not occur.         Conditions to avoid:       Containers may burst when heated.       Avoid contact with water.         Incompatible materials:       Metals, bases, active metals, alkali metals, oxidizing agents, hydroxides, amines, carbonates, cyanides, sulfides, sulfites,							
formaldehyde.			, 33,,,	, ,		, ,	,	
	osition products: Hydrogen ch	loride gas.						
Section 11	Toxicological information							
Skin corrosion/irrita Serious eye damage Respiratory or skin Germ cell mutageni Carcinogenity: Data NTP: No component IARC: Group 3: Not OSHA: No compone Ca Prop 65: This pro- Reproductive toxici STOT-single exposu STOT-repeated expo Aspiration hazard: Potential health effe Exercise appropriate Inhalation: May be ha Skin: May cause irrit Signs and symptom Additional informati	Acute toxicity: Data not available Skin corrosion/irritation: Data not available at this dilution. Serious eye damage/irritation: Data not available at this dilution. Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available ThTP: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP. IARC: Group 3: Not classifiable as to its carcinogenicity to humans. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. Reproductive toxicity: Data not available STOT-single exposure: Data not available Aspiration hazard: Data not available Potential health effects: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards. Inhalation: May be harmful if inhaled. Material may cause irritation to the tissue of the mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. Skin: May cause irritation and/or burns. Eyes: May cause irritation and/or burns. Signs and symptoms of exposure: Data not available at this dilution.							
Section 12	Ecological information							
Toxicity to daphnia Toxicity to algae: No Persistence and deg Mobility in soil: No	radability: No data available	s: No data ava Bioaccum PBT and v	ilable iulative potential: No o /PvB assessment: No	lata available data available	r disposal.			
Section 13	Disposal considerations							
	delines are intended for the d different. Dispose of in acco			· · · · ·				
Section 14	Transport information							
Hazard class: 8	UN/NA number:UN1789Shipping name:Hydrochloric acidHazard class:8Packing group:IIIReportable Quantity:5000 lbs (2270 kg)Marine pollutant:NoExceptions:Limited quantity equal to or less than 5 Lt2020 ERG Guide #157							
Section 15	Regulatory information							
	to be listed if the CAS number for the							
Compone	nt	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65	
Hydrochloric acid	<b>0</b>	Listed	5000 lbs (2270 kg)	D002	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.	
Section 16	Other information							
The information contained	ed herein is furnished without warran	tv of anv kind. Ei	mplovers should use this in	tormation onlv as a su	pplement to othe	er information dathe	ered by them and must make indepen-	

# **GENERAL STORAGE CODE GREEN**

Page E1 of E2

# Section 1

Identification

## **INNOVATING SCIENCE<sup>®</sup>** by Aldon "Cutting edge science for the classroom"

221 Rochester Street Avon. NY 14414-9409 (585) 226-6177

**CHEMTREC 24 Hour Emergency** Phone Number (800) 424-9300 For laboratory and industrial use only. Not for drug, food or household use.

Synonyms None	
Section 2 Hazards identification	
This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals. Signal word: None required Pictograms: No symbol required Target organs: None known GHS Classification: None required GHS Label information: Hazard statement: None required Precautionary statement: None required	Supplemental information: Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

#### Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3 Composition / inf	formation on ingredients			
Chemical Name	CAS #	%	EINECS	
Sodium acetate, trihydrate	6131-90-4	100%	204-823-8 (anhydrous)	
Section 4 First aid measure	s			

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALTED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire fighting measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure controls / personal protection						
Exposure Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Limits:	Sodium acetate	Not established	Not established	Not established			

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.							
Section 9	Physical and chemical pr	operties					
Odor: Slight acetic a Odor threshold: Da pH: 8.9 (0.1M solution	White crystalline powder. icid odor. ta not available. on) oint: 57.7°C (136°F) °C (253°F)	Evaporation ra Flammability (s Explosion limit Vapor pressure Vapor density Relative densit	te (=1): Data not a solid/gas): Data not is: Lower / Upper: I e (mm Hg): Data not (Air = 1): Data not vy (Specific gravity): 125 g/100 ml in wate	available. Data not available available /ailable 1.45	Auto-ignitic Decomposi Viscosity: Molecular f		: 599°C (1110°F) <b>re:</b> Data not available <sub>l</sub> e.
Section 10	Stability and reactivity						
Chemical stability: Conditions to avoid	Stable I: Exposure to moist air or wate		us polymerization:	Will not occur.			
Incompatible mater	ials: Oxidizing and reducing ag	ents may destroy	colors.				
Hazardous decomp	osition products: Carbon oxid	les.					
Section 11	Toxicological information						
Serious eye damag Respiratory or skin Germ cell mutageni Carcinogenity: Dat NTP: No componen IARC: No componen OSHA: No componen Ca Prop 65: This pro Reproductive toxici STOT-single expose STOT-repeated exp Aspiration hazard: Potential health effe Inhalation: May be hi Skin: Causes mild sl Eyes: Causes eye in	Acute toxicity: Oral-rat LD50: 3530 mg/kg [Sodium acetate, anhydrous] Skin corrosion/irritation: Skin-rabbit - 500 mg/24 hours - irritating [Sodium acetate, anhydrous] Serious eye damage/irritation: Eyes-rabbit - 500 mg - irritating [Sodium acetate, anhydrous] Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. Reproductive toxicity: Data not available STOT-ringle exposure: Data not available STOT-repeated exposure: Data not available Potential health effects: Inhalation: May be harmful if inhaled. Inhalation may cause irritation to respiratory tract. Ingestion: May be harmful if swallowed. Ingestion may cause abdominal pain and vomiting. Skin: Causes mild skin irritation. Eyes: Causes eye irritation. Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.						
Section 12	Ecological information						
Toxicity to fish: Brachydanio rerio (fish, fresh water), LC0: ≥100 mg/L/96 hours [Sodium acetate, anhydrous]         Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50: >1000 mg/L/48 hours [Sodium acetate, anhydrous]         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal considerations         These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.         Section 14       Transport information							
UN/NA number: Hazard class: No Exceptions: Not	ot applicable Pack	ping name: N king group: N ERG Guide #	0	Reportable Qu	antity: No	Ma	arine pollutant: No
Section 15	Regulatory information						
	d to be listed if the CAS number for	,	,		<b>D</b> 01	NP C'	04 D
Compone	ent	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Sodium acetate Section 16	Other information	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
		abu of one bit of the	nieuwana ali sudut sudut sudut	aformation and	umlana	n inform	and by them as down as it is the
dent determinations of s	suitability and completeness of inform ncy for Research on Cancer, OSHA	mation from all sour	ces to assure proper use ty and Health Administra	of these materials and	l the safety and he rget Organ Toxici	ealth of employees ty, SE: Single Exp	ered by them and must make indepen- s. NTP: National Toxicology Program, osure, RE: Repeated Exposure,

# **GENERAL STORAGE CODE GREEN**

Page E1 of E2

Section 1

Identification

# **INNOVATING SCIENCE®** by Aldon

"Cutting edge science for the classroom"

221 Rochester Street Avon. NY 14414-9409 (585) 226-6177

**CHEMTREC 24 Hour Emergency** Phone Number (800) 424-9300 For laboratory and industrial use only.

Not for drug, food or household use.

Product SODIUM BICARBONATE, ANHYDROUS	
Synonyms Baking Soda / Sodium Hydrogen Carbonate / Carbonic Acid Sodium (1:1	)
Section 2 Hazards identification	
This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals. Signal word: Not classified Pictograms: Not classified Target organs: None known GHS Classification: Not classified	Precautionary statement(s): Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.
GHS Label information: Hazard statement(s): Not classified	

#### Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3 Compose	Composition / information on ingredients							
Chemical Name		CAS #	%	EINECS				
Sodium bicarbonate		144-55-8	100%	205-633-8				
Section 4 First aid	l measures							

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire fighting measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material is commonly used to extinguish fires.

#### Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Store away from acids.

Section 8	Exposure controls / personal protection						
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
	Sodium bicarbonate	None established	None established	None established			

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9	Physical and chemical pr	operties	
Odor: No odor. Odor threshold: Data pH: 8.2 (1% solution)	int: Data not available	Evaporation rate (=1): Data not available Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Negligible Vapor density (Air = 1): Data not available Relative density (Specific gravity): 2.16 @ 20°C Solubility(ies): 8.6 g/100 ml water at 20°C	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available Viscosity: Data not available. Molecular formula: NaHCO <sub>3</sub> Molecular weight: 84.01
Section 10	Stability and reactivity		
Observised stability (	Dt-hl-	Hennedaus a charactication. M/ill a starson	

Chemical stability: Stable

ERG: Emergency Response Guidebook.

Form 06/2015

Hazardous polymerization: Will not occur.

Conditions to avoid: High temperature causes decomposition to sodium carbonate, water and carbon dioxide.

Incompatible materials: Reacts with acids to yield acid salts, water and carbon dioxide.

Hazardous decomposition products: Gaseous carbon dioxide.

# Section 11 Toxicological information

Section II	Toxicological into	mation						
•	-rat LD50: 4220-4400	0 0						
	tion: Skin-rabbit - not	0	_					
	e/irritation: Eye-rabbi		ig					
	sensitization: Non se	0						
-	Germ cell mutagenicity: Data not available Carcinogenity: Data not available							
	of this product present	at levels are	ater than or e	equal to 0.1% is identi	fied as a known or a	nticipated carci	nogen by NTP	
	t of this product preser							cinogen by IARC.
	nt of this product prese							
Ca Prop 65: This pro	duct does not contain a	any chemical	s known to th	e State of California t	o cause cancer or re	eproductive toxic	city.	
Reproductive toxici	ty: Data not available							
0 1	<b>ire:</b> Data not available							
	osure: Data not availa	ıble						
Aspiration hazard:								
Potential health effe		·						
	e dust may irritate resp		noo if ingooto	d				
Skin: No hazard kno	may cause gastrointes	แกล นเรเนเมล	nce il ingeste	u.				
	eyes may cause very sl	ight irritation						
	is of exposure: See I			ove.				
	ion: RTECS #: VZ09							
Section 12	Ecological information	ation						
Toxicity to daphnia Toxicity to algae: Ni Persistence and deg Mobility in soil: No	mbusia affinis (fish, fre: and other aquatic inv tcheria linearis (Algae) gradability: No data a data available ts: An environmental l	ertebrates: LC50: 650 n vailable	Daphnia mag ng/l/5 day Bioaccumu PBT and vi	na (Crustacea) EC50 ulative potential: No PvB assessment: N	o data available o data available			
Section 13	Disposal consider	ations						
	delines are intended	for the disp						container. State and/or local emical disposal agency.
Section 14	Transport information	ation						
UN/NA number:	Not applicable	Shippin	<b>name</b> : N	lot Regulated				
Hazard class: No	t applicable			ot applicable	Reportable Qu	antity: No	Ма	arine pollutant: No
Exceptions: Not	••	•	• •	Not applicable				•
Section 15	Regulatory inform	ation						
	to be listed if the CAS nu		nhvdrous form	is on the Inventory list.				
Compone			TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Sodium bicarbonate			Listed	Not listed	Not listed	Listed	Not listed	This product does not contain
			Listou	Not listed	Nothisted	Listed	Nothisted	any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information							•
dent determinations of s	uitability and completenes ncy for Research on Cano	ss of information	on from all sour	ces to assure proper use	e of these materials and	d the safety and h	ealth of employee	ered by them and must make indepen- s. NTP: National Toxicology Program, osure, RE: Repeated Exposure,

Section 1

# SAFETY DATA SHEET

Identification

**INNOVATING SCIENCE<sup>®</sup>** 

"Cutting edge science for the classroom"

# **GENERAL STORAGE CODE GREEN**

## Page E1 of E2

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory and industrial use only. Not for drug, food or household use.

SODIUM CHLORIDE Product Synonyms Common Salt / Rock Salt Section 2 Hazards identification Supplementary information: This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective Chemicals. gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell. Signal word: Not classified Pictograms: Not classified Target organs: None known GHS Classification: Not classified GHS Label information: Hazard statement(s): Not classified Precautionary statement(s): Not classified

by Aldon

221 Rochester Street Avon, NY 14414-9409

(585) 226-6177

#### Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

 Section 3
 Composition / information on ingredients

 Chemical Name
 CAS #
 %
 EINECS

 Sodium chloride
 7647-14-5
 100%
 231-598-3

 Sodium chloride
 Image: Case of the section of the se

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

# Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Store away from acids.

Section 8	Exposure controls / personal prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Sodium chloride	None established	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9	Physical and chemical	properties					
Appearance: Solid Odor: No odor. Odor threshold: D pH: 4.0-9.0 Melting / Freezing Boiling point: 1463 Flash point: Non c	ata not available. <b>point:</b> 801°C (>1473°F) 5°C (2669°F)	Flammability (sol Explosion limits: Vapor pressure ( Vapor density (Ai Relative density	( = 1): Data not a lid/gas): Data not a Lower / Upper: D mm Hg): 2.4 ir = 1): Data not av. (Specific gravity): 1 g/2.8 ml water at 25	available. Data not available ailable 2.16 @ 25°C	Auto-igniti Decompos Viscosity: Molecular		e: Data not available Ire: Data not available
Section 10	Stability and reactivity						
Chemical stability: Conditions to avoi	: Stable i <b>d:</b> Wet conditions can cause		s polymerization: \ n.	Will not occur.			
•	erials: Strong acids.						
Hazardous decom	position products: Electroly	sis can produce chlorin	ie gas.				
Section 11	Toxicological informati	on					
Germ cell mutage Carcinogenity: Da NTP: No componer IARC: No compone OSHA: No compon Ca Prop 65: This pr Reproductive toxic STOT-single expos	n sensitization: Data not ava nicity: Data not available ata not available nt of this product present at levent of this product present at levent of this product present at l roduct does not contain any ch city: Data not available sure: Data not available	vels greater than or equ vels greater than or eq evels greater than or eq	ual to 0.1% is identi qual to 0.1% is iden	ified as probable, po tified as a carcinoge	ssible or confir n or potential o	med human car carcinogen by O	
Aspiration hazard Potential health ef Inhalation: Inhalatio Ingestion: Ingestion Skin: Contact may Eyes: Contact may Signs and sympto	posure:       Data not available         :       Data not available         ifects:       on of dust leaves salty taste w         on of dust leaves salty taste w       nore than         cause very slight irritation.       v         v cause very slight irritation.       ons of exposure:         Gross over       Gross over         ation:       RTECS #:       VZ4725000	0.1 pound) may cause rexposure over a long p	e vomiting.				
Aspiration hazard Potential health ef Inhalation: Inhalatio Ingestion: Ingestion Skin: Contact may Eyes: Contact may Signs and sympto Additional informa Section 12	Data not available ffects: on of dust leaves salty taste w n of large amounts (more than cause very slight irritation. v cause very slight irritation. or as of exposure: Gross over ation: RTECS #: VZ4725000 Ecological information	0.1 pound) may cause rexposure over a long p	e vomiting. period of time, result				
Aspiration hazard Potential health ef Inhalation: Inhalatio Ingestion: Ingestion Skin: Contact may Eyes: Contact may Signs and sympto Additional informa Section 12 Toxicity to fish: Le Toxicity to fish: Le Toxicity to algae: A Persistence and d Mobility in soil: No	Data not available ffects: on of dust leaves salty taste w n of large amounts (more than cause very slight irritation. v cause very slight irritation. ms of exposure: Gross over ation: RTECS #: VZ4725000 Ecological information epomis macrochirus (fish, fres a and other aquatic inverteb Anabaena variabilis (Algae) LC egradability: No data availab	n 0.1 pound) may cause rexposure over a long p hwater) LC50: 9,675 m rates: Daphnia magna C50: 23,565 mg/l/4 day ble Bioaccumula PBT and vPvl	e vomiting. beriod of time, result g/l/96 hours (Crustacea) EC50: tive potential: No B assessment: No	is in dehydraLition. 6,175 mg/l/16 hours data available o data available			
Aspiration hazard Potential health ef Inhalation: Inhealtio Ingestion: Ingestion Skin: Contact may Eyes: Contact may Signs and sympto Additional informa Section 12 Toxicity to fish: Le Toxicity to fish: Le Toxicity to daphnia Toxicity to algae: A Persistence and do Mobility in soil: No Other adverse effe Section 13	Data not available ffects: on of dust leaves salty taste with n of large amounts (more than cause very slight irritation. with a cause very slight irritation. mes of exposure: Gross over ation: RTECS #: VZ4725000 Ecological information epomis macrochirus (fish, fres a and other aquatic inverteb Anabaena variabilis (Algae) LO egradability: No data availate o data available cots: An environmental hazare Disposal consideration	n 0.1 pound) may cause rexposure over a long p hwater) LC50: 9,675 m rates: Daphnia magna 250: 23,565 mg/l/4 day ble Bioaccumula PBT and vPvi d cannot be excluded ir 15	e vomiting. period of time, result (g/l/96 hours (Crustacea) EC50: tive potential: No B assessment: No n the event of unpro	is in dehydraLition. 6,175 mg/l/16 hours data available o data available fessional handling o	r disposal.		
Aspiration hazard Potential health ef Inhalation: Inhalatio Ingestion: Ingestion Skin: Contact may Eyes: Contact may Signs and sympto Additional informa Section 12 Toxicity to fish: Le Toxicity to daphnia Toxicity to daphnia Toxicity to algae: A Persistence and d Mobility in soil: No Other adverse effe Section 13 These disposal gu	Data not available ffects: on of dust leaves salty taste with n of large amounts (more than cause very slight irritation. with a cause very slight irritation. mes of exposure: Gross over ation: RTECS #: VZ4725000 Ecological information epomis macrochirus (fish, fres a and other aquatic inverteb Anabaena variabilis (Algae) LO egradability: No data availate o data available cots: An environmental hazare Disposal consideration	n 0.1 pound) may cause rexposure over a long p hwater) LC50: 9,675 m rates: Daphnia magna 250: 23,565 mg/l/4 day ble Bioaccumula PBT and vPvi d cannot be excluded in 15 ne disposal of catalog	e vomiting. beriod of time, result g/l/96 hours (Crustacea) EC50: tive potential: No B assessment: No n the event of unpro g-size quantities o	is in dehydraLition. 6,175 mg/l/16 hours data available data available fessional handling o nly. Federal regul	r disposal. ations may a		container. State and/or loca emical disposal agency.
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Page E1 of E2

Section 1

Identification

# "Cutting edge science for the classroom"

by Aldon 221 Rochester Street Avon, NY 14414-9409 (585) 226-6177

## CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory and industrial use only.

Not for drug, food or household use.

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Water Sodium hydroxide		7732-18-5 1310-73-2	96% 4%	231-791-2 215-185-5	
Section 4	First aid measures				

**INGESTION:** MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SEVERE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire fighting measures

Suitable Extinguishing Media: Dry chemical, water spray, alcohol foam. Can react with carbon dioxide to form sodium carbonate.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Contact with metals can generate hydrogen gas.

## Section 6 Accidental release measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8	Exposure controls / personal protection					
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Linits.	Sodium hydroxide	STEL: C 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	STEL: C 2 mg/m <sup>3</sup>		

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHAnirator

Saction 1         Physical and chemical properties           Operance: Care, colorhess liquid.         Particle coefficient: (not capitable. Oper No addr. Core No addr. Core No addr. Core No addr. Core No addr. Debited profit:	Section 9							
Code:       Code: <thcode:< th=""> <thcode:< th=""> <thco< td=""><td></td><td>Physical and chemical pro</td><td>operties</td><td></td><td></td><td></td><td></td><th></th></thco<></thcode:<></thcode:<>		Physical and chemical pro	operties					
Chemical stability:       Stable       Hazardous polymerization:       Will not occur:         Conditions to avoid:       Can react with eaton dioxide to form sodium carbonate.       Incompatible materials: Melais, acids, organic compounds, organic nitro compounds.         Hazardous decomposition products:       Sodium available       Sodium hydroxide]         Sinc corrosoftrinization:       Nin : rabbit - Caule:       Sonia available         Sinc corrosoftrinization:       Nin : rabbit - Caule:       Sonia available         Respiratory or skin sensitization:       Data valiable       General available         Gener cell matagenicity:       Data not available       General available         Carcinogenity:       Data not available       General available       General available         Carcinogenity:       Data not available       General to 1% is identified as a known or anticipated carcinogen by NFP.         ARC:       CoSH:       No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NFRC:         CSH:       No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NFRC:         Carcinogenity:       Data not available       Sonia available       Sonia available         STOT-ingreg posture:       Data not available       Sonia available       Sonia available <td>Odor: No odor. Odor threshold: Not pH: Data not availabl Melting / Freezing po Boiling point: ~ 100</td> <td>applicable. e. <b>sint:</b> ~ 0°C (~ 32°F) [water] °C (212°F) [water]</td> <td>Flammability Explosion lim Vapor pressur Vapor density Relative dens</td> <td>solid/gas): Not applica its: Lower / Upper: Not e (mm Hg): 14 [water] (Air = 1): 0.7 [water] ty (Specific gravity): 1</td> <td>t applicable</td> <td>Auto-ignit Decompos Viscosity: Molecular</td> <td>ion temperature sition temperatu Data not availat formula: Mixtur</td> <th>: Not applicable ire: Data not available. ble. re</th>	Odor: No odor. Odor threshold: Not pH: Data not availabl Melting / Freezing po Boiling point: ~ 100	applicable. e. <b>sint:</b> ~ 0°C (~ 32°F) [water] °C (212°F) [water]	Flammability Explosion lim Vapor pressur Vapor density Relative dens	solid/gas): Not applica its: Lower / Upper: Not e (mm Hg): 14 [water] (Air = 1): 0.7 [water] ty (Specific gravity): 1	t applicable	Auto-ignit Decompos Viscosity: Molecular	ion temperature sition temperatu Data not availat formula: Mixtur	: Not applicable ire: Data not available. ble. re
Conditions to avoid: Can react with action dioxide to form sodium carbonite. Incompatible materials: Metals, acids, organic compounds, organic nitro compounds. Hazardous decomposition products: Sodium oxide. Reacts with metals to form finamable and explosive hydrogen gas. Socion 11 Toxicological information Acute toxicity: Data not available Serious say damage/infriation: Elves - rabbit - Gause severe burns 24 h [Sodium hydroxide] Respiratory or Sub not available Germ cell mutagenicity: Data not available MTP: No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogent; Dy OSHA: CB Prog 65. This product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by CSHA. CSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA. CSHA: May be harmful if inslated. Material is extremely destructive to the inscue of the mucous methades and subject present at levels greater than or equal to 1.1% is identified as a carcinogen by the component of this product present at levels as a carcin	Section 10	Stability and reactivity						
Azardous decomposition products:       Solution vide.       Reacts with metals to form flammable and explosive hydrogen gas.         Section 11       Toxicological information:       Section 21       Se	Conditions to avoid:	Can react with carbon dioxide	to form sodium	carbonate.	ill not occur.			
Acute toxicity:       Data not available         Skin corresolver, rabbit - Savere eye intration - 24 h [Sodium hydroxide]         Respiratory or skin sensitization: Data not available         Garcinogenity:       Data not available         Garcinogenity:       Data not available         Garcinogenity:       Data not available         Garcinogenity:       Data not available         NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.         IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product Present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product Present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This evolution:       Natarcinet available         Fortial hald       Bioaccurulable         Store Mary Internation:	•			•	and explosive hy	drogen gas.		
Skin corrosion/irritation:       Skin - rabbit - Causes severe burns 24 h [Sodium hydroxide]         Serious eye damage/irritation:       Eves regit relation - 24 h [Sodium hydroxide]         Respiratory or skin sensitization:       Data not available         Carcinogenity:       Data not available         Carcinogenity:       Data not available         Carcinogenity:       Data not available         Carcinogenity:       Data not available         CSR-A to component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by OSRA.         Car Prog 65:       This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.         Reproductive desposure:       Data not available         STOT-repeated exposure:       Data not available         Application hazard:       Data not available         Potential healtin effects:       Inhalanci. Alay be harmful if inhaled. Material is extremely destructive to the tissue of the nuccus membranes and upper respiratory tract.         Ingestion:       May be harmful if swallowed.         Stringe toxing to exposure:       Spasan, inflammation and edema of the larynx, spasan, inflammation and edema of the bronchi, pneumonitis, pulmonary         Gedera, burning swallowed.       Spasan symptoms of exposure:       Spasan, inflammation ECS - Daphnia - 40.38 mg/l - 48 h [Sodium hydroxide]	Section 11	Toxicological information						
Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h [Sodium hydroxide]         Toxicity to daphnia and other aquatic invertebrates: Immobilization EC50 - Daphnia - 40.38 mg/l - 48 h [Sodium hydroxide]         Toxicity to algae: No data available       Bioaccumulative potential: No data available         Persistence and degradability: No data available       Bioaccumulative potential: No data available         Mobility in soil: No data available       PBT and vPvB assessment: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal considerations         These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations or contract with a licensed chemical disposal agency.         Section 14       Transport information         UN/NA number: UN1824       Shipping name: Sodium hydroxide solution         Hazard class: 8       Packing group: II         Reportable Quantity: 1,000 lbs (454 kg)       Marine pollutant: No         Exceptions: Limited quantity equal to or less than 1 L       2020 ERG Guide # 154         Section 15       Regulatory information         Achemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.         Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       CA Prop 65	Carcinogenity: Data NTP: No component I IARC: No component OSHA: No component Ca Prop 65: This proc Reproductive toxicit STOT-single exposu STOT-repeated expo Aspiration hazard: I Potential health effe Inhalation: May be ha Ingestion: May be ha Skin: May be harmfu Eyes: Causes eye bu Signs and symptom edema, burning sensi and upper respiratory Additional informati	a not available of this product present at levels of this product present at levels to f this product present at levels to f this product present at level but does not contain any chem ty: Data not available tre: Data not available Data not available Cts: armful if inhaled. Material is extr rmful if swallowed. I if absorbed through skin. Caus s of exposure: Spasm, inflam ation, cough, wheezing, laryngit tract, eyes, and skin. on: RTECS #: WB4900000 [S	s greater than or Is greater than o icals known to th remely destructiv ses skin burns. mation and eder is, shortness of	equal to 0.1% is identifi r equal to 0.1% is identifi ne State of California to o re to the tissue of the mu na of the larynx, spasm, breath, headache, nause	ed as probable, po ied as a carcinoge ause cancer or re cous membranes inflammation and	essible or confi en or potential productive tox and upper res edema of the	rmed human car carcinogen by O icity. piratory tract. bronchi, pneumo	nitis, pulmonary
Section 13       Disposal considerations         These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or lot regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.         Section 14       Transport information         UN/NA number:       UN1824       Shipping name:       Sodium hydroxide solution         Hazard class:       8       Packing group:       II       Reportable Quantity:       1,000 lbs (454 kg)       Marine pollutant:       No         Exceptions:       Limited quantity equal to or less than 1 L       2020 ERG Guide #       154         Section 15       Regulatory information         A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.         Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       CA Prop 65         Sodium hydroxide       Listed       1,000 lbs (454 kg)       D002       Listed       This product does not contai any chemicals known to the state on the formation any chemicals known to the state on t	Toxicity to fish: LC5 Toxicity to daphnia a Toxicity to algae: No Persistence and deg Mobility in soil: No o	0 - Gambusia affinis (Mosquito and other aquatic invertebrate data available radability: No data available data available	es: Immobilization Bioaccum PBT and v	n EC50 - Daphnia - 40.3 ulative potential: No d PvB assessment: No d	8 mg/l - 48 h [Sod ata available lata available	-	]	
regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a ficensed chemical disposal agency. Section 14 Transport information UN/NA number: UN1824 Shipping name: Sodium hydroxide solution Hazard class: 8 Packing group: II Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: Limited quantity equal to or less than 1 L 2020 ERG Guide # 154 Section 15 Regulatory information A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. Component TSCA CERLCA (RQ) RCRA code DSL NDSL CA Prop 65 Sodium hydroxide Listed 1,000 lbs (454 kg) D002 Listed Not listed This product does not contail any chemicals known to the state of the state					5			
UN/NA number: UN1824       Shipping name: Sodium hydroxide solution         Hazard class: 8       Packing group: II       Reportable Quantity: 1,000 lbs (454 kg)       Marine pollutant: No         Exceptions: Limited quantity equal to or less than 1 L       2020 ERG Guide # 154       154         Section 15       Regulatory information       Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       CA Prop 65         Sodium hydroxide       Listed       1,000 lbs (454 kg)       D002       Listed       Not listed       This product does not contail any chemicals known to the termicals known to the termical known to		different. Dispose of in acco						
Section 15         Regulatory information           A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.           Component         TSCA         CERLCA (RQ)         RCRA code         DSL         NDSL         CA Prop 65           Sodium hydroxide         Listed         1,000 lbs (454 kg)         D002         Listed         Not listed         This product does not contain any chemicals known to the second sec	Section 14	mansport information						
ComponentTSCACERLCA (RQ)RCRA codeDSLNDSLCA Prop 65Sodium hydroxideListed1,000 lbs (454 kg)D002ListedNot listedThis product does not contain any chemicals known to the state of	UN/NA number: Hazard class: 8	Packing g	roup: II	Reportab		)00 lbs (454	kg) Ma	arine pollutant: No
Sodium hydroxide     Listed     1,000 lbs (454 kg)     D002     Listed     Not listed     This product does not contain any chemicals known to the second s	UN/NA number: 0 Hazard class: 8 Exceptions: Limit	Packing g ted quantity equal to or less	roup: II	Reportab		000 lbs (454	kg) Ma	arine pollutant: No
Solidin Hydroxide Listed 1,000 ibs (+3+ Kg) 2002 Listed Not listed any chemicals known to the	UN/NA number: Hazard class: 8 Exceptions: Limi Section 15 A chemical is considered	Packing g ted quantity equal to or less Regulatory information to be listed if the CAS number for t	roup: II than 1 L	Reportabl 2020 ERG	Guide # 154	,		
reproductive toxicity.	UN/NA number: Hazard class: 8 Exceptions: Limi Section 15 A chemical is considered Compone	Packing g ted quantity equal to or less Regulatory information to be listed if the CAS number for t	roup: II than 1 L	Reportabl 2020 ERG n is on the Inventory list. CERLCA (RQ)	Guide # 154 RCRA code	,	NDSL	CA Prop 65