. 65980 SDS No.: AA0015

SB 49917 SB 52631 L STORAGE CODE GREEN GENERAL S V 4002830 Page E1 of E2

Section 1 **Chemical Product and Company Identification**

Innovating Science[®] by Aldon Corporation "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 use only. Not for drug, food or household use

Product ACETIC ACID, 0.1 MOLAR SOLUTION	
Synonyms Acetic Acid, Water Solution	
Section 2 Hazards Identification	
Signal word: WARNING Pictograms: No symbol required Target organs: None known GHS Classification: Eye irritation (Category 2B) GHS Label information: Hazard statement: H320: Causes eye irritation.	Precautionary statement: P264: Wash hands thoroughly after handling. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Chemical Name	CAS #	%	EINECS	
Water Acetic acld	7732-18-5 64-19-7	99.41% 0.59%	231-791-2 200-580-7	
ection 4 First Ald Measures	and the second second second		10	

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. 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: 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. This chemical may react violently with strong oxidizers, generating a fire and explosion hazard. May react violently with strong bases, strong acids and many other compounds.

Accidental Release Measures Section 8

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.

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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		
-	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	Acetic acid	TWA: 25 mg/m ³ STEL: 37 mg/m ³	TWA: 25 mg/m ³	TWA: 25 mg/m3 STEL: 37 mg/m3

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 respirator.

Section 9	Physical & Chemical	Properties				Same and a second	
Appearance: Cle Odor: Vinegar-like Odor threshold: pH: Data not avai Melting / Freezing po	ar, colorless liquid. e odor. Data not available. lable. int: Approximately 0°C (32°F) (wal proximately 100°C (212°F) (wal	Evaporation Flammability Explosion lin Vapor pressu ter) Vapor density Relative density	rate (Water = 1): <1 (solid/gas): Data not a (fts: Lower / Upper: D rre (mm Hg): 14 (water y (Air = 1): 0.7 (water) y (Specific gravity): Appro): Complete in water.	eata not available)	Auto-igniti Decompos Viscosity: Molecular		: Data not available re: Data not available. le.
Section 10	Stability & Reactivity			in the second second			
Chemical stability		Hazard	ous polymerization: V ation.	Vill not occur.			
reaction with aceta	aldehyde and acetic anhydrid	te. Ignites on contact	with petassium-tert-boto	oxide.			some metals. Potentially viole
Hazardous decon	nposition products: Carbo	n monoxide, hydroger	n sulfide and other harm	ful gases or vapors in	nduding oxide	es and/or other co	ompounds of sulfur and sodium
Section 11	Toxicological Inform	ation					
IARC: No compon OSHA: No compon Reproductive tox STOT-single expo STOT-repeated ex Aspiration health ex Inhalation: May be Inhalation: May be Skin: Contact with Eyes: Contact with	ant of this product present at event of this product present at nent of this product present a dicity: Data not available osure: Data not available xposure: Data not available d: Data not available affects: e harmful if inhaled. e harmful if swallowed. h skin may cause irritation ar th eyes may cause redness a coms of exposure : See Pol	t levels greater than o at levels greater than o e and dryness. and pain.	r equal to 0.1% is identif or equal to 0.1% is ident	fied as probable, pos ified as a carcinogen	sible or confir	med human carc arcinogen by OS	
Additional inform	Ecological Information		al]				
Toxicity to daphn Toxicity to algae: Persistence and o Mobility in soil: M	Gambusia affinis (fish, fresh ia and other aquatic invert Euglena gracilis (Algae), EC degradability: Easily biode No data available fects: An environmental haz Disposal Considerat	tebrates: Daphnia ma C100 = 720 mg/L [Acel gradable Bioaccum PBT and bioaccum card cannot be excluded	gna (Crustacea), EC50 tic acid, glacial] nulative potential: Not vPvB assessment: No	= 95 mg/L/24 hours [expected to bioaccur data available	mulate	lacial)	
These disposal g	uidelines are intended for	the disposal of cata	alog-size quantities or	nly. Federal regula	tions may ap	oply to empty co	ontainer. State and/or local
Bection 14	be different. Dispose of in Transport Information			a regulations or c	ontract with	a noensed che	nical disposal agency.
	 Not applicable Not applicable 	Shipping name: Packing group: 1 2016 ERG Guide #	Not Regulated Not applicable	Reportable Qua	ntity: No	Ma	rine pollutant: No
Section 15	Regulatory Information						
	red to be listed if the CAS numb			DODA costs	Del	MOR	
Compo Acetic acid, glacial		Listed	CERLCA (RQ) 5,000 lbs (2270 kg)	RCRA code D001, D002	DSL Listed	NDSL Not listed	
		1			i		
Section 16	Other Information						
Section 16 The information conta	ained herein is furnished without	warranty of any kind. Er	nployers should use this in	formation only as a sup	plement to othe	r Information gathe	red by them and must make indep NTP: National Toxicology Progra

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SAFETY DATA SHEET

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Innovating Science[®] by Aldon Corporation "cutting edge science for the classroom"

on 221 Rochester Street Avon, NY 14414-9409 (585) 226-6177 CHEMTREC 24 Hour Emergency

Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

Product AMMONIUM HYDROXIDE, 0.2 MOLAR (0.2 NORMAL) Ammonium Hydroxide, Water Solution Synonyms Hazards Identification Section 2 Signal word: WARNING Pictograms: GHS07 / GHS09 Precautionary statement: P264: Wash hands thoroughly after handling P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. Target organs: Eyes, Skin, Mucous membranes P302+P352: IF ON SKIN: Wash with plenty of water and soap. P332+P313: If skin irritation occurs: Get medical attention. <12 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **GHS Classification:** P337+P313: If eye irritation persists: Get medical attention. P362+P364: Take off contaminated clothing and wash it before reuse. Skin irritation (Category 2) Eye irritation (Category 2A) P391: Collect spillage. Acute aquatic (Category 1) PS01: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations. GHS Label Information: Hazard statement: H315: Causes skin irritation. H319: Causes serious eye irritation. H400: Very toxic to aquatic life

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm. Section 3 Composition / Information on Ingredients

Chemical Name		CAS #	%	EINECS	
Water Ammonium hyd	Iroxide (as Ammonia)		proximately 98.99% proximately 1.11%	231-791-2 215-647-6	
Section 4	First Ald 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: 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 SERIOUS 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: CAUSES 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.

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.

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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/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 P	rotection		and the second
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIO8H (REL)
Exposure Limits.	Ammonia CAS No. 7664-41-7	TWA: 17 mg/m ³ ; STEL: 24 mg/m ³	TWA: 50 ppm, 35 mg/m ³	TWA: 18 mg/m ³ ; STEL: 27 mg/m ³

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 1 Physical & Chemical Properties Oder Strong ammonia oder. Oder Strong ammonia oder. Partition contents liquid. Oder Strong ammonia oder. Oder Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Oder Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Oder Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Oder Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Strong ammonia oder. Strong ammonia oder. Partition contents liquid. Condition of available ammonia hydroxide, anhydroxid. Partition contents liquid. Partition contents liquid. Strong ammonia oder oder oder partition strong a	approved respirate	or.						
Oder Strong ammonia doct. Oder threshold: Lab not available. Auto-laptite not available. Auto-laptite not available. Auto-laptite not available. Auto-laptite not available. App: Data not available. App: pressure (rm. Rg): 14 (water) Macro available. Auto-laptite not available. Auto-laptite not available. App: Data Data not available. App: pressure (rm. Rg): 14 (water) Macro available. Auto-laptite not available. Macro available. App: Data Data Data Data Data Data Data Dat	Section 9	Physical & Chemical Prop	perties	allow -		-		
Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Excessive temperatures which datase exponsion. Incompatible materials: Adds, storego oddizers, halograme halos. Hazardous decomposition products: Decomposes to emmonia gas and above 450°C (842°F) to hydrogen gas and nitrogen oxides. Section 11 Toxicological Information Acute toxicity: Contart LDS0: 50 mg/kg (Ammonium hydroxide, anhydrous) Shin corrosion/infinition: Data not available Germinant and the sensitization: Data not available Germinant of this product present at levels greater than or equal to 0.1% is identified as a norwn or anticipated carcinogen by NTP: ARC: 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. Reproductive boxidity: Data not available Start and available STOT-ingle exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with nacocic effects. STOT-ingle exposure: Teal or available Expenductive boxidity. Data not available Stere Redness, bin burns, and boxidide, anhydroxid Bateria: formation by the data is a result of spasm. Information and dense of the laryox and boxidit, chemical pneumonits and pulmonary adema. Stere Redness, bin burns, abdominal gain, sore throat, vomiting. Bateria: formation for available Developmenit and available Spine and available Deva	Odor: Strong am Odor threshold: pH: Data not ava Melting / Freezing po Boiling point: App	rnonia odor. Data not available. ilable. int: Approximately 0°C (32°F) (water) proximately 100°C (212°F) (water)	Flammability Explosion lin Vapor pressi Vapor densit Relative densit	(solid/gas): Data not nits: Lower / Upper: ure (mm Hg): 14 (wate y (Air = 1): 0.7 (water) ty (Specific gravity): App	Data not available r)	Auto-Ignit Decompo Viscosity: Molecular	tion temperature: sition temperature : Data not available r formula: Mixture	Data not available e: Data not available. e.
Conditions to avoid: Excessive temperatures which cause evaporation. Incompatible materials: Acids, strong oxidizers, halogens, heavy metals. Hazardous decomposition products: Decomposes to ammonia gas and above 450°C (442°F) to hydrogen gas and nitrogen oxides. Section 11 Toxicological Information Acute toxicity: Crait-rait LD50: S50 mg/kg [Ammonium hydroxide, anhydrous] Shin corrosion/infritation: Data not available Respiratory or skin sensitization: Data not available Garcinogenity: Data not available STOT-single exposure: The ubstance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects. STOT-sepested exposure: Data not available Garcinogenity: Bata not available Garcinogenity: Data not available Garcinogenity: Bata n	Section 10	Stability & Reactivity	-					
Acute toxicity: Orarisat LDS:: 350 mg/kg [Ammonium hydroxide, anhydrous] Skin corrosion/irritation: Data not available Serious eved amage/irritation: Data not available Gern cell mutagenicity: Data not available Gern cell mutagenicity: Data not available Carcinogenity: Data not available Carcinogenity: Data not available Carcinogenity: Data not available Strine: Advisord Strine: Advisord <td>Conditions to ave Incompatible ma</td> <td>old: Excessive temperatures white terlals: Acids, strong oxidizers, hit</td> <td>ch cause evapor alogens, heavy r</td> <td>ation. netals.</td> <td></td> <td>as and nitroge</td> <td>en oxides.</td> <td></td>	Conditions to ave Incompatible ma	old: Excessive temperatures white terlals: Acids, strong oxidizers, hit	ch cause evapor alogens, heavy r	ation. netals.		as and nitroge	en oxides.	
Skin corosion/irritation: Data not available Respiratory or skin sensitization: Data not available Gern cell mutagenicity: Data not available Carcinogenity: Data not available REPARATION: Data not available TP: 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. ARC: 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. Reproductive toxicity: Data not available STO1-reparde exposure: Data not available Approductive toxicity: Data not available Approtation hazard: Data not available Skin: Redness, skin burns, pain, billeters, information information, information and edma of the anynx and bronch, chemical pneumonitis and plumonary edema. Additional formation: RTECS #: BOg825000 (Ammonium hydroxide, anhydrous] Skin: Redness, skin burns, pain, billeters, information Toxicity to daphnia and other aquatic linearchares (bluegit) 0.024-0.093 mg/L/48H Toxicity to daphnia and other aqu	Section 11	Toxicological Information						
Toxicity to fish: LC50 Lepomis macrochirus (bluegiil) 0.024-0.093 mg/L/48H Toxicity to daphnia and other aquatic invertebrates: LC50 Daphnia magna (water flea) 0.66 mg/L/48H @ 22°C Toxicity to algae: TLm Diatom (algae) 420 mg/L/120H @ 22°C (50% growth reduction) Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soll: 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 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 (US DOT / CANADA TDG) UN/NA number: Not applicable Shipping name: Not applicable Reportable Quantity: Yes Marine pollutant: No Exceptions: Not applicable 2012 ERG Guide # Not applicable Reportable Quantity: Yes Marine pollutant: No Exceptions: Not applicable 2012 ERG Guide # Not applicable Not applicable Not applicable Section 15 Regulatory Information CERLCA (RQ) RCRA code DsL Not listed </td <td>NTP: No compone IARC: No compone OSHA: No compone STOT-single expo STOT-repeated e Aspiration hazar Potential health Inhalation: Burnin Ingestion: Abdom Skin: Redness, si Eyes: Redness, p Signs and sympt skin. Inhalation m</td> <td>ent of this product present at levels ent of this product present at level ent of this product present at level distribution of this product present at level distribution of the substance or mixture xposure: Data not available d: Data not available d: Data not avail</td> <td>Is greater than o els greater than is classified as s hhydrous] hing, shortness throat, vomiting thremely destructi nflammation and</td> <td>r equal to 0.1% is ident or equal to 0.1% is iden apecific target organ tox of breath, sore throat, , we to tissue of the mucc edema of the larynx ar</td> <td>ified as probable, po tified as a carcinoge icant, single exposur</td> <td>ssible or confi n or potential re, category 3 ver respiratory</td> <td>rmed human carcin carcinogen by OSH with narcotic effect</td> <td>tA. is. nd digestive tracts, eyes and</td>	NTP: No compone IARC: No compone OSHA: No compone STOT-single expo STOT-repeated e Aspiration hazar Potential health Inhalation: Burnin Ingestion: Abdom Skin: Redness, si Eyes: Redness, p Signs and sympt skin. Inhalation m	ent of this product present at levels ent of this product present at level ent of this product present at level distribution of this product present at level distribution of the substance or mixture xposure: Data not available d: Data not available d: Data not avail	Is greater than o els greater than is classified as s hhydrous] hing, shortness throat, vomiting thremely destructi nflammation and	r equal to 0.1% is ident or equal to 0.1% is iden apecific target organ tox of breath, sore throat, , we to tissue of the mucc edema of the larynx ar	ified as probable, po tified as a carcinoge icant, single exposur	ssible or confi n or potential re, category 3 ver respiratory	rmed human carcin carcinogen by OSH with narcotic effect	tA. is. nd digestive tracts, eyes and
Toxicity to daphnia and other aquatic invertebrates: LC50 Daphnia magna (water flea) 0.66 mg/L/48H @ 22°C Toxicity to algae: TLm Diatom (algae) 420 mg/L/120H @ 22°C (50% growth reduction) Persistence and degradability: No data available Bioaccumulative potential: 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 (US DOT / CANADA TDG) UN/NA number: Not applicable Shipping name: Not Regulated Hazard class: Not applicable Packing group: Not applicable Exceptions: Not applicable 2012 ERG Guide # Not applicable Regulatory information US202 C Vehencial 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 Not listed Ammonium hydroxide Listed 1,000 lbs (454 kg) Not listed Listed Not listed	Section 12	Ecological Information		and the second				
Hazard class: Not applicable Packing group: Not applicable Reportable Quantity: Yes Marine pollutant: No Exceptions: Not applicable 2012 ERG Guide # Not applicable Reportable Quantity: Yes Marine pollutant: No Section 15 Regulatory Information Adventical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. Not Exceptions: Not applicable NDSL Component TSCA CERLCA (RQ) RCRA code DSL NDSL Ammonium hydroxide Listed 1,000 lbs (454 kg) Not listed Listed Not listed	Toxicity to daphn Toxicity to algae: Persistence and d Mobility in soil: M Other adverse eff Section 13 These disposal g regulations may	ia and other aquatic invertebrat TLm Diatom (algae) 420 mg/L/12 degradability: No data available No data available lects: An environmental hazard co Disposal Considerations uidelines are intended for the be different. Dispose of in account	es: LC50 Daphr OH @ 22°C (509 Bioaccun PBT and annot be exclude disposal of cata ordance with a	hia magna (water flea) (% growth reduction) nulative potential: No vPvB assessment: No ed in the event of unpro alog-size quantities o Il local, state and fede	data available data available fessional handling or nly. Federal regula	disposal.	pply to empty con a licensed chem	ntainer. State and/or loca ical disposal agency.
Component TSCA CERLCA (RQ) RCRA code DSL NDSL Ammonium hydroxide Listed 1,000 lbs (454 kg) Not listed Listed Not listed	Hazard class: I Exceptions: N Section 15	Not applicable Pack ot applicable 2012 Regulatory Information	ing group: M ERG Guide #	Not applicable Not applicable	Reportable Qua	ntity: Yes	Mari	ine pollutant: No
					RCRA code	DSL	NDSL	
Section 16 Other Information	Ammonium hydrox	tide	Listed	1,000 lbs (454 kg)	Not listed	Listed	Not listed	
	jection 16	Other Information			1	1	1	
The Information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make in tent 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 Pr	The Information conte	ained herein is furnished without warran	nty of any kind. Er	nployers should use this in	formation only as a sup	plement to othe	er information gathere	d by them and must make inde

Section 1	Chemical Product and Cor	nnany identification		Page E1 of E2
nnov	ating Science [®] by Alder Sting edge science for the class	on Corporation 221 Rochester	14-9409	CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.
Product	CALCIUM HYDROXIDE, 0.1 MOLAR	SOLUTION	(A. M)	
Synonyms	Calcium Hydroxide, Water Solution			
Section 2	Hazards Identification			
Chemicals. Signal word Pictograms Target orga GHS Classif Eye irritation GHS Label i	ally Harmonized System (GHS) of Clas I: WARNING : None required ns: None known fication: (Category 2B) Information: Hazard statement(s): as eye irritation.		P305+P351+P33 Remove contact I	Is thoroughly after handling. 8: IF IN EYES: Rinse cautiously with water for several minutes. lenses, if present and easy to do. Continue rinsing. re irritation persists: Get medical attention.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Chemical Name	CAS #	%	EINECS
Water Calcium hydroxide	7732-18-5 1305-62-0	99.26% 0.74%	231-791-2 215-137-3
Section 4 First Aid 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.

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.

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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)
	Calcium hydroxide	TWA: 5 mg/m ³	TWA: 5 mg/m ³ respirable fraction	TWA: 5 mg/m ³

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 respirator.

Appearance: Clear, c Odor: No odor. Odor threshold: Datu pH: 13.0 Metting / Freezing point: /		operties					and the second
	a not available. Approximately 0°C (32°F) (water) mately 100°C (212°F) (water)	Flammability (Explosion limi Vapor pressur Vapor density Relative density	tte { Water = 1): <1 solid/gas): Data no ts: Lower / Upper: e (mm Hg): 14 (water (Air = 1): 0.7 (water (Specific gravity): App : Complete in water.	Data not available er)	Auto-ignit Decompos Viscosity: Molecular		Data not available re: Data not available. le.
Section 10	Stability & Reactivity						
Incompatibilities with	Stable Excessive temperatures wh h other materials: Strong a sition products: None kno	nich cause evapora cids, fluorine.	bus polymerization: tion.	Will not occur.			
Section 11	Toxicological Informatio	n					
	rat LD50: 7,340 mg/kg [Calci						
Germ cell mutagenic Carcinogenity: Data NTP: No component of IARC: No component OSHA: No component SHO: No component STOT-repeated expo Aspiration hazard: D Potential health effect Inhalation: May be ha Ingestion: May be ha Ingestion: May be hau Skin: May cause irrita Sys: May cause irrita Signs and symptoms not available. Exercis	of this product present at leve of this product present at leve t of this product present at leve y: Data not available sure: Data not available sure: Data not available cts: trmful if inhaled. trmful if swallowed. ttion.	els greater than or e els greater than or vels greater than o of our knowledge th minimize potential	equal to 0.1% is ider equal to 0.1% is ide e chemical, physical hazards.	tilfied as probable, pos intified as a carcinogen	sible or confi	rmed human carci carcinogen by OS	HA.
Section 12	Ecological Information						
Toxicity to algae: No Persistence and deg Mobility in soil: No d	nd other aquatic invertebra data available radability: No data available	Bioaccumu PBT and vi	ulative potential: No PvB assessment: N	lo data available	disposal.		
Section 13	Disposal Considerations						
hese disposal guid	elines are intended for the different. Dispose of in ac	disposal of catal	og-size quantities	only. Federal regulations or o	tions may a	pply to empty co	intainer. State and/or loc
UNDERFORMENT OF L	Transport Information (and a first second s	and the second se	and regulations of 0	Statust man		most alapoodi agency.
and the second se	lot applicable Shi	pping name: N king group: N	ot applicable	Reportable Quar	ntity: No	Ma	rine pollutant: No
Section 14 UN/NA number: N Hazard class: Not Exceptions: Not a	applicable 201	2 ERG Guide #	Not applicable				
Section 14 UN/NA number: M Hazard class: Not Exceptions: Not a Section 15	Applicable 201 Regulatory Information	2 ERG Guide #					
Section 14 UN/NA number: N Hazard class: Not Exceptions: Not a Section 15 Inchemical is considered to	applicable 201 Regulatory Information to be listed if the CAS number for	2 ERG Guide #	is on the Inventory list.	BCDA code	Del	NOSI	1
Section 14 UN/NA number: N Hazard class: Not Exceptions: Not a Section 15 A chemical is considered to Component	applicable 201 Regulatory Information to be listed if the CAS number for	2 ERG Guide #		RCRA code Not listed	DSL Listed	NDSL Not listed	
Section 14 UN/NA number: N Hazard class: Not Exceptions: Not a Section 15 A chemical is considered to	applicable 201 Regulatory Information to be listed if the CAS number for	2 ERG Guide # r the anhydrous form TSCA	is on the Inventory list. CERLCA (RQ)				

CORROSIVE STORAGE CODE WHITE

Section 1	Chemical Product and Company Identific	cation	Page E1 of E2
	ating Science [®] by Aldon Corporation tting 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 use only. Not for drug, food or household use.
Product	HYDROCHLORIC ACID, 0.2 MOLAR (0.2 NORMAL) S	OLUTION	
Synonyms	Muriatic Acid, Water Solution ; Hydrogen Chloride, Water	er Solution	
Section 2	Hazards identification	-11	
Globally Ha Chemicals. Signal worr Pictograms Target orga GHS Class Skin irritant Eye irritant i GHS Label Hazard stai H316: Caus	d: WARNING s: None required ans: Respiratory system, skin, eyes, lungs. ification: (Category 3) (Category 2B) information:	ng of	Precautionary statement(s): P264: Wash hands thoroughly after handling. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several 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.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Informa	tion on Ingredients				
Chemical Name	CAS#	%	EINECS		
Water Hydrochloric acid	7732-18-5 7647-01-0	99.37% 0.63%	231-791-2 231-595-7		
Section 4 First Ald Measures				. Jan	- H

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: Neutralize spill with sodium bicarbonate or calcium hydroxide, 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.

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Page E2 of E2

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 Pro	stection		
European Limiter	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	Hydrogen chloride	STEL: C 2 ppm / C 2.98 mg/m ³	STEL: C 5 ppm / C 7 mg/m ³	STEL: C 5 ppm / C 7 mg/m ³

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-

Toxicity to fish: LC50 - Gambusia affir Toxicity to daphnia and other aquatic Toxicity to algae: No data available Persistence and degradability: No data Mobility in soil: No data available Other adverse effects: An environmer Section 13 Disposal Cons These disposal guidelines are intender regulations may be different. Disposed	2°F) [water] [water] burst when h is, active meta Hydrogen ch information vailable at this not available ata not available ata not available essent at levels ts carcinogeni present at levels ts carcinogeni ts carcino	Evaporation ra Flammability (Explosion limi Vapor pressur Vapor density Relative densi Solubility(ies): Hazardo eated. Avoid cor als, alkali metals, hloride gas. dilution. at this dilution. ble s greater than or icity to humans. els greater than or icity to humans.	equal to 0.1% is ident or equal to 0.1% is ident or equal to 0.1% is ide physical and toxicolo the tissue of the muc	available. International and available. International	Auto-igniti Decompos Viscosity: Molecular t Molecular t rbonates, cyani n or potential ca gen or potential	on temperature: ition temperatur Data not availab formula: Mixture weight: Mixture des, sulfides, sulf arcinogen by NTF carcinogen by O roughly investigat	e Ifites, P. SHA.
Odor: Pungent odor. Odor threshold: Data not available. pH: N/A Metting / Freezing point: Approx. 0°C (32 Boiling point: Approx. 100°C (212°F) Flash point: Not flammable. Section 10 Stability 2 Real Chemical stability: Stable Conditions to avoid: Containers may Incompatible materials: Metals, base: formaldehyde. Hazardous decomposition products: Section 11 Acute toxicity: Data not available Skin corrosion/irritation: Data not available Skin corrosion/irritation: Data not available Skin corrosion/irritation: Data not available Nin component of this product precedures to its of a not available NTP: No component of this product precedures to its of SHA: No component of this product precedures to min inhalation: May be harmful if swallowed StoT-single exposure: Data not available Potential health effects: To the best of Exercise appropriate procedures to min inhalation: May be harmful if swallowed Skin: May cause irritation and/or burns Eyes: May cause irritation and/or burns Eyes: May cause irritation and/or burns Signs and symptoms of exposure: Data not available Portital information: RTECS #: M Secti	[water] activity burst when h is, active meta Hydrogen cl information vailable at this not available ata not available ata not available essent at levels is carcinogeni oresent at	Flammability (Explosion limi Vapor pressur Vapor density Relative densi Solubility (les): Hazardo eated. Avoid cor als, alkali metals, hloride gas. dilution. at this dilution. ble s greater than or icity to humans. els greater than or icity to humans.	solid/gas): Data not ts: Upper/Lower: D e (mm Hg): 14 [wate (Air = 1): 0.7 [water] ty (Specific gravity): : Soluble in water. outs polymerization: ntact with water. oxidizing agents, hyd equal to 0.1% is ident or equal to 0.1% is ident or equal to 0.1% is ident or equal to 0.1% is ident on the tissue of the muc	available. International and available. International	Auto-igniti Decompos Viscosity: Molecular t Molecular t rbonates, cyani n or potential ca gen or potential	on temperature: ition temperatur Data not availab formula: Mixture weight: Mixture des, sulfides, sulf arcinogen by NTF carcinogen by O roughly investigat	: Data not available. re: Data not available. ole. e fites, P. SHA.
Chemical stability: Stable Conditions to avoid: Conlainers may Incompatible materials: Metals, bases formaldehyde. Hazardous decomposition products: Section 11 Toxicological II Acute toxicity: Data not available Skin corrosion/irritation: Data not av Serious eye damage/irritation: Data not av Serious eye damage/irritation: Data not av Serious eye damage/irritation: Data not av Germ cell mutagenicity: Data not available NTP: No component of this product pre IARC: Group 3: Not classifiable as to it OSHA: No component of this product pre Reproductive toxicity: Data not available STOT-single exposure: Data not available Potential health effects: To the best of Exercise appropriate procedures to min Inhalation: May be harmful if inhaled. If 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: D Additional information: RTECS #: M Section 12 Ecological Info Toxicity to fish: LC50 - Gambusia affit Toxicity to fish: LC50 - Gambusia affit Toxicity to signe: No data available Persistence and degradability: No dat Mobility in soil: No data available Other adverse effects: An environmer Section 13 Disposal Coms These disposal guidelines are intender egulations may be different. Dispos Section 14 Transport Info	burst when h s, active meta Hydrogen ch information railable at this not available ata not available ata not available ata not available assent at levels ts carcinogeni present at levels ts carcinogeni ts carcinogeni	eated. Avoid cor als, alkali metals, hloride gas. dilution. at this dilution. ble s greater than or licity to humans. els greater than or licity to humans. els greater than or liution. dge the chemical al hazards. cause irritation to able at this dilution	ntact with water. oxidizing agents, hyd equal to 0.1% is ident or equal to 0.1% is iden , physical and toxicolo o the tissue of the muc	troxides, amines, ca tified as a carcinoge entified as a carcinog	n or potential ca gen or potential ve not been thor	arcinogen by NTF carcinogen by O: roughly investigat	P. SHA.
Conditions to avoid: Containers may Incompatible materials: Metals, bases formaldehyde. Hazardous decomposition products: Section 11 Toxicological In Acute toxicity: Data not available Skin corrosion/irritation: Data not ava Serious eye damage/irritation: Data not ava Gespiratory or skin sensitization: Data Germ cell mutagenicity: Data not available NTP: No component of this product pre IARC: Group 3: Not classifiable as to it OSHA: No component of this product pre IARC: Group 3: Not classifiable as to it OSHA: No component of this product pre Exproductive toxicity: Data not available Potential health effects: To the best of Exercise appropriate procedures to min Inhalation: May be harmful if inhaled. It Ingestion: May be harmful if swallowed Skin: May cause irritation and/or burns Eyes: May cause irritation and/or burns Eyes: May cause irritation and/or burns Eyes: May cause irritation and/or burns Signs and symptoms of exposure: D Additional information: RTECS #: M Section 12 Ecological Info Toxicity to fish: LC50 - Gambusia affir Toxicity to algae: No data available Presistence and degradability: No dat Mobility in soil: No data available Other adverse effects: An environmer Section 13 Disposal Coms These disposal guidelines are intendor egulations may be different. Dispose Section 14	s, active meta Hydrogen ch information vailable at this not available ata not available ata not available ailable sesent at levels ts carcinogeni present at levels ts carcinogeni the second the second table ts carcinogeni the second the secon	eated. Avoid cor als, alkali metals, hloride gas. dilution. at this dilution. ble s greater than or licity to humans. els greater than or licity to humans. els greater than or liution. dge the chemical al hazards. cause irritation to able at this dilution	ntact with water. oxidizing agents, hyd equal to 0.1% is ident or equal to 0.1% is iden , physical and toxicolo o the tissue of the muc	troxides, amines, ca tified as a carcinoge entified as a carcinog	n or potential ca gen or potential ve not been thor	arcinogen by NTF carcinogen by O: roughly investigat	P. SHA.
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Section 11 Toxicological In Acute toxicity: Data not available Skin corrosion/irritation: Data not av Serious eye damage/irritation: Data Respiratory or skin sensitization: Data Germ cell mutagenicity: Data not available NTP: No component of this product pre IARC: Group 3: Not classifiable as to it OSHA: No component of this product pre Peproductive toxicity: Data not available STOT-single exposure: Data not available Potential health effects: To the best of Exercise appropriate procedures to min Inhalation: May be harmful if inhaled. If Ingestion: May be harmful if swallowed Skin: May cause irritation and/or burns Eyes: Nay cause irritation and/or burns Eyes: Nay cause irritation and/or burns Eyes: Nay cause irritation and/or burns Eyes: May cause irritation and/or burns Eyes: May cause irritation and/or burns Eyes: Nay cause irritation and/or burns Eyes: Not alable Other adverse effects: An environmer Saction 13 Disposal Coms These disposal guidelines are interor regulations may be different. Dispos Saction 14 Transport Info UN/NA number: Not applicable Hazard class: Not applicable	information railable at this not available ata not available alable at a not available assent at levels ts carcinogeni present at level able at this d vivailable of our knowled imize potentii Material may d.	dilution. at this dilution. ble s greater than or icity to humans. els greater than o ilution. dge the chemical al hazards. cause irritation to able at this dilutio	or equal to 0.1% is ide , physical and toxicolo o the tissue of the muc	entified as a carcino ogical properties hav	gen or potential ve not been thor	carcinogen by O	SHA.
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regulations may be different. Dispos Section 14 Transport Info UN/NA number: Not applicable Hazard class: Not applicable		lisposal of cala	log-size quantities o	only. Federal requ	lations may a	only to empty of	ontainer. State and/or local
UN/NA number: Not applicable Hazard class: Not applicable	se of in acco	ordance with all	local, state and fed	leral regulations o	contract with	a licensed che	mical disposal agency.
Hazard class: Not applicable	rmation (US	B DOT / CANAD	DA TDG)				
A CONTRACTOR OF A DESCRIPTION OF A DESCR	Pack 2012	ping name: N Ing group: N ERG Guide #	-	Reportable Qu	antity: No	Ma	arine pollutant: No
Section 15 Regulatory Info A chemical is considered to be listed if the CA		he anhydrous form	is on the Inventory list				
Component		TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	
Hydrochloric acid		Listed	Not listed	D002	Listed	Not listed	
Section 16 Other Informat							
The information contained herein is furnished dent determinations of suitability and complete	lon			and the second se	unplement to othe	r information dathe	

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Section 1 Chemical Product and Company Identification

Innovating Science[®] by Aldon Corporation "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 use only.

Not for drug, food or household use.

Product NITRIC ACID, 0.05 MOLAR SOLUTION	
synonyms Azotic Acid, Water Solution	
ection 2 Hazards Identification	
Signal word: DANGER Pictograms: GHS03 / GHS05 Farget organs: Eyes, Skin, Respiratory system, Teeth	 Precautionary statement: P260: Do not breathe mist/vapours/spray. P264: Wash hands thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SK(IN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER or doctor. P363: Wash contaminated clothing before reuse. P405: Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm. Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS	
Water Nitric acid, 70% solution	7732-18-5 7697-37-2	99.68% 0.32%	231-791-2 231-714-2	
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. MATERIAL IS EXTREMELY DESTRUCTIVE TO THE TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE EYE 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 BE HARMFUL IF ABSORBED THROUGH SKIN, CAUSES SKIN BURNS. Remove contaminated clothing. Flush thoroughly with mild scap 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.

Section 8 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.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 157)

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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. Protect from physical damage and sunlight.

Section 8	Exposure Controls / Personal I	Protection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Nitric acid	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm	TWA: 2 ppm STEL: 4 ppm

Englneering 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-

Stability & Reactivity Hazardous polymerization: Will not occur. Conditions to avoid: Containers may burst when headed. Avoid contact with water. Incompatible materials: Reacts with a wide watery of metals (appeciably when powderset), bases, carbides, suffices, furninates, picrates, turpentine and combustible materials: Reacts with a wide watery of metals (appeciably when powderset), bases, carbides, suffices, furninates, picrates, turpentine and combustible materials: Reacts with a wide watery of metals (appeciably), bases, carbides, suffices, furninates, picrates, turpentine and combustible materials: Sub-rabble. Corrosive Services and Amagintration: Expension. Section 11 Totaccological Information Acute toxicity: Crait-human LC, 2: 40 mg/dg; Inhalation-rat LCSD: 0.8 mg/L. Skin corrosion/Infration:: Sub-rabble. Corrosive Reproducts: Sub-rabble. Corrosive Reproducts: Coal not available Carcinogenity: Data not available Carcinogenity: Data not available Carcinogenity: Data not available Polity: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by URC, COMAN, and available Polity: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by URC, COMAN, and available Polity: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by URC, COMAN, avoid available Polity: No component	Section 9	Physical & Chemical Prop	erties			-		
Chemical stability: Stable Hazardous potymerization: Will not occur. Conditions to avoid: Containers may burst when heated. Avoid contact with water. Incompatible mathaires, not avoid contact with water. Incompatible mathair: React with a wide variety of metals (specially when powdered), bases, carbides, suffices, fulminates, picrates, turpentine and combustible mathaires avoid: Containers. Section 11 Taxicological Information Acute toxicity: Oral-human LDg. 430 mg/s; Inhalation-rat LCS0: 0.8 mg/L. Skin corrosion/infration: Skin-avoid toxicity in the avoid toxicity in the avoid toxicity in the avoid toxicity. Data of avoid toxicity in the avoid toxicity. Serious avg damage/initiation: Skin-avoid toxicity in the avoid toxicity in the avoid toxicity in the avoid toxicity. Data of avoid toxicity in the avoid toxicity in the avoid toxicity. OR: Component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not avoid toxicity. STD1-repeated persoure: Data not avoid tobing p	Odor: Irritating, su Odor threshold: D pH: <1 (1% solution Melting / Freezing p Boiling point: 120	uffocating odor. Data not available. on) point: -22 to -41°C (-7.6 to -42°F)* 0-122°C (248-252°F)*	Flammability Explosion lin Vapor pressu Vapor density Relative dens	(solid/gas): Data not a nits: Lower / Upper: D re (mm Hg): 49-55 @ / (Air = 1): Data not av nity (Specific gravity):	available. Pata not available 25°C* ailable	Auto-ignit Decompos Viscosity: Molecular	ion temperature: sition temperature Data not availab formula: Mixture	: Data not available re: Data not available. ole. e
Conditions to avoid: Containers may bust when heated. Avoid contact with water. Incompatible materials: Reacts with a wide variety of metals (sepacially when powdered), bases, carbides, sulfides, fulminates, picrates, turpentine and combustible materials: Section 1 Taxicological Information Acute toxicity: Crait-human LD ₁₀ , 430 mg/hg; (haladion-rat LCS: 0.8 mg/L Skin corrosion/infritation: Skin-rabbi - Corrosive Respiratory or skin sensitization: Data not available Gere cell mutagenitization: Sin-rabbi - Corrosive Respiratory or skin sensitization: Data not available Gere cell mutagenitization: Sin corrosive greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. NAC: 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. Reproductive toxicity: Data not available STOT-ingle capoure: Editor may be delayed, Large doses may cause: conversion of hemoglobin to methemoglobin, producing cyanosis, marked fall in bat Matimation: Burning ensation, capb, labored breathing, shortness excuted in the maint potential hazards. Additional Information: RECS #: QUS778000 STO-ingle Camole available Stote daphata and doter aguestic invertebrates: Daphnia magna (Crustada), EC _L = 107 mg/L Stotely to daphat and doter aguestic invertebrates: Daphnia magna (Crustada),	Section 10	Stability & Reactivity						
Hazardous decomposition products: Nitrogen oxides and hydrogen gas. Section 1 Toxicological Information Acute toxicity: Oral-human LD _{Lo} , 430 mg/kg: inhalation-rat LC50: 0.8 mg/L. Shin correation/initiation: Skin correation/initiation: Section 10 Disponsibility: Skin ratio 4: Correative Services set damagnification: Data not available Carrent of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. ARC: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by OSHA. ORD: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by OSHA. ORD: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by OSHA. ORD: 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. STOT-repared present:: Data ot available Potential heath effects: Innant available Instance and symptoms of exposure: Effect may be delayed. Large dose may cause: conversion of heathousgibin, producing cyanosis, marked fall in bits preserve, leding this, (fish, fresh water), LC50 = 72 mg/L96 hours: Toxicity to daphinis and other aquetio invertify a segue at the					Will not occur.			
Section 11 Toxicological Information Acute toxicity: Oral-human LD ₁₀ , 430 mg/kg; inhalation-rat LC50: 0.8 mg/L. Skin corresolinititation: Skin-rate and the section of the sect	Incompatible mat	erlals: Reacts with a wide variety	of metals (espe	cially when powdered),	bases, carbides, s	ulfides, fulmina	ates, picrates, turp	centine and combustible materi
Acute toxicity: Oracle Luca: 430 mg/kg: Inhalation-rat LC50: 0.8 mg/L. Skin corresion/irritation: Skin corresion Respiratory or skin sensitization: Data not available Gam cell mutagenicity: Data not available Carcinogenity: Data not available Carcinogenity: Data not available Carcinogenity: Data not available Carcinogenity: Data not available STOT-single separatoric of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by USRC. OSRA: 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. Reproductive toxicity: Data not available STOT-single separator: Data not available Potential health effects: Inhination: Inhalaton: Burning sensation in the throat and chest, vomiting, shock or collapse. Stim: Serious Stim borns per separate: Feddage Large doses may cause: conversion of hemoglobin to methemoglobin, producing cyanosis, marked fall in bla pressure, insking to collapse.	Hazardous decon	nposition products: Nitrogen oxid	des and hydrog	en gas.				
Skin corrosionifinitation: Skin-arabbi - Corrosive Serious eye damage/initation: Data not available Carcinogenity: 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 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. Reproductive toxicity: Data not available STOT-engle exposure: Data not available STOT-engle exposure: Data not available Approductive toward: Bat not available Stores path Bit Stores path Stores path Bat not available Stores path Bit Stores path Stores path Bat not available Stores path Bat not available Stores path Bat not available Stores path, burns. Stores path Stores path, burns. Stores path, burns. Stores path, burns. Stores path, burns	Section 11	Toxicological Information						
Section 12 Ecological Information Toxicity to fish: Gambusia affinis (fish, fresh water), LC50 = 72 mg/L/96 hours Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacia), EC _{L0} = 107 mg/L. Toxicity to algae: No data available Persistence and degradability: No data available Mobility in soli: No data available Persistence and degradability: No data available Persistence and degradability: No data available Portion 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 apply to empty container. State and/or loc 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 (US DOT / CANADA TDG) UN/NA number: UN2031 Shipping name: Nitric acid Hazard class: 8 Packing group: II Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: No exceptions 2012 ERG Guide # 157 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)	Germ cell mutage Carcinogenity: D NTP: No compone IARC: No compone OSHA: No compor Reproductive tox STOT-single expo STOT-repeated exp Aspiration hazard Potential health e Inhalation: Burning Ingestion: Sore thi Skin: Serious skin Eyes: Redness, pa Signs and symptot	enicity: Data not available Data not available ent of this product present at levels ent of this product present at levels nent of this product present at levels nent of this product present at levels icity: Data not available spoure: Data not available to Data not available d: Data no	greater than or greater than o is greater than ing, shortness ation in the thro skin. delayed. Large	r equal to 0.1% is identi or equal to 0.1% is iden of breath, sore throat. S pat and chest, vomiting, e doses may cause: con	fied as probable, po lified as a carcinogo symptoms may be o shock or collapse. version of hemoglo	ossible or confi en or potential delayed. obin to methem	rmed human carc carcinogen by OS	SHA.
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacia), EC _{Lo} = 107 mg/L Toxicity to algae: No data available Persistence and degradability: No data available Mobility in soll: 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 may apply to empty container. State and/or loc: 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 (US DOT / CANADA TDG) UN/NA number: UN2031 Shipping name: Nitric acid Hazard class: 8 Packing group: II Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: No exceptions 2012 ERG Guide # 157 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 Nitric acid Listed 1,000 lbs (454 kg) D001 Listed Not list	Section 12							
These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or loc: Transport Information (US DOT / CANADA TDG) UN/NA number: UN2031 Shipping name: Nitric acid Hazard class: 8 Packing group: II Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No 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 Nitric acid Listed 1,000 lbs (454 kg) Doo1 Listed Not listed	Toxicity to daphni Toxicity to algae: Persistence and d Mobility in soll: N Other adverse effe	ia and other aquatic invertebrate No data available legradability: No data available lo data available ects: An environmental hazard ca	s: Daphnia ma Bioaccum PBT and y	gna (Crustacia), EC _{LO} = ulative potential: No (/ PvB assessment : No	data available data available	or disposal.		
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 (US DOT / CANADA TDG) UN/NA number: UN2031 Shipping name: Nitric acid Hazard class: 8 Packing group: II Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: No exceptions 2012 ERG Guide # 157 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 Nitric acid Listed 1,000 lbs (454 kg) D001 Listed Not listed	These disposal g	uidelines are intended for the di	sposal of cata	log-size quantities or	ly. Federal regul	lations may a	pply to empty co	ontainer. State and/or local
UN/NA number: UN2031 Shipping name: Nitric acid Hazard class: 8 Packing group: II Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: No exceptions 2012 ERG Guide # 157 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 Nitric acid Listed 1,000 lbs (454 kg) D001 Listed Not listed	regulations may b	be different. Dispose of in acco	rdance with a	I local, state and fede	ral regulations or	contract with	a licensed cher	mical disposal agency.
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 Nitric acid Listed 1,000 lbs (454 kg) D001 Listed Not listed	Hazard class: 8 Exceptions: No	Packing gr	oup: II	Reportat	ble Quantity: 1,	000 lbs (454	kg) Ma	rine pollutant: No
Component TSCA CERLCA (RQ) RCRA code DSL NDSL Nitric acid Listed 1,000 lbs (454 kg) D001 Listed Not listed								
Nitric acid Listed 1,000 lbs (454 kg) D001 Listed Not listed			The second se	1	RCRA code	DSI	NDSI	
Restler 16 Other Information								
	Section 16	Other Information	1					
The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make inde			v of any kind En	novers should use this int	ormation only as a second	nolement to att	at information anti-	and hu them and much make to t

CORROSIVE STORAGE CODE WHITE

Section 1	Chemical Product and Company Identific	ation	Page E1 of E2
	rating Science [®] by Aldon Corporation tting edge science for the classroom"	221 Rochester Street Avon, NY 14414-9409 (585) 226-8177	CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.
Product	SODIUM HYDROXIDE, 0.1 MOLAR (0.1N) SOLUTION		
Synonyms	Sodium Hydroxide, Water Solution (0.1M)		
Section 2	Hazarda Identification		
Pictograms Target orga GHS Class Skin irritatio Serious Eye GHS Label H316: Caus	d: WARNING :: None required ins: Respiratory tract, gastrointestinal tract, eyes, skin. ification: n (Category 3) Damage/ Eye Irritation (Category 1) information: Hazard statement: ies mild skin irritation. ies eye irritation.	P305+P351+P33 Remove contact I P332+P313: If sk	atement: Is thoroughly after handling. B: IF IN EYES: Rinse cautiously with water for several minutes. enses, if present and easy to do. Continue rinsing. in irritation occurs: Get medical advice/attention. e irritation persists: Get medical advice/attention.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Inform	ation on ingredients		
Chemical Name	CAS #	%	EINECS
Water Sodium hydroxide	7732-18-5 1310-73-2	99.6% 0.4%	231-791-2 215-185-5
Section d Einst Ald Measures			

Section 4 First Ald Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vorniting 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 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: CAUSES MILD IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 6 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.

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Page E2 of E2

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 Protectio	n		
Exposure Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	Sodium hydroxide	STEL: C 2 mg/m ³	TWA: 2 mg/m ³	STEL: C 2 mg/m ³

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	Physical & Chemic	al Properties						
Appearance: Clea Odor: No odor. Odor threshold: I pH: Data not avail Melting / Freezing Boiling point: ~ 1 Flash point: Not f	ar, colorless liquid. Not applicable. able. point: ~0°C (~ 32°F) [00°C (212°F) [water] lammable.	Evaporatio Flammabili Explosion Vapor pres Vapor dens Relative de Solubility(i	n rate (Water = 1): < 1 ty (solid/gas): Not applic: limits: Lower / Upper: N sure (mm Hg): 14 [water] sity (Air = 1): 0.7 [water] nsity (Specific gravity): 1 es): Complete in water.	ot applicable	Auto-igniti Decompos Viscosity: Molecular	on temperature	re	
Section 10	Stability & Reactiv	ity						
Incompatible mat	old: Can react with carbo erlals: Metals, acids, org	n dioxide to form sodi anic compounds, orga			ydrogen gas.			
Section 11	Toxicological Infor	mation						
IARC: No compon OSHA: No compon Reproductive tox STOT-single expo STOT-repeated expo STOT-repeated expo Aspiration hazarr Potential health of Inhalation: No dat Skin: Causes lint Eyes: Causes slig Signs and sympt Specific data is no	ent of this product presen nent of this product prese lefty: Data not available osure: Data not available offects: a available for this dilution a available for this dilution ation upon prolonged or re hit irritation.	t at levels greater than nt at levels greater than ble n. epeated contact. e best of our knowledg ropriate procedures to	or equal to 0.1% is identifi n or equal to 0.1% is identifi in or equal to 0.1% is identifi in or equal to 0.1% is ident dentification of the other of the other of the other gethe chemical, physical at minimize potential hazard widel	fied as probable, p ified as a carcinog nd toxicological pro	ossible or confii en or potential	med human car carcinogen by O	ISHA.	is dilution.
Section 12	Ecological Informa							
Toxicity to daphn Toxicity to algae: Persistence and of Mobility in soll: N Other adverse eff Section 13 These disposal g	ia and other aquatic inv No data available legradability: No data a lo data available ects: An environmental i Disposal Consider uidelines are intended	vailable Bioacci PBT an nazard cannot be exclu ations for the disposal of c	g/l - 96 h [Sodium hydroxic ation EC50 - Daphnia - 40. umulative potential: No of d vPvB assessment: No uded in the event of unprof atalog-size quantities or all local, state and fede	38 mg/l - 48 h [Soi data available data available essional handling hly. Federal regu	or disposal. Ilations may a	pply to empty o		
Section 14	Transport Informa			al regulations of	Contract with	a noonadu on	onnoai aisposai ay	onoy.
	Not applicable	Shipping name: Packing group:	Not Regulated	Reportable Qu	antity: No	м	arine pollutant:	No
Section 15	Regulatory Informa							
	red to be listed if the CAS nu	the second s		0000	1			
Compo Sodium hydroxide		TSCA Listed	CERLCA (RQ) 1,000 lbs (454 kg)	RCRA code D002	DSL Listed	NDSL Not listed		
Section 16	Other information							
		out warranty of any kind.	Employers should use this inf	ormation only as a su	upplement to othe	r information gath	ered by them and mus	t make inder
dent determinations o	f suitability and completenes gency for Research on Cance	s of information from all s	Employers should use this info ources to assure proper use of Safety and Health Administration Revision D	of these materials and	d the safety and h arget Organ Toxic	ealth of employee ity, SE: Single Exp	s. NTP: National Toxic	ology Progr Exposure,

Page E1 of E2

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Section 1	Chemical	Product and Com	pany Identification

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SULFURIC ACID SOLUTION, 0.1M / 0.2N Product Synonyms Sulfuric Acid, Water Solution Section 2 Hazards Identification Signal word: DANGER Precautionary statement(s): P260: Do not breathe mist/vapours/spray. P264: Wash hands thoroughly after handling. Pictograms: GHS05 Target organs: Respiratory system, skin, eyes, teeth. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. A P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for **GHS Classification:** Skin corrosion (Catagory 1A) P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, Continue rinsing, P310: Immediately call a POISON CENTER or doctor. Eye damage (Catagory 1) GHS Label information: Hazard statement(s): H314: Causes severe skin burns and eye damage H318: Causes serious eye damage. 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.

Ca Prop 65: This chemical is known to the State of California to cause cancer (Strong inorganic acid mists containing sulfuric acid).

Section 3 Composition / Information on Ingredients					
Chemical Name	CAS #	%	EINECS		
Water Sulfuric acid	7732-18-5 7664-93-9	99.74% 0.523%	231-791-2 231-639-5		
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: HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. EYE CONTACT: CAUSES SERIOUS 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: CAUSES 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: Product is a water reactive material, DO NOT USE WATER! Use dry chemicals only for extinguishing.

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. Use water on combustibles burning in vicinity of acid but use care as water applied to the acid results in severe generation of heat and may cause boiling and splattering. Sulfuric acid will not burn, but is capable of igniting finely divided combustible materials on contact. May react violently with organic materials and water with the evolution of heat. Contact with reactive metals, e.g. atuminum, may result in the generation of flammable 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: 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.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 157)

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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. Hygroscopic material. Never add water to this solution, always add acid, slowly and in small amounts to water to avoid splattering.

Section 8	Exposure Controls / Personal Pi	rotection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	Sulfuric acid	TWA: 0.2 mg/m ³ (A2)	TWA: 1 mg/m ³	TWA: 1 mg/m ³

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: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Prop	Antura	
Appearance: Clear to slightly cloudy liquid. Odor: Slightly pungent odor. Odor threshold: Data not available. pH: Data not available. Metting / Freezing point: Approximately 0°C (32°F) (water) Boiling point: Approximately 100°C (212°F) (water) Flash point: Data not available	Evaporation rate (Water = 1): <1 Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor density (Air = 1): 0.7 (water) Relative density (Specific gravity): Approximately 1.0 (water) Solubility(les): Complete in water.	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available. Viscosity: Data not available. Molecular formula: Mixture Molecular weight: Mixture
Section 10 Stability & Reactivity		
Chemical stability: Stable	Hazardous polymerization: Will not occur.	

Hazardous polymerization: Will not occur. Conditions to avoid: Avoid contact with water and heat. Avoid temperatures above 250°C (482°F).

Incompatible materials: Alkalies, amines, anhydrides, combustibles, organics, oxidizers, powdered metals.

Hazardous decomposition products: Sulfur trioxide and/or sulfur dioxide. Hydrogen gas by reaction with metals.

Toxicological Information Section 11

Acute toxicity: Oral-rat LD50: 2140 mg/kg; Inhalation-rat LC50: 510 mg/m3/2 hours (Sulfuric acid) Skin corrosion/irritation: Skin-rabbit - causes burns (Sulfuric acid)

Serious eye damage/Irritation: Eyes-rabbit - causes burns (Sulfuric acid) Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available

NTP: This product contains a chemical known to be a human carcinogen. (Sulfuric acid) IARC classified: Group 1: Carcinogenic to humans. [Acid mists, strong inorganic] OSHA: 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.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available

Potential health effects:

1

Inhalation: Inhalation of this material is irritating and/or corrosive to the nose, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath, wheezing, choking, chest pain and impairment of lung function. Inhalation of high concentrations may result in permanent lung damage. Repeated inhalation may cause bronchitis, and also etching of dental enamel followed by the erosion of the enamel and dentine with loss of tooth substance. Ingestion: Ingestion may cause irritation and/or burns to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea,

Ingestion: Ingestion may cause impation and/or burns to the entire gastion earlier and, motioning the administration and or burns to the entire gastion earlier and, motioning the administration and or burns of earlier and administration and/or burns characterized by redness, swelling and scab formation. Eyes: Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage. Signs and symptoms of exposure: Burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Additional information: RTECS #: WS5600000 (Sulfuric acid)

Section 12 Ecological Information

Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h (Sulfuric acid)

Toxicity to daphnia and other aquatic invertebrates: Crangon crangon (crustacea) 70-80 mg/l/48 hours (Sulfuric acid)

Toxicity to algae: No data available

Persistence and degradability: No data available Mobility in soil: No data available

Bioaccumulative potential: 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.

ction 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 local 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 (US DOT / CANADA TDG) Shipping name: Sulfuric acid UN/NA number: UN2796 Packing group: II Hazard class: 8 Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No

Exceptions: Limited quantity equal to or less than 1 L			2012 ER	2012 ERG Guide # 157			
Section 15	Regulatory Information						
A chemical is cons	dered to be listed if the CAS number for the a	inhydrous form	is on the Inventory list.				
Com	ponent	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	
Sulfuric acid		Listed	1000 lbs (454 kg)	D002	Listed	Not listed	

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make indepen-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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