Section 1

"Cutting edge science for the classroom"

Identification

SAFETY DATA SHEET

GENERAL STORAGE CODE GREEN

Page E1 of E2

INNOVATING SCIENCE 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	POTASSIUM THIOCYANATE, 1 MOLAR SOLUTION					
Synonyms	Potassium Thiocyanate, Water Solution					
Section 2	ection 2 Hazards identification					
Pictograms	I: WARNING : No symbol required ns: Central nervous system, Cardiovascular system, Thyroid	Precautionary statement: P301+P304+P312: IF SWALLOWED OR INHALED: Call a POISON CENTER or doctor if you feel unwell.				
	fication: y, oral (Category 5) y, inhalation (Catégorie 5)					
H303: May b	information: Hazard statement: le harmful if swallowed. le harmful if inhaled.					

Hazards not otherwise classified:

Physical hazards not otherwise classified (PHNOC) - Not Known

Health hazards not otherwise classified (HHNOC) - Contact with acids liberates very toxic gas.

Section 3 Composition / information on ingredients				
Chemical Name	CAS #	%	EINECS	
Water Potassium thiocyanate	7732-18-5 333-20-0	90.3% 9.7%	231-791-2 206-370-1	
Section 4 First aid measure	res	1		

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: 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 BE HARMFUL IF ABSORBED THROUGH SKIN. 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: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

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.	Potassium thiocyanate	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 misty conditions prevail, work in fume hood or wear a NIOSH/MSHAwoodr nirator

approved respirator	-						
Section 9	Physical and chemical pro	operties					
	Data not available. able. nt: Approximately 0°C (32°F) (water) oximately 100°C (212°F) (water)	Flammability Explosion lim Vapor pressu Vapor density Relative density	rate (Water = 1): <1 (solid/gas): Data not nits: Lower / Upper: re (mm Hg): 14 (wate y (Air = 1): 0.7 (water) y (Specific gravity): App): Complete in water.	Data not available r)	Auto-igniti Decompos Viscosity: Molecular		e: Data not available ure: Data not available. ble. re
Section 10	Stability and reactivity				1		
Incompatible mate Hazardous decom	: Stable d: Excessive temperatures and terrials: Strong oxidizers and acids position products: Ammonia, h on reaction with strong acids. Ca	formation of dust s. nydrogen sulphide	e, carbonyl sulphide, n	itric oxides, sulfur oxid			
, ,	5		very reactive and may	react violentity with o	kiuizing agent	is causing life of	explosion.
Section 11	Toxicological information						
IARC: No compone OSHA: No compone OSHA: No compone Reproductive toxi STOT-single expo STOT-repeated ex Aspiration hazard Potential health ef Inhalation: May be Ingestion: May be Skin: Contact with Syse Contact with Signs and sympto not available. Exer		s greater than or els greater than o nicals known to th onged contact. our knowledge th inimize potential	r equal to 0.1% is ident or equal to 0.1% is iden he State of California to he chemical, physical a hazards.	ified as probable, pos tified as a carcinoger o cause cancer or rep	sible or confir n or potential c roductive toxic	med human caro arcinogen by OS city.	SHĂ.
Section 12	Ecological information						
Toxicity to algae: I Persistence and d Mobility in soil: N Other adverse effe	a and other aquatic invertebrate No data available egradability: No data available o data available cts: An environmental hazard ca	Bioaccum PBT and v	ulative potential: No /PvB assessment: No	o data available	disposal.		
Section 13	Disposal considerations						
	uidelines are intended for the one different. Dispose of in according to the one of the						
UN/NA number: Hazard class: N	lot applicable Pack	ping name: 1 king group: N ERG Guide #		Reportable Qua	ntity: No	Ma	arine pollutant: No
•							
Section 15	Regulatory information	the anhydrous form	n is on the Inventory list				
Section 15	ed to be listed if the CAS number for t	the anhydrous form	n is on the Inventory list. CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65

Page E1 of E2

Section 1

Product

Identification

INNOVATING SCIENCE[®] by Aldon 221 Roc Avon, N

"Cutting edge science for the classroom"

THYMOLPHTHALEIN, 0.04% SOLUTION

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 Thymolphthalein, 0.04% in Ethyl Alcohol / Thymolphthalein, 0.04% in A	Icohol /
Section 2 Hazards identification	
 Signal word: DANGER: Pictograms: GHS02 / GHS06 / GHS08 Target organs: Eyes, Central nervous system, Liver, Kidneys. Image: Signal word: Eyes, Central nervous system, Liver, Kidneys. Image: Signal Word: Signal Si	 Precautionary statement: P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P233+P235: Keep container tightly closed. Keep cool. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ventilating/lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist/vapours/spray. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor. P303+P351+P353: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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 breathing. P308+P311: IF exposed or concerned: Call a POISON CENTER or doctor. P337+P343: If eye irritation persists: Get medical attention. P361+P364: Take off immediately all contaminated clothing and wash it before reuse. P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish. P403+P405: Store in a well-ventilated place. Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

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

Section 3	Composition / informatio	n on ingredients			
Chemical Name		CAS #	%	EINECS	
Ethyl alcohol		64-17-5	85.0 - 85.8%	200-578-6	
Isopropyl alcohol		67-63-0	9.0%	200-661-7	
Methanol		67-56-1	4.0 - 4.3%	200-659-6	
Methyl isobutyl keto	ne	108-10-1	0.9 - 1.0%	203-550-1	
Thymolphthalein		125-20-2	0.04%	204-729-7	

Section 4 First aid measures

INGESTION: TOXIC 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: TOXIC 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 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: TOXIC IN CONTACT WITH SKIN. CAUSES 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. 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. Flame may not be visible in daylight.

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, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure controls / personal protection					
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Linits.	Ethanol	STEL: 1000 ppm / 1880 mg/m ³ (A3)	TWA: 1000 ppm / 1900 mg/m ³	TWA: 1000 ppm / 1900 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/MSHAapproved respirator

Section 9 Appearance: Clea							
	Physical and chemical p	oroperties					
Odor: Mild charact Odor threshold: D pH: Data not availa Melting / Freezing Boiling point: 74-8 Flash point: 13°C	eristic odor. ata not available. ble. point: -114°C (-173°F) 30°C (165.2-176°F)	Flammability (Explosion limi Vapor pressure Vapor density Relative density	tte (Butyl acetate = 1): solid/gas): Data not a ts: Lower / Upper: 3. e (mm Hg): Ca 50 @ 2 (Air = 1): Ca 1.5 (Specific gravity): 0.7919- Soluble in water.	vailable. 3% / 19.0% 20°C	Auto-igniti Decompos Viscosity: Molecular	on temperature:	re: Data not available. le.
Section 10	Stability and reactivity						
Incompatible mate	: Stable d: Excessive temperatures, he rrials: Strong oxidizers, inorga position products: Oxides of	eat, sparks, open fla nic acids and halog					
Section 11	Toxicological informatio	n					
Germ cell mutage Carcinogenity: Da NTP: No componer IARC classified: Gr OSHA: No compon CA Prop 65: WA cancer and reprodu Reproductive toxi STOT-single expo STOT-repeated ex Aspiration hazard Potential health ef Inhalation: Inhalatio	nt of this product present at level oup 3: Not classifiable as to its ent of this product present at le RNING! : This product can experi- citive harm. city: Data not available sure: The substance or mixtum posure: Data not available : Data not available fects: on may cause dizziness, drows n causes dizziness, drowsiness skin causes irritation defatting of	els greater than or e carcinogenicity to h vels greater than or ose you to chemica e is classified as sp iness, nausea, vorr , decreased reactio	umans. [Isopropanol] r equal to 0.1% is identi ls including Methanol a ecific target organ toxic niting, inability to concer on, euphoria, nausea, v	fied as a carcinoge nd Methyl isobutyl I cant, single exposur ntrate and irritation o	n or potential ketone, which e, category 3 of the throat.	carcinogen by OS are known to the with narcotic effe	State of California to cause
Skin: Contact with Eyes: Contact with Signs and sympto	eyes may cause blindness. ms of exposure: See Potentia ation: RTECS #: KQ6300000		ove.				
Skin: Contact with Eyes: Contact with Signs and sympto	ms of exposure: See Potentia		ove.				
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: O Persistence and d Mobility in soil: N Other adverse effe	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), E egradability: No data available o data available cts: An environmental hazard	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/ Bioaccumu PBT and vi cannot be excluded	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al ulative potential: No c PvB assessment: No	10,800 mg/l/24 hou osolute] lata available data available	-	9.8% pure]	
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: (Persistence and d Mobility in soil: N- Other adverse effe Section 13	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), f egradability: No data available o data available cts: An environmental hazard Disposal considerations	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/, Bioaccumu PBT and vi cannot be excluded	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al llative potential: No of PvB assessment: No d in the event of unprofe	10,800 mg/l/24 hou osolute] lata available data available essional handling or	disposal.		
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: C Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal gu	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), E egradability: No data available o data available cts: An environmental hazard	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/, Bioaccumu PBT and vi cannot be excluded a disposal of cata	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al ulative potential: No of PvB assessment: No d in the event of unprofe log-size quantities or	10,800 mg/l/24 hot osolute] lata available data available essional handling or ly. Federal regula	disposal. ations may a	pply to empty c	
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: C Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal gu	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), f egradability: No data available o data available icts: An environmental hazard Disposal considerations uidelines are intended for the	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/, Bioaccumu PBT and vi cannot be excluded a disposal of cata	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al ulative potential: No of PvB assessment: No d in the event of unprofe log-size quantities or	10,800 mg/l/24 hot osolute] lata available data available essional handling or ly. Federal regula	disposal. ations may a	pply to empty c	
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: O Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal guregulations may b Section 14 UN/NA number: Hazard class: 3	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), f egradability: No data available o data available o tata available o tat	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/, Bioaccume PBT and vi cannot be excluded a disposal of cata cordance with all g name: Ethano group: II	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al ulative potential: No of PvB assessment: No d in the event of unprofi- log-size quantities or local, state and feder of solution Reportat	10,800 mg/l/24 hot osolute] lata available data available essional handling or ly. Federal regula	disposal. ations may a contract with	pply to empty c a licensed che	
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: (Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal guregulations may b Section 14 UN/NA number: Hazard class: 3 Exceptions: Lin	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), f egradability: No data available o data available icts: An environmental hazard Disposal considerations uidelines are intended for the different. Dispose of in action Transport information UN1170 Shipping Packing	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/, Bioaccume PBT and vi cannot be excluded a disposal of cata cordance with all g name: Ethano group: II	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al ulative potential: No of PvB assessment: No d in the event of unprofi- log-size quantities or local, state and feder of solution Reportat	10,800 mg/l/24 hot osolute] lata available data available essional handling or ly. Federal regula ral regulations or	disposal. ations may a contract with	pply to empty c a licensed che	mical disposal agency.
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to daphnia Toxicity to algae: O Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal guregulations may b Section 14 UN/NA number: Hazard class: 3 Exceptions: Lin Section 15 A chemical is consider	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), fe egradability: No data available o data data available o data available o data data available o data avai	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/ Bioaccume PBT and vi cannot be excluded a disposal of cata cordance with all g name: Ethano group: Il ss than 1 L or the anhydrous form	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al Jlative potential: No of PvB assessment: No d in the event of unprofi- log-size quantities or local, state and feder of solution Reportat 2020 ERC is on the Inventory list.	10,800 mg/l/24 hot psolute] lata available data available essional handling or ly. Federal regula ral regulations or ble Quantity: 5,0 5 Guide # 127	disposal. ations may a contract with 000 lbs (2270	pply to empty c a licensed che) kg) Ma	mical disposal agency. I rine pollutant: No
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to algae: O Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal guregulations may b Section 14 UN/NA number: Hazard class: 3 Exceptions: Lin Section 15 A chemical is consider Comport	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), fe egradability: No data available o data data available o data available o data data available o data avai	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/, Bioaccume PBT and vi cannot be excluded a disposal of cata cordance with all g name: Ethano group: Il ss than 1 L	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al Jlative potential: No of PvB assessment: No d in the event of unprofi- log-size quantities or local, state and fede of solution Reportat 2020 ERC	10,800 mg/l/24 hot osolute] lata available data available essional handling or ly. Federal regula ral regulations or	disposal. ations may a contract with	pply to empty c a licensed che	mical disposal agency.
Skin: Contact with Eyes: Contact with Signs and sympto Additional informa Section 12 Toxicity to fish: O Toxicity to daphnia Toxicity to daphnia Toxicity to algae: O Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal guregulations may b Section 14 UN/NA number: Hazard class: 3 Exceptions: Lin Section 15 A chemical is consider	ms of exposure: See Potentia ation: RTECS #: KQ630000 Ecological information ncorhynchus mykiss (fish, fresh a and other aquatic invertebra Chlorella pyrenoidosa (Algae), fe egradability: No data available o data data available o data available o data data available o data avai	[Ethanol] a water), LC50 = 11 ates: Daphnia mag EC50 = 9,310 mg/l/ Bioaccume PBT and vi cannot be excluded a disposal of cata cordance with all g name: Ethano group: Il ss than 1 L or the anhydrous form	,200 mg/l/24 hours [Ett na (Crustacia), EC50 = growth rate [Ethanol, al Jlative potential: No of PvB assessment: No d in the event of unprofi- log-size quantities or local, state and feder of solution Reportat 2020 ERC is on the Inventory list.	10,800 mg/l/24 hot psolute] lata available data available essional handling or ly. Federal regula ral regulations or ble Quantity: 5,0 5 Guide # 127	disposal. ations may a contract with 000 lbs (2270	pply to empty c a licensed che) kg) Ma	mical disposal agency. Irine pollutant: No

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Section 1

Identification

[®] by Aldon INNOVATING SCIENCE "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.

 Precautionary statement(s): P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P233: Keep container tightly closed. P241: Use explosion-proof electrical/ventilating/lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing mist/vapours/spray. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. 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 breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P370+P378: In case of fire: Use dry chemical, dry sand, alcohol foam, carbon dioxide to extinguish. P403+P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Water Isopropyl alcohol Phenolphthalein		7732-18-5 67-63-0 77-09-8	55.7% 43.8% 0.5%	231-791-2 200-661-7 201-004-7	
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. 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 BE HARMFUL IF ABSORBED THROUGH SKIN. 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. 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. Flame may not be visible in daylight.

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, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure controls / personal protection					
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Linits.	Isopropanol	TWA: 200 ppm / STEL: 400 ppm	TWA: 400 ppm / 980 mg/m ³	TWA: 400 ppm / STEL: 500 ppm		

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.

Appearance: Clear, color Odor: Aromatic odor. Odor threshold: Data no pH: Data not available. Melting / Freezing point: Approximate Flash point: 24.4-25°C (Section 10 St: Chemical stability: Stab Conditions to avoid: Ex Incompatible materials: Hazardous decompositi Section 11 To Acute toxicity: Oral-rat I Skin corrosion/irritation Serious eye damage/irrit Respiratory or skin serious eye damage/irrit Respiratory or skin serious eye damage/irrit Germ cell mutagenicity: Carcinogenity: Data not NTP: Reasonably anticipz IARC classified: Group 22 OSHA: No component of CA Prop 65: WARNING	t available. proximately -50°C (-58°F)* ly 85-100°C (185-212°F)* 76-77°F) [43.8% IPA] ability and reactivity le cessive temperatures, heat Strong oxidizing materials, on products: Oxides of ca xicological information LD50: >2000 mg/kg ; Inhala : Skin-rabbit - Slight irritant tation: Eyes-rabbit - Sever sitization: Data not available available available available available available available carcinogenic to l	Evaporation ra Flammability (s Explosion limit Vapor pressur Vapor density Solubility(ies): Hazardo , sparks, open fla caustics, alumin rbon.	ums, metals, nitroform	vailable. % / 12% [Pure IPA] 20°C [Pure IPA] A] Vill not occur. of ignition. I, oleum, chlorinated	Auto-ignition Decompos Viscosity: Molecular Molecular	n temperature: 399 ition temperatur Data not availab formu la: Mixtur weight: Mixture	re *[70% IP
Odor: Aromatic odor. Odor threshold: Data no pH: Data not available. Melting / Freezing point: App Boiling point: Approximate Flash point: 24.4-25°C (Section 10 St. Chemical stability: Stab Conditions to avoid: Ex Incompatible materials: Hazardous decompositi Section 11 To Acute toxicity: Oral-rat I Skin corrosion/irritation Serious eye damage/irri Respiratory or skin sens Germ cell mutagenicity: Carcinogenity: Data not NTP: Reasonably anticipy IARC classified: Group 2E OSHA: No component of CA Prop 65: A WARNING	t available. proximately -50°C (-58°F)* ly 85-100°C (185-212°F)* 76-77°F) [43.8% IPA] ability and reactivity le cessive temperatures, heat Strong oxidizing materials, on products: Oxides of ca xicological information LD50: >2000 mg/kg ; Inhala : Skin-rabbit - Slight irritant tation: Eyes-rabbit - Sever sitization: Data not available available available available available available available carcinogenic to l	Flammability (s Explosion limit Vapor pressurr Vapor density Relative density Solubility(ies): Hazardo , sparks, open fla caustics, alumin rbon. tion-rat LC50: >5 t. re irritant.	solid/gas): Data not a ts: Lower / Upper: 2' e (mm Hg): 33 mm @ (Air = 1): 2.1 [Pure IP. (Specific gravity): 0.8* Complete in water. us polymerization: V ame and other sources ums, metals, nitroform	vailable. % / 12% [Pure IPA] 20°C [Pure IPA] A] Vill not occur. of ignition. I, oleum, chlorinated	Auto-ignition Decompos Viscosity: Molecular Molecular	n temperature: 399 ition temperatur Data not availab formu la: Mixtur weight: Mixture	9°C (750°F) ASTM-E659-78 [Pure II re: Data not available. le. re *[70% IP
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Conditions to avoid: Ex Incompatible materials: Hazardous decompositi Section 11 To Acute toxicity: Oral-rat Skin corrosion/irritation Serious eye damage/irri Respiratory or skin sen Germ cell mutagenicity: Carcinogenity: Data not NTP: Reasonably anticipa IARC classified: Group 2E OSHA: No component of CA Prop 65: A WARNING	cessive temperatures, heat Strong oxidizing materials, on products: Oxides of ca xicological information LD50: >2000 mg/kg; Inhala : Skin-rabbit - Slight irritant tation: Eyes-rabbit - Sever sitization: Data not available : available : available ated to be a human carcinog 3: Possibly carcinogenic to b	, sparks, open fla caustics, alumin ırbon. tion-rat LC50: >5 t. re irritant. ole	ame and other sources ums, metals, nitroform	of ignition. 1, oleum, chlorinated	compounds c	an react vigorous	sly with this alcohol.
Acute toxicity: Oral-rat I Skin corrosion/irritation Serious eye damage/irri Respiratory or skin sens Germ cell mutagenicity: Carcinogenity: Data not NTP: Reasonably anticipe IARC classified: Group 2E OSHA: No component of CA Prop 65: A WARNING	LD50: >2000 mg/kg; Inhala : Skin-rabbit - Slight irritant tation: Eyes-rabbit - Sever sitization: Data not availab Data not available : available ated to be a human carcinog 3: Possibly carcinogenic to b	t. re irritant. ble	i000 ppm/1hr [Isoprop	panol]			
Acute toxicity: Oral-rat I Skin corrosion/irritation Serious eye damage/irri Respiratory or skin sens Germ cell mutagenicity: Carcinogenity: Data not NTP: Reasonably anticipe IARC classified: Group 2E OSHA: No component of CA Prop 65: A WARNING	LD50: >2000 mg/kg; Inhala : Skin-rabbit - Slight irritant tation: Eyes-rabbit - Sever sitization: Data not availab Data not available : available ated to be a human carcinog 3: Possibly carcinogenic to b	t. re irritant. ble	5000 ppm/1hr [Isoprop	oanol]			
STOT-repeated exposur Aspiration hazard: Yes Potential health effects: Inhalation: Inhalation of h and irritation of the throat. Ingestion: Aspiration haz develop if this occurs. Skin: Prolonged or repea Eyes: Contact causes bu Signs and symptoms of	GI :This product can expose Data not available The substance or mixture is e: Data not available high vapor concentrations m Continued inhalation may	humans. [Phenol Is greater than or e you to Phenolph s classified as sp hay cause central result in unconso er the lungs (aspi ation and drying, welling, and/or bl health effects abo	phthalein] equal to 0.1% is ident thalein, which is know ecific target organ toxi nervous system depre ciousness and death. irated) when swallowed cracking and defatting urred vision.	rn to the State of Čali cant, single exposure ession resulting in diz d or vomited. Seriou of the skin which car	ifornia to caus e, category 3 v zziness, drows us lung damag	se cancer. with narcotic effer siness, nausea, v le and possible fa	
Section 12 Ec	ological information						
Toxicity to daphnia andToxicity to algae: ScenePersistence and degradMobility in soil: No dataOther adverse effects: ASection 13DiThese disposal guidelir	An environmental hazard ca sposal considerations	es: Daphnia mag e), LOEC50 = 1,8 Bioaccumu PBT and vi Innot be excluded	na (Crustacia), ÈC50 = 00 mg/l/7 days [Isopro ulative potential: No PvB assessment: No d in the event of unprof log-size quantities of	= >10,000 mg/l/24 ho panol] data available data available fessional handling or nly. Federal regula	disposal. ations may a	pply to empty c	container. State and/or local emical disposal agency.
Section 14 Tra	ansport information						
UN/NA number: UN? Hazard class: 3 Exceptions: Limited	1987 Shipping u Packing g quantity equal to or less	roup: III		nol) ble Quantity: No G Guide # 127		Ма	arine pollutant: No
	gulatory information	ha anhada d	to an allow how to the t				
A chemical is considered to b Component	e listed if the CAS number for t	he anhydrous form TSCA	is on the Inventory list. CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Isopropyl alcohol Phenolphthalein		Listed	Not listed Not listed	Not listed Not listed	Listed Listed	Not listed Not listed	WARNING -Cancer - www.P65Warnings.ca.gov.
	her information						

CORROSIVE STORAGE CODE WHITE

Page E1 of E2

Section 1

Identification

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FERRIC CHLORIDE, HEXAHYDRATE Product Synonyms Iron(III) Chloride, Hexahydrate Section 2 Hazards identification Signal word: DANGER Precautionary statement: Pictograms: GHS05 / GHS07 P234: Keep only in original container. Target organs: Eyes, Skin, Respiratory system, Liver, Gastrointestinal tract P406: Store in corrosive resistant container with a resistant inner liner. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell. **GHS Classification:** P302+P352: IF ON SKIN: Wash with plenty of water and soap. Corrosive to metals (Category 1) P332+P313: If skin irritation occurs: Get medical attention. Acute toxicity, oral (Category 4) P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove Skin irritation (Category 2) contact lenses, if present and easy to do. Continue rinsing. Eye damage (Category 1) P310: Immediately call a POISON CENTER or doctor. P362+P364: Take off contaminated clothing and wash it before reuse. GHS Label information: Hazard statement: P501: Dispose of contents/container to a licensed chemical disposal agency in H290: May be corrosive to metals. accordance with local/regional/national regulations. H302: Harmful if swallowed. H315: Causes skin irritation. H318: Causes serious eye damage.

Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards no	t otherwise classified	d (PHNOC) - Not Known	

Section 3 Composition / information on ingredients				
Chemical Name	CAS #	%	EINECS	
Ferric chloride, hexahydrate	10025-77-1	100%	231-729-4 [anhydrous]	
Section 4 First aid measures				

INGESTION: HARMFUL IF SWALLOWED. MAY CAUSE LIVER OR KIDNEYS DAMAGE. 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: MAY CAUSE EYE 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: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES 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: Do NOT use water! Dry chemicals, CO2 or other agents as appropriate for surrounding fires.

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. May release toxic fumes of Hydrogen chloride gas in a fire.

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 or vapors. 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. Avoid contact with humid or wet areas. Keep away from metals.

Section 8	Exposure controls / personal protection			
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits.	Iron salts, soluble, as Fe	TWA: 1 mg/m ³	No listing	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: 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 p	roperties					
Odor: Hydrochlo Odor threshold: pH: 2 (0.1M solu	Data not available. ition) ng point: 37°C (99°F) lata not available	Flammability Explosion lim Vapor pressu Vapor density Relative density	rate (=1): Data not ava (solid/gas): Data not ava nits: Lower / Upper: Data re (mm Hg): Data not ava / (Air = 1): >1 / (Specific gravity): Data n): 920 g/L in water.	ailable. ta not available vailable	Auto-ignit Decompo Viscosity: Molecular		e: Data not available u re: Data not available. ble. •6H ₂ O
Section 10	Stability and reactivity	vity					
	void: Excessive temperatures, he	at, water, potassiu	-	e materials.			
-	aterials: Water, oxidizing agents, omposition products: Hydrogen			conois.			
		gas on contact wi					
Section 11	Toxicological informatio	n					
Carcinogenity: NTP: No compor IARC: No compo OSHA: No comp	genicity: Data not available Data not available nent of this product present at leve onent of this product present at leve onent of this product present at leve onent of this product present at leve product does not contain any che	els greater than o vels greater than o	r equal to 0.1% is identifi or equal to 0.1% is identi	ed as probable, po fied as a carcinoge	ssible or conf n or potential	irmed human car carcinogen by O	
STOT-single exp STOT-repeated Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May cause Skin: May cause Eyes: May cause Signs and symp	posure: Data not available exposure: Data not available rd: Data not available	age. May also cau vision, burns, sev al health effects ab	use gastrointestinal dam	age. nent blindness.	-		oughing, shortness of breath, lun
STOT-single exp STOT-repeated Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May cause Eyes: May cause Signs and symp Additional infor Section 12	posure: Data not available exposure: Data not available rd: Data not available effects: or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama e severe irritation and/or burns. e severe irritation, tearing, blurred btoms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information	age. May also cau vision, burns, sev al health effects ab	use gastrointestinal dam	age. nent blindness.	-		oughing, shortness of breath, lun
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Page E1 of E2

Section 1

Identification

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Product	SODIUM FLUORIDE, 1 MOLAR SOLUTION	
Synonyms	Sodium Fluoride, Aqueous Solution	
Section 2	Hazards identification	
CHS Classi Acute toxicit Skin irritatio Eye irritation CHS Label H301: Toxic H315: Caus H320: Caus Supplement	ans: Skeletal system, Kidneys, Central nervous system	 Precautionary statement: P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor. P330: Rinse mouth. P302+P352: IF ON SKIN: Wash with plenty of water and soap. P332+P313: If skin irritation occurs: Get medical attention. P362+P364: Take off contaminated clothing and wash it before reuse. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical attention. 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) - Releases toxic hydrogen fluoride gas in contact with acids, Contact with acids liberates very toxic gas. Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on ingredients				
Chemical Name		CAS #	%	EINECS	
Water Sodium fluoride		7732-18-5 7681-49-4	95.97% 4.03%	231-791-2 231-667-8	
Section 4	First aid measures				

INGESTION: TOXIC 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: 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 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: Dry chemical, CO2 or water spray.

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 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 fluoride	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 misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-

Section 9	Physical and chem	ical properties					
	ata not available. ble. t: Approximately 0°C (32°F) (w ximately 100°C (212°F) (w	vater) Relative density Relative density	ate (Water = 1): <1 (solid/gas): Data not a its: Lower / Upper: D re (mm Hg): 14 (water) (Air = 1): 0.7 (water) (Specific gravity): Apprc : Complete in water.	ata not available	Auto-ignitio Decomposi Viscosity: Molecular f		e: Data not available ure: Data not available. ble. re
Section 10	Stability and reactive	vity					
Incompatible mate	Stable d: Excessive temperatur rials: Reacts with acids position products: Toxi	es which cause evapora to form corrosive and to	kic hydrogen fluoride. V	/ater solution is high		o many materials	5.
Section 11	Toxicological infor	mation					
Carcinogenity: Da NTP: No componen IARC: No componen OSHA: No compone OSHA: No compone Ca Prop 65: This pr Reproductive toxis STOT-single expos STOT-repeated ex Aspiration hazard: Potential health ef Inhalation: May be Ingestion: Toxic if s Skin: Causes skin i Eyes: Causes eye Signs and sympto may cause fluorosis	t of this product present a nt of this product present ent of this product present oduct does not contain an city: Data not available sure: Data not available bosure: Data not available fects: harmful if inhaled. wallowed. rritation. irritation.	at levels greater than or at levels greater than or it at levels greater than o ny chemicals known to t ole	equal to 0.1% is identif r equal to 0.1% is identi ne State of California to ed breathing, fever, cou	ed as probable, pos fied as a carcinoger cause cancer or rep gh, vomiting, abdom	sible or confirn or potential c roductive toxic	med human car arcinogen by O city.	
Section 12	Ecological information						
Toxicity to daphnia Toxicity to algae: S Persistence and de Mobility in soil: No Other adverse effe	cts: An environmental h	ertebrates: Daphnia mag s (Algae) EC50: 850 mg vailable Bioaccum PBT and v azard cannot be exclude	gna (Crustacea) EC50: 3 /L/72 hours [Sodium fluc ulative potential: No o PvB assessment: No	338 mg/L/48 hours [: oride] ata available data available		le]	
Section 13	Disposal considera						
nese disposal gu	e different. Dispose of	in accordance with a	local, state and fede	ral regulations or	contract with	a licensed che	container. State and/or loo emical disposal agency.
ogalationio maj s	Transport informa	tion					
			m fluorido colution				
Section 14 JN/NA number: Hazard class: 6		pping name: Sodiu cking group: III or less than 5 Lt	Reportal	ble Quantity: Ye Guide # 154	S	Ma	arine pollutant: No
Section 14 JN/NA number: Hazard class: 6 Exceptions: Lin	1 Pac	cking group: III or less than 5 Lt	Reportal		S	Ma	arine pollutant: No
Section 14 UN/NA number: Hazard class: 6 Exceptions: Lin Section 15 A chemical is considered	1 Pac nited quantity equal to Regulatory informa ed to be listed if the CAS nur	cking group: III or less than 5 Lt ation mber for the anhydrous form	Reportal 2020 ERC	Guide # 154			
Section 14 UN/NA number: Hazard class: 6 Exceptions: Lin Section 15	1 Pac nited quantity equal to Regulatory informa ed to be listed if the CAS nur	cking group: III or less than 5 Lt ation	Reportal 2020 ERC		S DSL Not listed	Ma NDSL Not listed	CA Prop 65 This product does not contain any chemicals known to the Si of California to cause cancer of reproductive toxicity.

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 Rochester Street "Cutting edge science for the classroom"

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 HYDROCHLORIC ACID, 32-36%	
Synonyms Muriatic Acid ; Hydrogen Chloride	
Section 2 Hazards identification	
Signal word: DANGER Pictograms: GHS05 / GHS07 Target organs: Respiratory system, skin, eyes, lungs.	 Precautionary statement(s): P234: Keep only in original container. P260: Do not breathe mist/vapours/spray. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. 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 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 breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 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. P390: Absorb spillage to prevent material damage. P403: P232: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P406: Store in corrosive resistant container with a resistant inner liner. 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) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Water Hydrochloric acid		7732-18-5 7647-01-0	64-68% 32-36%	231-791-2 231-595-7	
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: 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 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: Causes skin 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. 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.

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, dry, well-ventilated area away from incompatible substances. Protect from physical damage and sunlight. Protect from moisture.

Section 8	Exposure controls / personal protection			
Exposure Limits:	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: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical and chemical properties Evaporation rate (= 1): Data not available. Appearance: Clear, colorless, fuming liquid. Partition coefficient: (n-octanol / water): Data not available. Flammability (solid/gas): Data not available. Odor: Pungent odor. Auto-ignition temperature: Data not available Explosion limits: Upper/Lower: Data not available. Odor threshold: Data not available. Decomposition temperature: Data not available. Vapor pressure (mm Hg): Approx. 25 @ 20°C (68°F) pH: <1.5 acidic, in solution. Viscosity: Data not available. Vapor density (Air = 1): Data not available. Melting / Freezing point: Approx. -45°C (-49°F) Molecular formula: HCI Boiling point: 81.11-85°C (178-185°F) Relative density (Specific gravity): Approx. 1.16 @ 20°C Molecular weight: 36.46 Solubility(ies): Soluble in water. Flash point: Not flammable. Section 10 Stability and reactivity 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, formaldehvde Hazardous decomposition products: Hydrogen chloride gas. Section 11 **Toxicological information** Acute toxicity: Data not available Skin corrosion/irritation: Skin-rabbit - causes burns. Serious eye damage/irritation: Eyes-rabbit - Corrosive to eyes. 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 carcinogen or potential carcinogen by NTP. IARC: Group 3: Not classifiable as to its carcinogenicity to humans. 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. 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: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: May be harmful if inhaled. Material is extrememy destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. Skin: May be harmful if absorbed through skin. Causes skin burns. Eves: Causes eve burns. 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 #: MW4025000 Section 12 Ecological information Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid) Toxicity to daphnia and other aquatic invertebrates: No data available Toxicity to algae: 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 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 UN/NA number: UN1789 Shipping name: Hydrochloric acid Hazard class: 8 Packing group: II Reportable Quantity: No Marine pollutant: No Exceptions: Limited quantity equal to or less than 1 Lt 2020 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. RCRA code DSL NDSL Component TSCA CERLCA (RQ) CA Prop 65 This product does not contain Hydrochloric acid Listed Not listed D002 Listed Not listed any chemicals known to the State of California to cause cancer or reproductive toxicity. Section 16 Other information

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Section 1

Identification

INNOVATING SCIENCE[®] by Aldon 221 Roll

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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.

Product AMMONIUM HYDROXIDE, 28-30%	
Synonyms Ammonium Hydroxide, Water Solution	
Section 2 Hazards identification	
Signal word: DANGER Pictograms: GHS05 / GHS09 Target organs: Eyes, Skin, Mucous membranes	 Precautionary statement: P260: Do not breathe mist/vapours/spray. 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. 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 breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312: Call a POISON CENTER or doctor if you feel unwell. P363: Wash contaminated clothing before reuse. 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	Composition / information on ingredients						
Chemical Name		CAS #	%	EINECS			
Water Ammonium hydroxid	e (as Ammonia)		oximately 70-72% oximately 28-30%	231-791-2 215-647-6			
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: 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 protection						
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
	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 ma/m ³ : STEL: 27 ma/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.			, 5	, ,	I	,	
Section 9	Physical and chemical pro	perties					
Appearance: Clear, Odor: Strong, punge Odor threshold: Dat pH: Data not availab Melting / Freezing po Boiling point: 36°C Flash point: Data not	colorless liquid. nt, suffocating odor. a not available. e. bint: -77°C (-106°F) (97°F)	Evaporation ra Flammability (Explosion limi Vapor pressur Vapor density Relative densi	ate (Water = 1): 1 solid/gas): Data not a ts: Lower / Upper: 1 e (mm Hg): 115 mm ((Air = 1): 0.6-1.2 ty (Specific gravity): 0 : Complete in water.	5% / 27%(NH ₃ gas) 0 20°C (68°F)	Auto-ignitie Decompos Viscosity: Molecular f		: 651°C (1204°F) re: Data not available. ole.
Section 10	Stability and reactivity				1		
	Stable : Excessive temperatures which als: Acids, strong oxidizers, hal	cause evapora		Vill not occur.			
	osition products: Decomposes			2°F) to hydrogen ga	as and nitroger	n oxides.	
	p	J-		, ,	j-·		
Section 11 Toxicological information Acute toxicity: Oral-rat LD50: 350 mg/kg [Ammonium hydroxide, anhydrous] Skin corrosion/irritation: Skin-rabbit - Severe irritant. Serious eye damage/irritation: Eyes-rabbit - Severe irritant. Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available MTP: 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. LARC: 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: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects. STOT-repeated exposure: Data not available Potential health effects: Inhalation: Burning sensation, cough, labored breathing, shortness of breath, sore throat. Ingestion: Abdominal cramps, abdominal pain, sore throat, vomiting, Skin: Redness, skin burns, pain, blisters. Eyes: Redness, pain, blurred vision, burns. Signs and symptoms of exposure: Material is extremely destructive to tissue of the mucous membranes, uppe							
Toxicity to daphnia Toxicity to algae: TL Persistence and deg Mobility in soil: No	60 Lepomis macrochirus (bluegil and other aquatic invertebrate m Diatom (algae) 420 mg/L/120 gradability: No data available data available ts: An environmental hazard cai	s: LC50 Daphni H @ 22°C (50% Bioaccum PBT and v	a magna (water flea) 0 growth reduction) ulative potential: No PvB assessment: No	lata available data available			
Section 13	Disposal considerations						
regulations may be	delines are intended for the d different. Dispose of in acco						
Section 14 UN/NA number:	Transport information	amo: Amma					
Hazard class: 8	DN2072 Shipping r Packing gi ted quantity equal to or less	•	Reporta	ble Quantity: 1,0 CG Guide # 154	000 lbs (454	kg) Ma	arine pollutant: No
Section 15 Regulatory information							
	to be listed if the CAS number for the	•	•	DODA	50:		04.0
Compone		TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL Not listed	CA Prop 65 This product does not contain
Ammonium hydroxide		Listed	1,000 lbs (454 kg)	Not listed	Listed	Not listed	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	ty of any kind. En	ployers should use this in	formation only as a su	pplement to othe	er information gathe	ered by them and must make indepen-