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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.

BROMINE WATER Product Synonyms Bromine, Saturated Water / Bromine Section 2 Hazards identification Signal word: DANGER Precautionary statement: Pictograms: GHS05 / GHS06 / GHS09 P260: Do not breathe mist/vapours/spray. Target organs: None known 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. P284: Wear respiratory protection. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. **GHS Classification:** P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated Skin corrosion (Category 1A) clothing. Rinse skin with water/shower. Acute toxicity, inhalation (Category 2) P363: Wash contaminated clothing before reuse. Aquatic toxicity acute (Category 1) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. GHS Label information: Hazard statement: P310: Immediately call a POISON CENTER or doctor. H314: Causes severe skin burns and eye damage. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove H330: Fatal if inhaled. contact lenses, if present and easy to do. Continue rinsing. H400: Very toxic to aquatic life. P391: Collect spillage P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Hazards not otherwise classified:

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

Section 3	Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS		
Water Bromine		7732-18-5 7726-95-6	97% 3%	231-791-2 231-778-1		
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. 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: Carbon dioxide, dry chemical, dry sand, alcohol foam. 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. 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: Recover for reuse if not contaminated. 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.

Section 7 Handling and storage 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, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure controls / personal protection					
Exposure Limiter	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Limits:	Bromine	TWA: 0.66 mg/m ³ STEL: 1.3 mg/m ³	TWA: 0.7 mg/m ³	TWA: 0.7 mg/m ³ STEL: 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/MSHAnirator wodr

approved respirator.			Ū				
Section 9	Physical and chemical pr	operties					
Appearance: Clear, red-brown liquid Evaporation rate (Ether = 1): >1 Partition coefficient: Odor: Strong characteristic odor Flammability (solid/gas): Data not available Auto-ignition tempera Odor threshold: Data not available Explosion limits: Lower / Upper: Data not available Partition coefficient: PH: Data not available Vapor pressure (mm Hg): 175 mm @ 21°C [Bromine] Decomposition tempera Melting / Freezing point: 0°C (32°F) Relative density (Specific gravity): 1.01 @ 20°C Molecular formula: M Boiling point: Data not available Solubility(ies): 3.35 g/100 ml water @ 25°C Molecular weight: Mi					on temperature: ition temperature Data not availab formula: Mixture	: Data not available re: Data not available ele e	
Section 10	Stability and reactivity						
Conditions to avoid Incompatible mater	Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Excessive temperatures and other sources of ignition. Incompatible materials: Strong oxidizers, reactive materials. Heat of reaction may cause ignition of combustible materials. Hazardous decomposition products: Bromine gas.						
Section 11	Toxicological information						
Acute toxicity: Oral-rat LD50: 2600 mg/kg ; Inhalation-rat LC50: 2.7 mg/L Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC. 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: Data not available STOT-single exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Inhalation causes cough, sore throat, shortness of breath, dizziness, headache, wheezing, labored breathing. Symptoms may be delayed. Ingestion: Ingestion causes sums in mouth and throat, burning sensation in the throat and chest, abdominal pain, shock or collapse. Skin: Contact with skin causes redness, burning sensation, pain, and burns. Eyes: Contact causes watering of the eyes, redness, blurred vision, pain, and burns. Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards. Additional information: RTECS #: EF9100000							
Section 12	Ecological information						
Toxicity to fish: Carassium auratus (fish, fresh water), LC1000 = 20 mg/L Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC100 = 10 mg/L Toxicity to algae: Chlorella pyrenoidosa (Algae), 100% reduction = >0.42 mg/L/96 hours 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.							
These disposal gui	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 Section 14	different. Dispose of in acc Transport information	ordance with all	local, state and fed	eral regulations or	contract with	a licensed che	emical disposal agency.
UN/NA number: Hazard class: 8, Exceptions: No e	UN1744 Shipping (6.1) Packing g exceptions 2020 ERG		e solutions (Inhala Reportal	tion hazard "Zone ble Quantity: No	A")	Ma	arine pollutant: No
Section 15	Regulatory information	the extends of the	a an tha law of the				
A chemical is considered Compone	to be listed if the CAS number for	the anhydrous form i TSCA	s on the Inventory list. CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Bromine		Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information		dan se a la compañía de la compañía	formation a f		and a second	
							ered 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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Section 1

Identification

"Cutting edge science for the classroom"

AIGON 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 CHLORINE WATER, SATURATED	
Synonyms Chlorine Test Solution	
Section 2 Hazards identification	
Signal word: DANGER Pictograms: GHS06 / GHS09 Target organs: Digestive and respiratory tracts Image: Signal word: Digestive and respiratory tracts Store Signal word: Digestive and respiratory tracts Image: Signal word: Digestitee Image: Digestit	 Precautionary statement: P261: Avoid breathing 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. 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+P364: Take off contaminated clothing and wash it before reuse. P305+P364: Take off contaminated clothing and wash it before reuse. P305+P313: If eye irritation persists: Get medical attention. P337+P313: If eye irritation persists: Get medical attention. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P311: Call a POISON CENTER or doctor. 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.

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 Chlorine gas		7732-18-5 7782-50-5	99.4% Saturated	231-791-2 231-959-5		
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: TOXIC 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 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: 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: 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. Liberates toxic chlorine gas when heated above 20°C (68°F).

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.

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

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

Section 8	Exposure controls / personal protection				
Exposure Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Limits:	Chlorine	TWA: 0.5 ppm / 1.5 mg/m ³ (A4)	STEL: C 1 ppm / C 3 mg/m ³	STEL: C 0.5 ppm / C 1.45 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.

approved respirator.							
Section 9 F	Physical and chemical pro	perties					
Appearance: Liquid. Pa Odor: Chlorine odor Odor threshold: Data r pH: Data not available Melting / Freezing poin Boiling point: Decomp Flash point: Data not a	not available t: 0°C (32°F) oses	Flammability (Explosion limi Vapor pressure Vapor density Relative densit	te (Ether = 1): >1 solid/gas): Data not a ts: Lower / Upper: D e (mm Hg): Unknown (Air = 1): Unknown ty (Specific gravity): Soluble in water	ata not available	Auto-ignitic Decomposi Viscosity: Molecular f		: Data not available re: Data not available ele e
Section 10 S	Stability and reactivity						
Chemical stability: Sta Conditions to avoid: E	able Excessive temperatures and h		us polymerization: \	Vill not occur.			
Incompatible materials	Hydrogen, may form explose	sive mixtures. E	ther, ammonia, turpen	tine, hydrocarbons a	and powdered r	netals.	
Hazardous decomposi	tion products: Chlorine gas.						
Section 11 T	oxicological information						
Acute toxicity: Data not available Skin corrosion/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. Reproductive toxicity: Data not available STOT-single exposure: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Harmful if inhaled. Can cause fatal pulmonary edema. Ingestion: Harmful if swallowed. Skin: Causes skin irritation. Eyes: Causes skin irritation. Eyes: Causes skin irritation. Sters: Stors exposure: Exercise appropriate procedures to minimize potential hazards.							
	:: RTECS #: FO2100000 [Ch cological information						
Toxicity to fish: No data available Toxicity to daphnia and other aquatic invertebrates: No data available Toxicity to algae: No data available Persistence and degradability: 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.							
	ransport information						
UN/NA number: UN1760 Shipping name: Corrosive liquids, n.o.s., (Chlorine water solution) Hazard class: 8 Packing group: III Reportable Quantity: 10 lbs. (4.54 kg) Marine pollutant: Listed Exceptions: Limited quantity equal to or less than 5 L 2020 ERG Guide # 154							
	Regulatory information	o ophydraus fa	is on the Inventory list				
A chemical is considered to Component	be listed if the CAS number for th	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Chlorine		Listed	10 lbs. (4.54 kg)	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16 C	Other information						
The information contained h	nerein is furnished without warrant						reproductive toxicity. ered by them and must make indepe s. NTP: National Toxicology Program

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

GENERAL STORAGE CODE GREEN

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Section 1

Identification

INNOVATING SCIENCE[®] by Aldon 221 Roch

"Cutting edge science for the classroom"

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

Product	COPPER METAL	
Synonyms	Copper Metal Foil / Copper Foil	
Section 2	Hazards identification	
to the Glob Chemicals. Signal word Pictograms Target orga GHS Classi GHS Label	ance or mixture has not been classified as hazardous according ally Harmonized System (GHS) of Classification and Labeling of : Not classified ins: Liver, Kidneys fication: Not classified information: Hazard statement(s): Not classified ary statement(s): Not classified	Supplemental information: SHARP EDGES! ABRASIVE TO SKIN. USE CARE WHEN HANDLING. Do not breathe dust or fume. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Hazards not otherwise classified:

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

Section 3	Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS		
Copper metal		7440-50-8	100%	231-159-6		
Section 4	First aid measures	1	1	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: HARMFUL IF INHALED AS FUME. 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: Use triclass, dry chemical fire extinguisher. Do NOT use water on fire where molten metal is present.

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. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents.

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.

ection 7	Handling and	storage			Page E2 of E2
and label on contain	or boforo uning	Do not wear contact langes when working with chemicals	Keen container tightly closed	Keen out of reach of children	Lloo with

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale fumes from molten metals. Wash thoroughly after handling. Remove and wash clothing before reuse.

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

Section 8	Exposure controls / personal protection					
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Limits:	Copper, dusts and mists, as Cu	TWA: 1 mg/m ³	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: 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	
Appearance: Solid. Red-brown, lustrous metal. Turns green on exposure to moist air. Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: 1083°C (1981°F) Boiling point: 2595°C (4703°F) Flash point: Not applicable	Evaporation rate (=1): Not applicable Flammability (solid/gas): Not applicable Explosion limits: Lower / Upper: Not applicable Vapor pressure (mm Hg): 1 mm @ 1628°C Vapor density (Air = 1): Data not available Relative density (Specific gravity): 8.92 @ 20°C Solubility(ies): Insoluble	Partition coefficient: Data not available Auto-ignition temperature: Not applicable Decomposition temperature: Data not available. Viscosity: Data not available. Molecular formula: Cu Molecular weight: 63.55
Section 10 Stability and reactivity		

Chemical stability: Stable

S

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures and heat. Incompatibilities with other materials: Strong oxidizers may cause a violent reaction.

Hazardous decomposition products: At temperatures above melting point, toxic fumes or vapors may be emitted.

Section 11 Toxicological information Acute toxicity: Data not available Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. 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: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Inhalation of dust or fumes may irritate respiratory system. Symptoms include cough, headache, sore throat, shortness of breath. Ingestion: May be harmful if swallowed. Symptoms include abdominal pain, nausea, vomiting. Skin: May cause irritation and redness. Eyes: Contact with eyes may cause redness and pain. Signs and symptoms of exposure: Over-heating of alloy can produce metal fumes and oxides. Fumes of copper may cause metal fume fever with flu-like symptoms and skin and hair discolorization. Copper dust and fume cause irritation of the upper respiratory tract, metallic taste in the mouth, and nausea. Chronic poisoning results in Wilson's disease characterized by a hepatic cirrhosis, brain damage, denyelination, renal disease and copper depostion in the cornea. Additional information: RTECS #: GL5325000 Section 12 **Ecological information** Toxicity to fish: No data available 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 PBT and vPvB assessment: No data available Mobility in soil: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Section 13 **Disposal considerations** These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may 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.

regulatione may be	alliorent. Diopoco o		in loodi, otato ana loa	iorar rogalationo ol	oomaaot man		simoar alopooar agomoy.
Section 14	Transport informa	tion					
UN/NA number: Hazard class: No Exceptions: No	ot applicable	Shipping name: Packing group: 2020 ERG Guide :	Not applicable	Reportable Qu	antity: No	М	arine pollutant: No
Section 15	Regulatory information	ation					
A chemical is considere	d to be listed if the CAS nu	mber for the anhydrous for	m is on the Inventory list.				
Compone	ent	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Copper		Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information						
dent determinations of	suitability and completenes ency for Research on Cance	s of information from all so	urces to assure proper use	of these materials and	the safety and h	ealth of employee	ered by them and must make indepen- s. NTP: National Toxicology Program, oosure, RE: Repeated Exposure,

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Section 1

Synonyms

Identification

INNOVATING SCIENCE® by Aldon 221 Root

"Cutting edge science for the classroom"

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

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

Product COPPER(II) NITRATE, 0.1 MOLAR SOLUTION

Cupric Nitrate, Water Solution

Section 2 Hazards identification	
Signal word: WARNING Pictograms: GHS07 / GHS09 Target organs: Liver	 Precautionary statement: P264: Wash hands thoroughly after handling. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P312: IF SWALLOWED: 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. P337+P313: If eye irritation persists: Get medical attention. 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. P391: Collect spillage. 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 Cupric nitrate, trihyd	Irate	7732-18-5 10031-43-3	97.584% 2.416%	231-791-2 221-838-5 [anhydrous]	
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 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: 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.

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 protect	tion		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Copper, dusts & mists, as Cu	TWA: 1 mg/m ³	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: 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	Physical and chem	nical properties	\$					
	Data not available. able. nt: Approximately 0°C (32°F) (v roximately 100°C (212°F) (v	(water) Relative	ration rate (Water = 1): <1 ability (solid/gas): Data not sion limits: Lower / Upper: I pressure (mm Hg): 14 (wate density (Air = 1): 0.7 (water) e density (Specific gravity): App lity(ies): Complete in water.	Data not available r)	Auto-ignit Decompo Viscosity: Molecular	•	e: Data not available ure: Data not available ble. re	9.
Section 10	Stability and reacti	tivity						
Chemical stability Conditions to avo	: Stable id: Excessive temperatu		Hazardous polymerization: evaporation.	Will not occur.				
ncompatible mate	erials: Strong oxidizing a	agents, aluminum	n cyanides, esters, sodium hyp	ophosphite, stannous	chloride and	thiocyanates.		
Hazardous decom	position products: Nitro	rogen oxides, cop	oper oxides and copper dust.					
Section 11	Toxicological infor	rmation						
OSHA: No compon Ca Prop 65: This p Reproductive toxi	nent of this product preser roduct does not contain a	nt at levels greate	r than or equal to 0.1% is iden er than or equal to 0.1% is ide own to the State of California	ntified as a carcinoge	n or potential	carcinogen by OS		
STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmfu Ingestion: Harmfu Skin: Contact with Eyes: Contact with Signs and symptc procedures to minin	sure: Data not available posure: Data not available ffects: I if inhaled. I if swallowed. skin causes irritation and n eyes causes irritation and ms of exposure: Mater mize potential hazards.	able d/or burns. nd/or burns. rial is extremely c	lestructive to tissue of the muc	cous membranes and	upper respira	tory tract, eyes, a	and skin. Exercise app	propria
STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmfu Ingestion: Harmfu Skin: Contact with Eyes: Contact with Signs and symptc procedures to minin	sure: Data not available posure: Data not available ffects: Il if inhaled. If swallowed. skin causes irritation and n eyes causes irritation and oms of exposure: Mater	able d/or burns. nd/or burns. rial is extremely c 75000 [Cupric nit		ous membranes and	upper respira	tory tract, eyes, a	and skin. Exercise app	propria
STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmfu Ingestion: Harmfu Signs and sympto procedures to minin Additional informa Section 12 Toxicity to fish: N Toxicity to fish: N Toxicity to algae: I Persistence and d Mobility in soil: N	sure: Data not available cposure: Data not available ffects: I if inhaled. I if swallowed. skin causes irritation and neyes causes irritation and is and other aquatic inve No data available is and other aquatic inve is a a a a a a a a a a a a a a a a a a a	able d/or burns. nd/or burns. rial is extremely of 75000 [Cupric nit ation rertebrates: No d wailable Bio PE	rate]	o data available lo data available		tory tract, eyes, a	and skin. Exercise app	propria
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STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmful Skin: Contact with Eyes: Contact with Eyes: Contact with Gigns and sympto procedures to minin Additional informa Section 12 Foxicity to fish: N Foxicity to fish: N Foxicity to algae: I Persistence and d Mobility in soil: N Dther adverse effe Section 13 Fhese disposal g	sure: Data not available posure: Data not available ffects: a if inhaled. if iswallowed. skin causes irritation and neyes causes irritation and the cause	d/or burns. nd/or burns. rial is extremely of 75000 [Cupric nit ation rertebrates: No d available Bio PE nazard cannot be rations for the disposa	rate] lata available oaccumulative potential: No 8T and vPvB assessment: N	o data available lo data available ofessional handling o only. Federal regul	[,] disposal. ations may a	pply to empty c	container. State and/	/or loc
STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmful Ingestion: Harmful Skin: Contact with Eyes: Contact with Eyes: Contact with Gigs and sympto procedures to minin Additional informa Section 12 Foxicity to fish: N Foxicity to fish: N Foxicity to algae: I Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal gregulations may be	sure: Data not available posure: Data not available ffects: a if inhaled. if iswallowed. skin causes irritation and neyes causes irritation and the cause	d/or burns. nd/or burns. rial is extremely of 75000 [Cupric nit ation rertebrates: No d wailable Bit PE nazard cannot be rations for the disposa of in accordance	rate] lata available oaccumulative potential: No BT and vPvB assessment: N excluded in the event of unpr I of catalog-size quantities	o data available lo data available ofessional handling o only. Federal regul	[,] disposal. ations may a	pply to empty c	container. State and/	/or loc
STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmful Skin: Contact with Eyes: Contact with Eyes: Contact with Gigns and sympto procedures to minin Additional informa Section 12 Foxicity to fish: N Foxicity to fish: N Foxicity to daphni Foxicity to algae: I Persistence and d Mobility in soil: N Other adverse effe Section 13 Fhese disposal gregulations may b Section 14 JN/NA number: Hazard class: N	sure: Data not available posure: Data not available frects: al if inhaled. if swallowed. skin causes irritation and neyes causes irritation and a set of exposure: Mater Ecological informa Io data available Begradability: No data available Begradability: N	d/or burns. nd/or burns. rial is extremely of 75000 [Cupric nit ation rertebrates: No d wailable Bit PE nazard cannot be rations for the disposa of in accordance ation Shipping na Packing gro	rate] lata available oaccumulative potential: No BT and vPvB assessment: N excluded in the event of unpr I of catalog-size quantities	o data available lo data available ofessional handling o only. Federal regul	disposal. ations may a contract with	ipply to empty c a licensed che	container. State and/	/or loc ncy.
STOT-repeated ex Aspiration hazard Potential health ei nhalation: Harmful Nigestion: Harmful Skin: Contact with Signs and sympto procedures to minin Additional information additional	sure: Data not available rposure: Data not available frects: a if inhaled. if swallowed. skin causes irritation and a eyes causes irritation and a and other aquatic invertion Not data available a and other aquatic invertion Not applicable ot applicable a policable Regulatory information A applicable A A A A A A A A A A A A A A A A A A A	d/or burns. nd/or burns. rial is extremely of 75000 [Cupric nit ation rertebrates: No d wailable Bit PE hazard cannot be rations for the disposa of in accordance ation Shipping na Packing gro 2020 ERG G ation	rate] lata available oaccumulative potential: No BT and vPvB assessment: No excluded in the event of unpr I of catalog-size quantities e with all local, state and feo ame: Not Regulated oup: Not applicable Guide # Not applicable	o data available lo data available ofessional handling o only. Federal regul deral regulations or	disposal. ations may a contract with	ipply to empty c a licensed che	container. State and/ emical disposal agen	/or loc ncy.
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STOT-repeated ex Aspiration hazard Potential health el Inhalation: Harmful Ingestion: Harmful Skin: Contact with Eyes: Contact with Signs and sympto procedures to minin Additional inform: Section 12 Toxicity to fish: N Toxicity to fish: N Toxicity to algae: I Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal gr regulations may b Section 14 UN/NA number: Hazard class: N Exceptions: No Section 15	sure: Data not available cosure: Data not available ffects: I finaled. I finaled. I fiswallowed. skin causes irritation and eyes causes irritation and eyes causes irritation and neyes causes irritation and the eyes cause irritation and the eyes and the eyes and the eyes and the eyes and the eyes and	d/or burns. nd/or burns. rial is extremely of 75000 [Cupric nit ation rertebrates: No d wailable Bit PE hazard cannot be rations for the disposa of in accordance ation Shipping na Packing gro 2020 ERG G nation umber for the anhyo	rate] lata available oaccumulative potential: No BT and vPvB assessment: No excluded in the event of unpr I of catalog-size quantities e with all local, state and feo ame: Not Regulated oup: Not applicable Guide # Not applicable	o data available lo data available ofessional handling o only. Federal regul deral regulations or	disposal. ations may a contract with	ipply to empty c a licensed che	container. State and/ emical disposal agen	/or loc ncy. 0 55 zontain o the St

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Section 1

Identification

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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 IODINE WATER SOLUTION

Synonyms None assigned

Section 2 Hazards identification

Signal word: WARNING

Pictograms: GHS07 / GHS09 Target organs: Thyroid, kidneys, endocrine system, skin, eyes, reproductive system, central nervous system.



GHS Classification:

Acute toxicity, oral (Category 4) Acute toxicity, inhalation (Category 4) Aquatic Acute (Category 1)

GHS Label information: Hazard statement(s):

H312: Harmful in contact with skin. H332: Harmful if inhaled. H400: Very toxic to aquatic life. Precautionary statement(s): P261: Avoid breathing mist/vapours/spray. 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. P302+P352: IF ON SKIN: Wash with plenty of water and soap. P312: Call a POISON CENTER or doctor if you feel unwell. P362+P364: Take off contaminated clothing and wash it before reuse. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P391: Collect spillage. 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 Iodine		7732-18-5 7553-56-2	99% 1%	231-791-2 231-442-4	
Section 4	First aid measures				

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: HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Harmful if inhaled.

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: HARMFUL IN CONTACT WITH SKIN. Remove contaminated clothing. Flush thoroughly with mild scap and water. If irritation occurs, get medical attention. Harmful in contact with skin.

Section 5 Fire fighting measures

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

General information: 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.

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

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, mist or spray. Wash thoroughly after handling. Remove and wash clothing before reuse.

Section 8 Exposure controls / personal protection **Chemical Name** ACGIH (TLV) OSHA (PEL) NIOSH (REL) Exposure Limits: TWA: 0.01 ppm^(IFV)/ STEL: 0.1 ppm^(V) Iodine CAS # 7553-56-2 STEL: C 0.1 ppm/C 1 mg/m³ STEL: C 0.1 ppm/C 1 mg/m³ Engineering controls: Facilities storing or utilizing this material should be equipped with an evewash 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. Physical and chemical properties Section 9 Appearance: Deep amber liquid. Evaporation rate (Water = 1): < 1 Partition coefficient: (n-octanol / water): Not applicable Odor: Characteristic odor Flammability (solid/gas): Not applicable. Auto-ignition temperature: Not applicable Odor threshold: Not applicable. Explosion limits: Lower / Upper: Not applicable Decomposition temperature: Data not available. Vapor pressure (mm Hg): 14 [water] Viscosity: Data not available. pH: Data not available Melting / Freezing point: ~ 0°C (~ 32°F) [water] Vapor density (Air = 1): 0.7 [water] Molecular formula: Mixture Boiling point: ~ 100°C (212°F) [water] Relative density (Specific gravity): 1.0 [water] Molecular weight: Mixture Flash point: Not flammable. Solubility(ies): Complete in water. Section 10 Stability and reactivity Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Stable under recommended storage conditions. Excessive temperatures which cause evaporation. Incompatibilities with other materials: Metals or unsaturated organic compounds, ammonia solutions or alkaline solutions of ammonia salts. Will form explosive nitrogen iodides when reacted with gaseous ammonia. Hazardous decomposition products: Toxic iodide fumes. Section 11 **Toxicological information** Acute toxicity: Oral-Rat LD50: 14,000 mg/kg [lodine CAS # 7553-56-2] Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Inhalation-rat 3.1 mg/m³ / 24 hour / 13 weeks - continuous [lodine CAS # 7553-56-2] Germ cell mutagenicity: Data not available Carcinogenity: Data not available IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTF 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: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Symptoms include cough, wheezing, and labored breathing. Symptoms may be delayed. Ingestion: Causes abdominal pain, diarrhea, nausea, and vomiting. Ingestion of levels of 2-3 grams of iodine may cause death. Skin: Contact may cause redness and pain. Eyes: Contact causes watering of the eyes, redness and pain. Signs and symptoms of exposure: Effects of short-term exposure: Lachrymator. The substance is severely irritating to the eyes and the respiratory tract, and is irritating to the skin. Inhalation of the vapor may cause asthma-like reactions. Inhalation of the vapor may cause lung edema. The effects may be delayed. Effects of long-term exposure: Repeated or prolonged contact may cause skin sensitization in rate cases. Repeated or prolonged inhalation exposure may cause asthma-like syndrome. The substance may have effects on the thyroid. Specific data not available for this mixture. Exercise appropriate procedures to minimize potential hazards.. Additional information: RTECS #: NN1575000 [lodine CAS # 7553-56-2] Section 12 Ecological information Toxicity to fish: Very toxic to aquatic life 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. **Disposal considerations** Section 13 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: Not applicable Shipping name: Not Regulated Hazard class: Not applicable Packing group: Not applicable Reportable Quantity: No Marine pollutant: No **Exceptions:** Not applicable 2020 ERG Guide # Not applicable Section 15 **Regulatory information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. CERLCA (RQ) RCRA code DSL NDSL Component TSCA CA Prop 65 This product does not contain lodine Listed Not listed Not listed Listed Not listed any chemicals known to the State Potassium iodide Listed Not listed Not listed Listed Not listed of California to cause cancer or reproductive toxicity. 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 independent 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

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Section 1

Identification

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LEAD METAL, FOIL Product Synonyms Lead Hazards identification Section 2 Signal word: DANGER Precautionary statement: Pictograms: GHS07 / GHS08 / GHS09 P201: Obtain special instructions before use. Target organs: Lungs, Kidneys P202: Do not handle until all safety precautions have been read and understood. P260: Do not breathe dust. 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. P273: Avoid release to the environment. **GHS Classification:** P280: Wear protective gloves/protective clothing/eye protection/face protection. Acute toxicity, oral (Category 4) P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or Acute toxicity, inhalation (Category 4) doctor if you feel unwell Reproductive toxicity (Category 1A) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for Carcinogenicity (Category 2) breathing STOT RE (Category 2) P312: Call a POISON CENTER or doctor if you feel unwell. Aquatic acute (Category 1) P391: Collect spillage Aquatic chronic (Category 1) P308+P313: IF exposed or concerned: Get medical attention. P405: Store locked up. GHS Label information: Hazard statement: P501: Dispose of contents/container to a licensed chemical disposal agency in H302: Harmful if swallowed. accordance with local/regional/national regulations. H332: Harmful if inhaled. H351: Suspected of causing cancer Supplemental information: H360: May damage fertility or the unborn child. SHARP EDGES! Handle with caution. H373: May cause damage to organs through prolonged or repeated exposure. H410: Very toxic to aquatic life with long lasting effects. 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	
Lead metal		7439-92-1	>99%	231-100-4	
Section 4	First aid measures	1	1		

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

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

EYE CONTACT: MAY CAUSE 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. Do not use water on fire where molten metal is present.

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. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Molten lead may explde on contact with water.

Section 6 Accidental release measures

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

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

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

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

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

Section 8	Exposure controls / personal prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Lead and inorganic compounds	TWA: 0.05 mg/m ³ (A3)	TWA: 0.05 mg/m ³	TWA: 0.05 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	
 Appearance: Solid. Silvery-gray, metallic foil Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: 327°C (621°F) Boiling point: 1753°C (3187°F) Flash point: Data not available 	Evaporation rate (=1): Data not available Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): Data not available Relative density (Specific gravity): 11.34 (20/4°C) Solubility(ies): Insoluble in water.	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available. Viscosity: Data not available. Molecular formula: Pb Molecular weight: 207.19
Section 10 Stability and reactivity		
Chemical stability: Stable Conditions to avoid: Excessive temperatures and Incompatible materials: Strong oxidizers, hydroge Hazardous decomposition products: Lead fumes	en peroxide, acids.	
Section 11 Toxicological information	1	
Acute toxicity: Data not available Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available		

Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: Reasonably anticipated to be a human carcinogen IARC classified: Group 2B: Possibly carcinogenic to humans. OSHA: This product contains a chemical known to cause cancer. CA Prop 65: 🛆 WARNING! : This product can expose you to chemicals including Lead and lead compounds, which are known to the State of California o cause cancer and birth defects or other reproductive harm. 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: Inhalation: Inhalation of dust or fume can cause lead poisoning Ingestion: May cause anorexia, vomiting, malaise, convulsions, due to increased intracranial pressure. Skin: Contact with skin may cause irritation. Eyes: Contact with eyes may cause transient irritation. Signs and symptoms of exposure: Danger of cumulative effects. Exercise appropriate procedures to minimize potential hazards Additional information: RTECS #: OF7525000 Section 12 Ecological information Toxicity to fish: No data available 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: Not applicable Shipping name: Not Regulated Hazard class: Not applicable Packing group: Not applicable Reportable Quantity: No Marine pollutant: No 2020 ERG Guide # Not applicable **Exceptions:** Not applicable 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 Lead metal Listed Not listed D008 Listed Not listed MARNING -Cancer and Reproductive Harm - www.P65Warnings.ca.gov. 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-

The information contained nerven is turnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent 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.

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Section 1

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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.

LEAD NITRATE, 0.1 MOLAR SOLUTION Product Synonyms Lead Dinitrate, Aqueous Solution Section 2 Hazards identification Signal word: DANGER Precautionary statement(s): Pictograms: GHS08 / GHS09 P201: Obtain special instructions before use. Target organs: Blood, Central nervous system P202: Do not handle until all safety precautions have been read and understood. 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. P273: Avoid release to the environment. GHS Classification: P280: Wear protective gloves/protective clothing/eye protection/face protection. Acute toxicity, Oral (Category 5) P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or Eye irritation (Category 2B) doctor if you feel unwell. Acute toxicity, Inhalation (Category 5) P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove Reproductive toxicity (Category 1A) contact lenses, if present and easy to do. Continue rinsing. STOT-RE (Category 2) P337+P313: If eye irritation persists: Get medical attention. Acute aquatic toxicity (Category 1) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for Chronic aquatic toxicity (Category 1) breathing P308+P313: IF exposed or concerned: Get medical attention. GHS Label information: Hazard statement(s): P405: Store locked up. H303 + H333: May be harmful if swallowed or if inhaled P501: Dispose of contents/container to a licensed chemical disposal agency in H320: Causes eye irritation. accordance with local/regional/national regulations. H360: May damage fertility or the unborn child. H373: May cause damage to organs through prolonged or repeated exposure. H410: Very toxic to aquatic life with long lasting effects.

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 Lead nitrate		7732-18-5 10099-74-8	96.69% 3.31%	231-791-2 233-245-9	
Section 4	First aid measures				

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

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

EYE CONTACT: 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. 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

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 prote	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits.	Lead & inorganic compounds, as Pb	TWA: 0.05 mg/m ³ (A3)	TWA: 0.05 mg/m ³	TWA: 0.05 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

approved respirato							
Section 9	Physical and chemical pr	operties					
	teristic odor. Data not available. able. nt: Approximately 0°C (32°F) (water) oximately 100°C (212°F) (water)	Flammability (Explosion limi Vapor pressur Vapor density Relative density	ate (Water = 1): <1 (solid/gas): Data not a its: Lower / Upper: E re (mm Hg): 14 (water (Air = 1): 0.7 (water) (Specific gravity): Appr : Complete in water.	Data not available r)	Auto-igniti Decompos Viscosity: Molecular		: Data not available re: Data not available. ble. e
Section 10	Stability and reactivity						
Chemical stability Conditions to avo	: Stable id: Excessive temperatures whic		tion.	Will not occur.			
Incompatible mate	erials: Ammonium thiocyanate, p	owdered carbon,	, lead hypophosphite.				
Hazardous decom	position products: Lead oxides	and nitrogen oxi	ides.				
Section 11	Toxicological information						
Carcinogenity: D NTP: (R) Reasonal IARC classified: Gr OSHA: No compor CA Prop 65: A WA birth defects or oth Reproductive toxi	bly anticipated to be a human car oup 2A: Probably carcinogenic to lent of this product present at leve RNING! : This product can expose r reproductive harm. city: Data not available	humans. [Lead r els greater than o se you to chemica	nitrate] r equal to 0.1% is iden als including Lead and	lead compounds, whi	ich are knowr	n to the State of C	California to cause cancer and
STOT-repeated ex Aspiration hazard Potential health er Inhalation: Harmful Ingestion: Harmful Skin: Harmful if ab Eyes: Causes eye Signs and sympto by any route can cc "lead line" on the g	I if inhaled. if swallowed. sorbed through skin. Causes skir irritation. oms of exposure: Lead is a cum ause headache, vomiting, dizzine ums, metallic taste, definite loss o	i irritation. ulative poison an ss, cyanosis, dec of appetite, insom	id exposure to even sn preased blood pressure	nall amounts can rais	e the body's o tory paralysis	content to toxic le a. Acute poisonin	evels. Nitrates entering the boo g can lead to muscle weaknes
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STOT-repeated ex Aspiration hazard Potential health ei Inhalation: Harmful Skin: Harmful if ab Eyes: Causes eye Signs and sympto by any route can cc "lead line" on the g Additional inform: Section 12 Toxicity to fish: L Toxicity to fish: L Toxicity to fish: L Toxicity to algae: Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal g regulations may b Section 14 UN/NA number: Hazard class: N Exceptions: No Section 15	posure: Data not available : Data not available if cata not available ffects: if inhaled. if swallowed. sorbed through skin. Causes skir irritation. oms of exposure: Lead is a cum ause headache, vomiting, dizzine ums, metallic taste, definite loss of ause headache, vomiting, dizzine ums, metallic taste, definite loss of ation: RTECS #: OG2100000 [I Ecological information C50 - Oncorhynchus mykiss (rain a and other aquatic invertebrat No data available egradability: No data available egradability: No data available odata available ects: ects: An environmental hazard composed for the Disposal considerations uidelines are intended for the uidelines are intended for the edifferent. Disposal considerations Not applicable Ship Not applicable Pack ot applicable 2020 Regulatory information red to be listed if the CAS number for	i irritation. ulative poison an ss, cyanosis, dec of appetite, insom .ead nitrate] bow trout) - 1.5 n es: EC50 - Daph Bioaccum PBT and v annot be excludee disposal of cata ordance with all ping name: N ing group: N ERG Guide #	Id exposure to even sm reased blood pressure inia, dizziness, high lea ing/l - 96.0 h [Lead nitra nia magna (Water flea) ulative potential: No PvB assessment: No d in the event of unpro log-size quantities o l local, state and fed Not Regulated lot applicable Not applicable	nall amounts can rais and possible respira ad levels in the blood ate]) - 0.5 - 2.0 mg/l - 48 data available fessional handling or nly. Federal regula eral regulations or o	e the body's o tory paralysis and urine wit h [Lead nitrat disposal. tions may a contract with	content to toxic le s. Acute poisonin h shock, coma ar e] e] pply to empty co n a licensed che	evels. Nitrates entering the boo g can lead to muscle weaknes nd death in extreme cases.

ent 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.

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Section 1

Identification

"Cutting edge science for the classroom"

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

Product	MAGNESIUM METAL, RIBBON	
Synonyms	Magnesium	
Section 2	Hazards identification	
Pictograms	I: WARNING : GHS02 ns: None known	Precautionary statement: P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
GHS Classi Flammable s	fication: solid (Category 2)	
GHS Label H228: Flamr	information: Hazard statement: nable solid.	

Hazards not otherwise classified:

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

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Magnesium		7439-95-4	99.8%	231-104-6	
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. 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 only graphite powder, soda ash, powdered sodium chloride, or an appropriate metal-fire-extinguishing dry powder. DO NOT use water, carbon dioxide, or foam!

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear.

Specific Hazards: When heated in air to a temperature near its melting point, magnesium may ignite and burn. Dangerous in the form of dust or flakes and when exposed to flame or by violent chemical reaction with oxidizing agents. Magnesium may react with moisture or acids to evolve hydrogen gas, which is a highly dangerous fire or explosion hazard.

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. Using non-sparking tools, sweep up and place in a suitable container for proper disposal. Wash spill area with soap and water.

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

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

Section 8	Exposure controls / personal prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits.	Magnesium	Not established	Not established	Not established

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

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

approved respirator	•						
Section 9	Physical and chemical prop	erties					
Odor: No odor. Odor threshold: D pH: Data not availa	ata not available. F ble. V point: 651°C (1203.8°F) V°C (2030°F) F	lammability (s xplosion limit /apor pressure /apor density (Relative density	te (=1): Data not av olid/gas): Data not a s: Lower / Upper: D (mm Hg): 1 mm @ 6 Air = 1): Data not ava (Specific gravity): 1.7 Negligible in water.	vailable. ata not available 521°C ailable	Auto-igniti Decompos Viscosity: Molecular	oefficient: Data ion temperature: sition temperature Data not availab formula: Mg weight: 24.31	: 510°C (950°F) re: Data not available.
Section 10	Stability and reactivity						
Incompatible mate	Stable d: Excessive temperatures, heat, s rials: Magnesium will react with wa position products: Hydrogen.	parks, open fla		of ignition.	chlorine, bron	nine, iodine and o	xidizing agents.
Section 11	Toxicological information						
Serious eye damag Respiratory or skii Germ cell mutager Carcinogenity: Da NTP: No componer IARC: No componer OSHA: No compone Ca Prop 65: This pr Reproductive toxis STOT-single expos STOT-repeated exp Aspiration hazard: Potential health ef Inhalation: Inhealth ef Inhalation: Inhealth ef Inhalation: Inhealth ef Skin: Particles imbo Eyes: Contact with Signs and sympto chills, nausea, vomi	t of this product present at levels gr nt of this product present at levels g ent of this product present at levels oduct does not contain any chemica city: Data not available sure: Data not available posure: Data not available : Data not available	reater than or e greater than or e greater than or als known to the nortness of brea nouth and may o ons. Molten ma eal scratches. / gnesium oxide f	equal to 0.1% is identified equal to 0.1% is identified a State of California to ath. athus abdominal pain gnesium may cause s Avoid direct viewing of ume subsequent to bu	ied as probable, pos ified as a carcinoger cause cancer or rep and diarrhea. erious skin burns. magnesium fires as rning can result in n	ssible or confi n or potential productive tox s eye injury m netal fume fev	rmed human carc carcinogen by OS icity. ay result, use fire rer. The temporal	glasses. y symptoms can include fever,
Section 12	Ecological information						
Toxicity to algae: N Persistence and de Mobility in soil: No Other adverse effe	a and other aquatic invertebrates. No data available agradability: No data available o data available cts: An environmental hazard canr	Bioaccumu PBT and vP	lative potential: No o PvB assessment: No	data available	disposal.		
Section 13	Disposal considerations						
	uidelines are intended for the dis e different. Dispose of in accord Transport information						
UN/NA number: Hazard class: 4			Reporta	ble Quantity: No G Guide # 138)	Ma	rine pollutant: No
Section 15	Regulatory information						
A chemical is consider	ed to be listed if the CAS number for the	-	•				
Compon	lent	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Magnesium		Listed	Not listed	D001	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information						

The information contained 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 independent 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.

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Section 1

Identification

"Cutting edge science for the classroom" by Aldon "600 Participation of the classroom"

221 Rochester Street Avon, NY 14414-9409 (585) 226-6177 CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory and industrial use only.

Not for drug, food or household use.

Product MAGNESIUM NITRATE, 0.1 MOLAR SOLUTION	
Synonyms Magnesium Nitrate, 0.1M Aqueous Solution / Magnesium Nitrate, Aqueo	ous Solution
Section 2 Hazards identification	
This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals. Signal word: None required Pictograms: No symbol required Target organs: None known GHS Classification: None required GHS Label information: Hazard statement: None required Precautionary statement: None required Hazards not otherwise classified:	Supplemental information: Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.
Health hazards not otherwise classified (HHNOC) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known	
Section 3 Composition / information on ingredients	

Section 3 Composition / information of	n ingredients			
Chemical Name	CAS #	%	EINECS	
Water Magnesium nitrate, hexahydrate	7732-18-5 13446-18-9	97.44% 2.56%	231-791-2 233-826-7 [anhydrous]	
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 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 extinguishing agent suitable for type of surrounding 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.

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 prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Magnesium nitrate	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/MSHAapproved respirator.

Section 9	Physical and chemical p	properties					
Odor: Mild charac Odor threshold: I pH: Data not avail Melting / Freezing poi	Data not available. lable. int: Approximately 0°C (32°F) (water) roximately 100°C (212°F) (water)	Flammability (Explosion limi Vapor pressur Vapor density Relative density	tte (Water = 1): <1 solid/gas): Data not tts: Lower / Upper: I e (mm Hg): 14 (wate (Air = 1): 0.7 (water) (Specific gravity): App Complete in water.	Data not available r)	Auto-igniti Decompos Viscosity: Molecular		: Data not available re: Data not available. ble. e
Section 10	Stability and reactivity						
Chemical stability Conditions to avo	y: Stable bid: Excessive temperatures wh		us polymerization: ion.	Will not occur.			
ncompatible mat	erials: Reducing agents, oxidiz	ers, organic and co	mbustible materials.				
Hazardous decon	nposition products: Nitric acid	fumes and sometir	nes nitrogen tetroxide	are reported.			
Section 11	Toxicological information	n					
Germ cell mutage Carcinogenity: D NTP: No compone IARC: No compone OSHA: No compor Ca Prop 65: This p Reproductive tox STOT-single expo	ent of this product present at leve ent of this product present at leve nent of this product present at leve product does not contain any che cicity: Data not available osure: Data not available xposure: Data not available	els greater than or e els greater than or vels greater than or	equal to 0.1% is ident equal to 0.1% is iden	ified as probable, pos ntified as a carcinogen	sible or confir or potential of	med human card carcinogen by OS	
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Section 1

Identification

INNOVATING SCIENCE^{® by Aldon} 221 Road

"Cutting edge science for the classroom"

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

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

Product	MINERAL OIL	
Synonyms	White Mineral Oil / Light Paraffin Oil / Citation 55NF	
Section 2	Hazards identification	
	nce or mixture has not been classified as hazardous according ally Harmonized System (GHS) of Classification and Labeling of	Supplemental information:
Pictograms	I: None required : No symbol required ns: None known	
GHS Label	fication: None required information: Hazard statement: None required ary statement: None required	
Health haza	ot otherwise classified: rds not otherwise classified (HHNOC) - Not Known	

Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Mineral oil		8042-47-5	100%	232-455-8	
Section 4	First aid measures	1	1	1	

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: Carbon dioxide, dry chemical, dry sand, alcohol foam. Do not use streams of water as this will scatter the liquid and spread the 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. If container is not peoperly cooled, it can rupture in the heat of a fire. Slight fire hazard. Material must be preheated before ignition will occur (OSHA IIIB).

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.

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

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

Section 8	Exposure controls / personal prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Mineral oil, pure, highly refined	TWA: 5 mg/m ³ (A4)	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/MSHAapproved respirator.

Section 9	Physical and chem	ical properties					
pH: Data not avai Melting / Freezing Boiling point: Da	Data not available lable g point: Data not available	Flammability (s Explosion limits Vapor pressure Vapor density (Relative density	e (Butyl acetate = 1): olid/gas): Data not a s: Lower / Upper: D (mm Hg): <1 @ 20° Air = 1): >1 (Specific gravity): 0.8° Negligible in water	available bata not available C (68°F)	Auto-ignitio Decomposi Viscosity: Molecular f		: Data not available I re: Data not available ble. CH ₂] _n CH ₃
Section 10	Stability and reactive	vity					
Chemical stabilit	 y: Stable oid: Excessive heat and op 		us polymerization: \	Will not occur.			
Incompatible ma	terials: Chlorine, fluorine,	and other strong oxidizers	5.				
Hazardous decor	mposition products: None	e identified.					
Section 11	Toxicological inform	mation					
Germ cell mutag Carcinogenity: I NTP: No compone IARC classified: G OSHA: No compo Ca Prop 65: This I Reproductive tox	ent of this product present a Group 3: Not classifiable as ment of this product presen product does not contain ar	e at levels greater than or ec to its carcinogenicity to hu t at levels greater than or	imans. equal to 0.1% is ident	tified as a carcinoge	n or potential c	arcinogen by O	SHA.
STOT-repeated e Aspiration hazar Potential health o Inhalation: Repeat the nose and throa Ingestion: Negligi Skin: No significa Eyes: No significa Signs and sympt	osure: Data not available xposure: Data not availab d: Data not available effects: ated exposure to levels of o	il mists in excess of the ex xative causing diarrhea. I. d. se appropriate procedures			of oil droplets i	in pulmonary tiss	sue and may lead to irritation of
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dent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook. Form 06/2015

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Section 1

Identification

INNOVATING SCIENCE[®] by Aldon 221 Roc

"Cutting edge science for the classroom"

AIGON 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 BROMATE	
Synonyms	Bromic Acid, Potassium Salt	
Section 2	Hazards identification	
Pictograms Target orga GHS Class Oxidizing sc Acute toxici Carcinogen GHS Label H271: May H301: Toxic	d: DANGER s: GHS03 / GHS06 / GHS08 ans: Auditory and Central nervous systems, Liver, Kidneys.	 Precautionary statement: 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. P220: Keep away from clothing/incompatible/combustible materials. P221: Take any precaution to avoid mixing with combustibles and incompatible materials. 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. P283: Wear fire/flame resistant/retardant clothing. P301+P310+P330: IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. P306+P360: IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. P308+P313: IF exposed or concerned: Get medical attention. P370+P378: In case of fire use water to extinguish. P371+P380+P375: In case of fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. 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) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS		
Potassium bromate		7758-01-2	100%	231-829-8		
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. 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 water. Do not use dry chemicals or foams. CO2 or Halon® may provide limited control.

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. Strong oxidizing agent. Non-combustible, however, oxygen is liberated when involved in fire, which increases the rate of burning. Mixing with acids, ammonium compounds, combustible materials or readily oxidizable substances may explode when subjected to slight friction.

Section 6 Accidental release measures

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

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

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

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

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

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

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

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

Section 9 Physical and chemical pr	roperties	
Appearance: Solid. White crystalline powder Odor: No odor Odor threshold: Data not available pH: Data not available Melting / Freezing point: Data not available Boiling point: Data not available Flash point: Data not available	Evaporation rate (=1): Data not available Flammability (solid/gas): Data not available Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): Data not available Relative density (Specific gravity): 3.27 g/cm ³ Solubility(ies): 133 g/L water @ 40°C	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available Viscosity: Data not available Molecular formula: KBrO ₃ Molecular weight: 167.00
O setting 40 Otels III to send as setting		

Section 10 Stability and reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition. Incompatible materials: Strong oxidizers, reducing agents, metals powders, ammonuim compounds, combustible materials and oxidizable substances. Selenium reacts violently with aqueous bromates. Mixing with disulfur dibromide and water ignites @ 20°C and without water it ignites @125°C. Violent reaction and gas evolution with aluminum dinitrotoluene

Hazardous decomposition products: Potassium oxides, hydrogen bromide gas, oxygen.

Section 11 **Toxicological information** Acute toxicity: Oral-rat LD50: 157 mg/kg Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC classified: Group 2B: Possibly carcinogenic 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: 🛦 WARNING! :This product can expose you to Potassium bromate, which is known to the State of California to cause cancer. 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: Inhalation: Inhalation causes cough and sore throat. Ingestion: Ingestion causes abdominal pain, diarrhea, nausea, and vomiting Skin: Contact causes redness. Eyes: Contact causes redness and pain. Signs and symptoms of exposure: The substance is irritating to the eyes, skin and respiratory tract. Ingestion could cause effects on the kidneys and central nervous system. This may result in renal failure, respiratory depression and hearing loss. The effects may be delayed. Exercise appropriate procedures to minimize potential hazards. Additional information: RTECS #: EF8725000 Section 12 Ecological information Toxicity to fish: No data available 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: UN1484 Shipping name: Potassium bromate Hazard class: 5.1 Packing group: || Reportable Quantity: No Marine pollutant: No 2020 ERG Guide # 140 Exceptions: Limited quantity equal to or less than 1 Kg Section 15 **Regulatory information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Potassium bromate	Listed	Not listed	Not listed	Listed	Not listed	WARNING -Cancer - www.P65Warnings.ca.gov.

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 independent 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

GENERAL STORAGE CODE GREEN

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Section 1

Identification

"Cutting edge science for the classroom"

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 P

POTASSIUM BROMIDE

Synonyms

Section 2 Hazards identification

Signal word: WARNING Pictograms: GHS07 Target organs: None known

None



GHS Classification: Eye irritation (Category 2A)

GHS Label information: Hazard statement: H319: Causes serious eye irritation.

Precautionary statement:

P264: Wash hands thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. 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.

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	
Potassium bromide		7758-02-3	100%	231-830-3	
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. 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 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: 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: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental release measures

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

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

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

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

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

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

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

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

Section 9 Physical	Section 9 Physical and chemical properties							
Appearance: Solid. White crysta Odor: No odor Odor threshold: Data not availab pH: Data not available Melting / Freezing point: 760°C Boiling point: 1435°C (2615°F) Flash point: Data not available	Flammability (solid/gas): Data not a Explosion limits: Lower / Upper: D Vapor pressure (mm Hg): 1 mm @ 3	vailable Auto-ignition temperature: Data not available ata not available Decomposition temperature: Data not available 795°C Viscosity: Data not available Molecular formula: KBr 2.749 @ 25°C Molecular weight: 119.01						
Section 10 Stability a	nd reactivity							
	Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Contact with strong acids can liberate hydrogen bromide, strong oxidizers can liberate bromine. Avoid heating above 800°C (1472°F).							
Incompatible materials: Strong	xidizers, acids, aluminum and its alloys.							
Hazardous decomposition prod	cts: Hydrogen bromide gas and/or bromine gas.							
Section 11 Toxicolog	cal information							
IARC: No component of this produced of the second of the s	at available ata not available : Data not available : available : present at levels greater than or equal to 0.1% is identifi :t present at levels greater than or equal to 0.1% is identifi ct present at levels greater than or equal to 0.1% is identifict contain any chemicals known to the State of California to vailable available	ied as probable, possible or confirmed human carcinogen by IARC. ified as a carcinogen or potential carcinogen by OSHA.						

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

Potential health effects:

Inhalation: Inhalation may cause sore throat, coughing, shortness of breath.

Ingestion: Ingestion may cause pain in swallowing, abdominal pain, nausea, and drowsiness.

Skin: Contact with skin may cause irritation and/or dermatitis.

Eyes: Contact with eyes may cause severe irritation.

Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: Data not available

Section 12 Ecological information

Toxicity to fish: Pimephales promelas (fish, fresh water), LC50 = >30,000 ug/L/96 hours

Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = >30,000 ug/L/96 hours

Toxicity to algae: No data available Persistence and degradability: No Mobility in soil: No data available

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 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	mansport informa	lion					
UN/NA number: Hazard class: No Exceptions: Not	t applicable	Shipping name: N Packing group: No 2020 ERG Guide #	ot applicable	Reportable Qua	antity: No	Ма	rine pollutant: No
Section 15	Regulatory information	ation					
A chemical is considered	to be listed if the CAS nu	mber for the anhydrous form	is on the Inventory list.				
Compone	nt	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Potassium bromide		Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information						
							ered by them and must make indepen

dent determination contained nerein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gainered by them and must make independent 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.

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Section 1

Identification

INNOVATING SCIENCE® by Aldon 221 Rock

"Cutting edge science for the classroom"

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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.

Pro	du	ıct

POTASSIUM IODIDE, 0.1 MOLAR SOLUTION

Synonyms Potassium Iodide, Aqueous Solution Hazards identification Section 2 Signal word: WARNING Precautionary statement: Pictograms: GHS07 P261: Avoid breathing mist/vapours/spray. Target organs: Thyroid P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear protective gloves/protective clothing/eye protection/face protection. P302+P352: IF ON SKIN: Wash with plenty of water and soap P333+P313: If skin irritation or rash occurs: Get medical attention. P312: Call a POISON CENTER or doctor if you feel unwell. P362+P364: Take off contaminated clothing and wash it before reuse. **GHS Classification:** P501: Dispose of contents/container to a licensed chemical disposal agency in Acute toxicity, oral (Category 5) accordance with local/regional/national regulations. Skin sensitization (Category 1A) GHS Label information: Hazard statement: H303: May be harmful if swallowed. H317: May cause an allergic skin reaction.

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 Potassium iodide		7732-18-5 7681-11-0	98.34% 1.66%	231-791-2 231-659-4	
Section 4	First aid measures				

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: 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: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with strong oxidizers may cause fire or explosion.

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.

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					
Exposuro Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Limits:	Particulates not otherwise classified	None established	TWA: 15 ppm total dust	None established		

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

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

Section 9 Physical and chemical pro	operties	
Appearance: Clear, colorless liquid. Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / 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 pressure (mm Hg): 14 (water) Vapor density (Air = 1): 0.7 (water) Relative density (Specific gravity): Approximately 1.0 (water) Solubility(ies): 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 and reactivity		

Chemical stability: Stable

Hazardous polymerization: Will not occur

Conditions to avoid: Protect from light, air, moisture and excessive temperatures which cause evaporation.

Incompatible materials: Reacts violently with alkaline metals, diazonium salts, oxidants, bromine and chlorine trifluorides, and fluorine perchlorate, and may cause explosion and/or fire. NOTE: Solutions of this product are corrosive to most metals.

Hazardous decomposition products: Yields iodine when in contact with air. Releases iodine, potassium monoxide, and hydrogen iodide, when in contact with moist air.

Section 11 **Toxicological information**

Acute toxicity: Oral-rat LD50: 4800 mg/kg [Potassium iodide]

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- 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: Data not available

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

Potential health effects:

Inhalation: May cause irritation of respiratory tract.

Ingestion: Large doses may cause gastrointestinal upset and weakness.

Skin: May cause mild irritation and redness on prolonged contact.

Eyes: Can be irritating with redness and pain.

Signs and symptoms of exposure: Hypothyroidism with possibility of goitre (hypertrophy of the throid gland), possible sensitization of skin. Chronic ingestion of iodides may produce "iodism" which may be characterized by skin rash, running nose, headache, and irritation of mucous membranes. Weakness, anemia, loss of weight, and general depression may also occur. Additional information: RTECS #: NN1575000 [Potassium iodide]

Section 12 Ecological information

Toxicity to fish: No data available

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 in	formation	
UN/NA number	Not applicable	Shinning name:	Not Pogulated

Hazard class: Not applicable Exceptions: Not applicable	Packing group: N 2020 ERG Guide #	ot applicable	Reportable Qu	antity: No	М	arine pollutant: No
Section 15 Regulatory in	formation					
A chemical is considered to be listed if the 0	CAS number for the anhydrous form	is on the Inventory list.				
Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Potassium iodide	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or

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 independent 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

reproductive toxicity

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Section 1

Identification

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

Product SODIUM BROMIDE 0.1 MOLAR SOLUTION	
Synonyms Sodium Bromide, Water Solution	
Section 2 Hazards identification	
This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals. Signal word: None required Pictograms: No symbol required Target organs: None known GHS Classification: None required GHS Label information: Hazard statement: None required Precautionary statement: None required Precautionary statement: None required Hazards not otherwise classified: Health hazards not otherwise classified (HHNOC) - Not Known	Supplemental Information: Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3	Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS		
Water Sodium bromide		7732-18-5 7647-15-6	98.97% 1.03%	231-791-2 231-599-9		
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. 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 extinguishing agent suitable for type of surrounding 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: Solutions: 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: Recover for reuse if not contaminated. 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.

Form 06/2015

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 mist/vapours or spray. 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.	Sodium bromide	Not established	Not established	Not establishe		

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

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

approved respirator.			, c				
Section 9	Physical and chemical pr	operties					
Appearance: Clear, cc Odor: No odor. Odor threshold: Data pH: Data not available Melting / Freezing point: Boiling point: Approxi Flash point: Data not a	lorless liquid not available Approximately 0 °C (32°F) (Water) mately 100°C (212°F)	Evaporation ra Flammability (s Explosion limit Vapor pressure Vapor density (Relative density (te (Butyl acetate = 1) solid/gas): Data not a s: Lower / Upper: D e (mm Hg): 14 (water Air = 1): 0.7 (water) Specific gravity): Approx Complete in water.	ivailable lata not available)	Auto-igniti Decompos Viscosity: Molecular		: Data not available re: Data not available ble e
Section 10	Stability and reactivity				1		
Incompatible materi Hazardous decomp	: Excessive temperatures whic als: Strong oxidizers and acide osition products: Hydrogen b	h cause evaporat s. romide gas and/o		Will not occur.			
Section 11	Toxicological information						
Skin corrosion/irrita Serious eye damage Respiratory or skin Germ cell mutageni Carcinogenity: Dat NTP: No component IARC classified: No co OSHA: No component Ca Prop 65: This pro Reproductive toxici STOT-single exposed STOT-repeated exp Aspiration hazard: Potential health effet Inhalation: Inhalatior Ingestion: Ingestion Skin: Contact with sl Eyes: Contact with sl Eyes: Contact with sl Eyes: Contact with sl Signs and symptom thoroughly investigat Additional informat	of this product present at levels omponent of this product present at of this product present at level duct does not contain any chen ty: Data not available pre: Data not available Data not available Data not available Data not available Data not available cts: In may cause dizziness, drowsin causes dizziness, drowsiness, kin causes irritation defatting or yes may cause blindness. Is of exposure: See Potential ed. Specific data is not availab ion: RTECS #: VZ3150000 (Second)	ble greater than or en nt at levels greater els greater than or nicals known to th ess, nausea, vom decreased reaction prolonged conta- health effects abor e. Exercise appr	equal to 0.1% is identii er than or equal to 0.1 equal to 0.1% is iden e State of California to state of California to n, euphoria, nausea, ct.	ied as a known or ar % is identified as pro- tified as a carcinoge o cause cancer or re- entrate and irritation vomiting, staggering knowledge the cher	obable, possibl en or potential of productive toxi of the throat. gait and coma nical, physical	e or confirmed h carcinogen by OS city.	SHA.
Section 12	Ecological information						
Toxicity to daphnia Toxicity to algae: So Persistence and deg Mobility in soil: No Other adverse effec Section 13 These disposal gui	ts: An environmental hazard ca Disposal considerations	es: Daphnia mag concentration: 5 Bioaccumu PBT and vi annot be excluded disposal of cata	na (Water flea), conce 800 mg/L/24H (Sodiur Ilative potential: No PvB assessment: No d in the event of unpro- log-size quantities co	ntration:> 1000 mg/l n bromide) data available data available fessional handling o nly. Federal regul	r disposal. lations may a	pply to empty c	container. State and/or local emical disposal agency.
UN/NA number:	•	name: Not Re	aulated				
Hazard class: Not Exceptions: Not	t applicable Packing	Guide # Not app	olicable Repo	ortable Quantity:	No	Marine po	ollutant: No
Section 15	Regulatory information						
A chemical is considered Compone	to be listed if the CAS number for	the anhydrous form	is on the Inventory list.	RCRA code	DSL	NDSL	CA Prop 65
Sodium bromide		Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information						
							ered by them and must make indepen- s. NTP: National Toxicology Program,

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 independent 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.

GENERAL STORAGE CODE GREEN

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Section 1

Identification

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roduct SODIUM CHLORIDE, 0.1 MOLAR SOLUTION	
ynonyms Sodium Chloride, Water Solution	
ection 2 Hazards identification	
his substance or mixture has not been classified as hazardous according o the Globally Harmonized System (GHS) of Classification and Labeling of hemicals. ignal word: Not classified ictograms: Not classified arget organs: None known HS Classification: Not classified HS Label information: Hazard statement(s): Not classified recautionary statement(s): Not classified	Supplementary information: Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Section 3	Composition / information on	ingredients			
Chemical Name		CAS #	%	EINECS	
Water Sodium chloride		7732-18-5 7647-14-5	99.42% 0.58%	231-791-2 231-598-3	
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: 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: 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.

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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 mist/vapours/spray. 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. Store away from acids.

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

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

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

Section 9	Physical and chemical pr	operties					
Odor: No odor. Odor threshold pH: Data not av Melting / Freezing p	I: Data not available. /ailable. point: Approximately 0°C (32°F) (water) /sproximately 100°C (212°F) (water)	Flammability Explosion lim Vapor pressur Vapor density Relative density	ate (Water = 1): <1 (solid/gas): Data not its: Lower / Upper: I re (mm Hg): 14 (wate r (Air = 1): 0.7 (water) r (Specific gravity): App 1: Complete in water.	Data not available r)	Auto-igniti Decompos Viscosity: Molecular	•	e: Data not available are: Data not available. ble. re
Section 10	Stability and reactivity						
Chemical stabil Conditions to a	lity: Stable void: Excessive temperatures whic		tion.	Will not occur.			
ncompatible m	aterials: Strong acids.						
Hazardous deco	omposition products: Electrolysis	can produce chlo	orine gas.				
Section 11	Toxicological information						
•	Oral-rat LD50: 3000 mg/kg [Sodium	chloride]					
	/irritation: Data not available						
•	mage/irritation: Data not available skin sensitization: Data not availa	ble					
	genicity: Data not available						
	Data not available						
NTP: No compor	nent of this product present at levels						
	onent of this product present at level						
	ponent of this product present at leve s product does not contain any chen	0		0		0 ,	SITA.
	oxicity: Data not available					ony.	
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SIUI-single ex	posure: Data not available						
-	posure: Data not available exposure: Data not available						
STOT-repeated Aspiration haza	exposure: Data not available ard: Data not available						
STOT-repeated Aspiration haza Potential health	exposure: Data not available ard: Data not available n effects:	mild initation to m		and threat			
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STOT-repeated Aspiration haza Potential health Inhalation: Inhal Ingestion: Inges Skin: Contact m Eyes: Contact n	exposure: Data not available ard: Data not available n effects: lation of dust leaves salty taste with stion of large amounts (more than 0. nay cause very slight irritation. may cause very slight irritation.	1 pound) may cai	use vomiting.				
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STOT-repeated Aspiration haza Potential health Inhalation: Inhal Ingestion: Inges Skin: Contact m Eyes: Contact n Signs and symp Additional infor Section 12	exposure: Data not available ard: Data not available n effects: lation of dust leaves salty taste with stion of large amounts (more than 0. nay cause very slight irritation. nay cause very slight irritation. ptoms of exposure: Gross overex rmation: RTECS #: VZ4725000 [S Ecological information	1 pound) may cat posure over a lon odium chloride]	use vomiting. g period of time, result	ts in dehydration.			
STOT-repeated Aspiration haza Potential health Inhalation: Inhal Ingestion: Inges Skin: Contact m Eyes: Contact m Signs and symp Additional infor Section 12 Toxicity to fish:	exposure: Data not available ard: Data not available n effects: lation of dust leaves salty taste with stion of large amounts (more than 0. nay cause very slight irritation. nay cause very slight irritation. ptoms of exposure: Gross overex rmation: RTECS #: VZ4725000 [S Ecological information : Lepomis macrochirus (fish, freshw.	1 pound) may car posure over a lon odium chloride] ater) LC50: 9,675	use vomiting. Ig period of time, result 5 mg/l/96 hours [Sodiur	ts in dehydration. m chloride]		idal	
STOT-repeated Aspiration haza Potential health Inhalation: Inhal Ingestion: Inges Skin: Contact m Eyes: Contact m Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to daph	exposure: Data not available ard: Data not available in effects: lation of dust leaves salty taste with stion of large amounts (more than 0. nay cause very slight irritation. may cause very slight irritation. ptoms of exposure: Gross overex rmation: RTECS #: VZ4725000 [S Ecological information : Lepomis macrochirus (fish, freshw nnia and other aquatic invertebrat	1 pound) may car posure over a lon odium chloride] ater) LC50: 9,675 es: Daphnia mag	use vomiting. g period of time, result 5 mg/l/96 hours [Sodiur gna (Crustacea) EC50:	ts in dehydration. m chloride]	[Sodium chlor	ide]	
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STOT-repeated Aspiration haza Potential health nhalation: Inhal ngestion: Inges Skin: Contact m Eyes: Contact m Signs and symp Additional infor Section 12 Foxicity to fish: Toxicity to daph Foxicity to daph Foxicity to daph Coxicity to daph Coxicity to daph Coxicity to daph Coxicity to daph Coxicity to daph Coxicity to algar Persistence and Mobility in soil:	exposure: Data not available ard: Data not available n effects: lation of dust leaves salty taste with stion of large amounts (more than 0. nay cause very slight irritation. ptoms of exposure: Gross overex rmation: RTECS #: VZ4725000 [S Ecological information the Lepomis macrochirus (fish, freshw maia and other aquatic invertebrat e: Anabaena variabilis (Algae) LC50 d degradability: No data available No data available	1 pound) may car posure over a lon odium chloride] ater) LC50: 9,675 es: Daphnia mag : 23,565 mg/l/4 d Bioaccum PBT and v	use vomiting. g period of time, result 5 mg/l/96 hours [Sodiur gna (Crustacea) EC50: lay [Sodium chloride] ulative potential: No PvB assessment: No	ts in dehydration. m chloride] 6,175 mg/l/16 hours data available o data available	-	ide]	
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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

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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 SULFURIC	ACID, 1 Molar (2 NORMAL) SOLUTION
Synonyms Sulfuric Acid	d, Water Solution (1M / 2N)
Section 2 Ha	zards identification
Carcinogenicity (Category 1 Carcinogenicity (Category 1 Carcinogenicity (Category 1) Carcinogenicity (Category 1) Carcinogenicity (Category 1) Carcinogenicity (Category 1) Carcinogenicity (Category 1) Carcinogenicity (Category 1) Category 1) Category 1 Category 1	 P264: Wash nands throughly after nanding. P280: Wear protective gloves/protective clothing/eye protection/face protection. P303+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P340+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P310: Immediately call a POISON CENTER or doctor. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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.

Section 3	Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS		
Water Sulfuric acid		7732-18-5 7664-93-9	94.76% 5.23%	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. aluminum, 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.

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 protection					
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 evewash 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 Appearance: Clear to slightly cloudy liquid. Evaporation rate (Water = 1): <1 Partition coefficient: Data not available Odor: Slightly pungent odor. Flammability (solid/gas): Data not available. Auto-ignition temperature: Data not available Odor threshold: Data not available Explosion limits: Lower / Upper: Data not available Decomposition temperature: Data not available. pH: Data not available. Vapor pressure (mm Hg): 14 (water) Viscosity: Data not available. Vapor density (Air = 1): 0.7 (water) Melting / Freezing point: Approximately 0°C (32°F) (water) Molecular formula: Mixture Boiling point: Approximately 100°C (212°F) (water) Relative density (Specific gravity): Approximately 1.0 (water) Molecular weight: Mixture Flash point: Data not available Solubility(ies): Complete in water. Section 10 Stability and reactivity Chemical stability: Stable 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. Section 11 Toxicological information 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. CA Prop 65: A WARNING! This product can expose you a chemical, Strong inorganic acid mists containing sulfuric acid, which is known to the State of California to cause cancer 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: 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, abdominal pain, bleeding and/or tissue ulceration. Skin: Skin contact can cause severe irritation 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 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. Transport information Section 14 UN/NA number: UN2796 Shipping name: Sulfuric acid Hazard class: 8 Packing group: || Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: Limited quantity equal to or less than 1 L 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. DSL NDSL Component TSCA CERLCA (RQ) RCRA code CA Prop 65 Sulfuric acid Listed 1000 lbs (454 kg) D002 Listed Not listed A WARNING -Cancer www.P65Warnings.ca.gov. 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 independent 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

Section 1

SAFETY DATA SHEET

GENERAL STORAGE CODE GREEN

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Identification

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 ZINC METAL	
Synonyms Zinc / Zinc Metal Pieces	
Section 2 Hazards identification	
This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals. Signal word: Not classified Pictograms: Not classified Target organs: None known GHS Classification: Not classified GHS Label information: Hazard statement(s): Not classified Precautionary statement(s): Not classified	Supplemental information: SHARP EDGES! ABRASIVE TO SKIN. USE CARE WHEN HANDLING. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.
Hazards not otherwise classified:	

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

Section 3	Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS		
Zinc, pieces		7440-66-6	100%	231-175-3		
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: HARMFUL IF INHALED AS FUME. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. EYE CONTACT: MAY CAUSE MECHANICAL 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 DERMATITIS. 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 triclass, dry chemical fire extinguisher. Do NOT use water on fire where molten metal is present.

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. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Small chips, turnings, and dust with ignite readily. Dust cloud may be explosive.

Section 6 Accidental release measures

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

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

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

Section 7	Handling and storage	Page E2
D 1111 1 1 1		

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale fumes from molten metals. Wash thoroughly after handling. Remove and wash clothing before reuse.

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

Section 8	Exposure controls / personal protection					
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Limits.	Particulates not otherwise classified	None established	TWA: 5 mg/m ³ respirable fraction	None established		

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

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

Annoaranaci Calla	Physical and chen						
Appearance: Solid Odor: No odor. Odor threshold: D pH: Data not availa Melting / Freezing po Boiling point: 907 Flash point: Not a	able. pint: 419°C (787°F) °C (1665°F)	Flammability (Explosion limi Vapor pressur Vapor density	<pre>tte (= 1): Not applic solid/gas): Not appli ts: Lower / Upper: 1 e (mm Hg): Data not (Air = 1): Data not ar ty (Specific gravity): Insoluble</pre>	cable Not applicable available /ailable	Auto-igniti Decompos Viscosity: Molecular		e: Not applicable ure: Data not available.
Section 10	Stability and react	ivity					
Chemical stability: Conditions to avoi	: Stable	-	us polymerization: e when in contact with				
Incompatibilities w	vith other materials: St	rong acids, halogens, acid	ls, alkalies and water.				
Hazardous decom	position products: Zine	c oxides and zinc fumes.	Reacts with water, ac	ids or alkalies to ger	erate hydroger	n gas.	
Section 11	Toxicological info	rmation					
OSHA: No compone Ca Prop 65: This pr Reproductive toxic	ent of this product prese oduct does not contain a city: Data not available sure: Data not available		equal to 0.1% is ider	tified as a carcinoge	n or potential c	arcinogen by OS	0,
Aspiration hazard: Potential health ef Inhalation: Inhalatio Ingestion: May be I Skin: May cause de Eyes: Contact with	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha	ause irritation to eyes, nose nical irritation.			-		ever or produce flu-like sympt se mouth, eye, and nose irrita
Aspiration hazard: Potential health ef Inhalation: Inhalatio Ingestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha	ause irritation to eyes, nose nical irritation. .heating of alloy can produ assigned			-		
Aspiration hazard: Potential health ef nhalation: Inhalatio ngestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional informa Section 12 Foxicity to fish: No Foxicity to daphnia Foxicity to algae: No Persistence and do Mobility in soil: No	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu	ce metal fumes and c able ulative potential: No PvB assessment: No	ixides. Over-exposu data available o data available	re to dust and		
Aspiration hazard: Potential health ef nhalation: Inhalatio ngestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional informa Section 12 Foxicity to fish: No Foxicity to daphnia Foxicity to algae: No Persistence and do Mobility in soil: No	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vf nazard cannot be excluded	ce metal fumes and c able ulative potential: No PvB assessment: No	ixides. Over-exposu data available o data available	re to dust and		
Aspiration hazard: Potential health effinhalation: Inhalation Ingestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional informate foxicity to fish: Ne foxicity to daphnia foxicity to daphnia foxicity to algae: Ne Persistence and de Mobility in soil: Ne Other adverse effe Section 13 These disposal gu	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available icts: An environmental h Disposal consider uidelines are intended	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vF nazard cannot be excluded rations	ce metal fumes and c able PVB assessment: No in the event of unpro	xides. Over-exposu data available o data available fessional handling c pnly. Federal regul	re to dust and r disposal. ations may aj	fumes may caus	e mouth, eye, and nose irrita
Aspiration hazard: Potential health eff nhalation: Inhalation ngestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional information Additional information A	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available icts: An environmental h Disposal consider uidelines are intended	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vF nazard cannot be excluded rations for the disposal of catal of in accordance with all	ce metal fumes and c able PVB assessment: No in the event of unpro	xides. Over-exposu data available o data available fessional handling c pnly. Federal regul	re to dust and r disposal. ations may aj	fumes may caus	se mouth, eye, and nose irrita
Aspiration hazard: Potential health effinhalation: Inhalation Ingestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional information fection 12 Toxicity to fish: No Porsistence and de Abbility in soil: No Differ adverse effe Section 13 These disposal gue gulations may b Section 14 JN/NA number: Hazard class: N	Data not available fects: on of dust or fume may ca harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available egradability: No data a o data available etcts: An environmental h Disposal consider uidelines are intended de different. Dispose of Transport informa Not applicable lot applicable	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vF nazard cannot be excluded rations for the disposal of catal of in accordance with all	ce metal fumes and c able PvB assessment: No lin the event of unpro- log-size quantities c local, state and fed lot Regulated ot applicable	xides. Over-exposu data available o data available fessional handling c pnly. Federal regul	re to dust and r disposal. ations may a contract with	fumes may caus poly to empty c a licensed che	se mouth, eye, and nose irrita
Aspiration hazard: Potential health effinalation: Inhalation Inhalation: Inhalation of the section May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional informate ection 12 Poxicity to fish: No oxicity to daphnia oxicity	Data not available fects: on of dust or fume may can harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available etts: An environmental h Disposal consider uidelines are intended de different. Dispose of Transport informa Not applicable lot applicable applicable Regulatory inform	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vf nazard cannot be excluded rations for the disposal of catal of in accordance with all ation Shipping name: N Packing group: No 2020 ERG Guide # ation	ce metal fumes and c able Native potential: No PvB assessment: No in the event of unpro- log-size quantities c local, state and fed lot Regulated ot applicable Not applicable	vxides. Over-exposu data available o data available fessional handling o only. Federal regu eral regulations or	re to dust and r disposal. ations may a contract with	fumes may caus poly to empty c a licensed che	e mouth, eye, and nose irrita container. State and/or loc emical disposal agency.
Aspiration hazard: Potential health effinhalation: Inhalation Ingestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional information fection 12 Toxicity to fish: No Porsistence and de Abbility in soil: No Differ adverse effe Section 13 These disposal gue gulations may be Section 14 JN/NA number: Hazard class: No Exceptions: No Section 15 Inhemical is consider	Data not available fects: on of dust or fume may can harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available etts: An environmental h Disposal consider uidelines are intended de different. Dispose of Transport informa Not applicable lot applicable applicable Regulatory inform	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vf nazard cannot be excluded rations for the disposal of catal of in accordance with all ation Shipping name: N Packing group: No 2020 ERG Guide # ation umber for the anhydrous form	ce metal fumes and c able Native potential: No PvB assessment: No in the event of unpro- log-size quantities c local, state and fed lot Regulated ot applicable Not applicable is on the Inventory list.	vxides. Over-exposu data available o data available ifessional handling o only. Federal regu eral regulations or Reportable Qu	re to dust and r disposal. ations may a contract with antity: No	fumes may caus oply to empty c a licensed che Ma	se mouth, eye, and nose irrita container. State and/or loc emical disposal agency. arine pollutant: No
Aspiration hazard: Potential health eff nhalation: Inhalatic ngestion: May be I Skin: May cause de Eyes: Contact with Signs and sympto Additional informa Section 12 Foxicity to fish: No Foxicity to daphnia Foxicity to daphnia	Data not available fects: on of dust or fume may can harmful if swallowed. ermatitis. eyes may cause mecha ms of exposure: Over- ation: RTECS #: None Ecological informa o data available a and other aquatic inv No data available egradability: No data a o data available etts: An environmental h Disposal consider uidelines are intended de different. Dispose of Transport informa Not applicable lot applicable applicable Regulatory inform	ause irritation to eyes, nose nical irritation. heating of alloy can produ assigned ation ertebrates: No data availa vailable Bioaccumu PBT and vf nazard cannot be excluded rations for the disposal of catal of in accordance with all ation Shipping name: N Packing group: No 2020 ERG Guide # ation	ce metal fumes and c able Native potential: No PvB assessment: No in the event of unpro- log-size quantities c local, state and fed lot Regulated ot applicable Not applicable	vxides. Over-exposu data available o data available fessional handling o only. Federal regu eral regulations or	re to dust and r disposal. ations may a contract with	fumes may caus poly to empty c a licensed che	e mouth, eye, and nose irrita container. State and/or loc emical disposal agency.

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Section 1

Product

Identification

INNOVATING SCIENCE® by Aldon 221 Root

"Cutting edge science for the classroom"

ZINC NITRATE, 0.1 MOLAR 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.

TTOULOL		
Synonyms	Zinc Nitrate, Water Solution	
Section 2	Hazards identification	
CHS Classi Acute toxicil Skin irritation STOT SE (C CHS Label H303: May I H316: Caus H320: Caus	Ins: None known ification: ty (Category 5) n (Category 3) n (Category 2B)	 Precautionary statement: P261: Avoid breathing mist/vapours/spray. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. 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. P337+P313: If eye irritation persists: Get medical attention. P332+P313: If skin irritation occurs: Get medical attention. P312: Call a POISON CENTER or doctor if you feel unwell. 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) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3 Composition / information on ingredients					
Chemical Name		CAS #	%	EINECS	
Water Zinc nitrate, hexahydrate		732-18-5 196-18-6	97.03% 2.97%	231-791-2 231-943-8	
Section 4 First ai	d 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. 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.

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.	Zinc nitrate	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/MSHAapproved respirator.

approved respirator.							
Section 9	Physical and chemica	al properties					
Appearance: Clear, colorless liquid. Evaporation rate (Water = 1): <1						: Data not available Ire: Data not available. ble. re	
Section 10	Stability and reactivity	у					
Chemical stability: Conditions to avoid	Stable I: Excessive temperatures		us polymerization: V	Will not occur.			
phosphite.				powders, stannous	chloride, phosp	horous, thiocya	nates, cyanides, sodium hypo-
Hazardous decomp	osition products: Nitroge	en oxides and toxic fun	ies of zinc oxides.				
Section 11	Toxicological informa	ition					
Skin corrosion/irrit. Serious eye damag Respiratory or skin Germ cell mutagen Carcinogenity: Dat NTP: No component IARC: No componen OSHA: No compone Ca Prop 65: This pro Reproductive toxic STOT-single expos STOT-repeated exp Aspiration hazard: Potential health eff Inhalation: Inhalation Ingestion: Ingestion Skin: Contact with s Eyes: Contact with s	e/irritation: Irritant sensitization: Data not a icity: Data not available a not available of this product present at lit t of this product present at not of this product present at duct does not contain any ity: Data not available Data not available Data not available ects: n causes cough, sore throa causes abdominal cramps kin causes redness and pa ayes causes redness, pain ns of exposure: Exercise ion: RTECS #: ZH477500	vailable evels greater than or e levels greater than or t levels greater than or chemicals known to th distribution to the in. and blurred vision. appropriate procedure 00 [Zinc nitrate, hexah	qual to 0.1% is identif equal to 0.1% is identi equal to 0.1% is ident e State of California to lips, fingernails and st s to minimize potentia	ied as a known or ai ffied as probable, po tified as a carcinoge o cause cancer or re	essible or confirm or potential ca	ned human card arcinogen by OS	o i
Section 12	Ecological informatio	n					
Toxicity to algae: N Persistence and de Mobility in soil: No Other adverse effect	and other aquatic inverte o data available gradability: No data availa data available ‹ts: An environmental haza	able Bioaccumu PBT and vi ard cannot be excluded	llative potential: No PvB assessment: No	o data available	r disposal.		
Section 13	Disposal consideratio			nhy Fodoral rami	ationa may	nhu to commt -	optainor Stato and/ar las-1
	e different. Dispose of in						ontainer. State and/or local emical disposal agency.
Section 14	Transport informatio						
UN/NA number: Hazard class: No Exceptions: Not	ot applicable	Shipping name: N Packing group: N 2020 ERG Guide #	ot applicable	Reportable Qua	antity: Yes	Marine po	ollutant: No
Section 15	Regulatory information						
	d to be listed if the CAS numbe					NDO	CA Drop CC
Compone Zinc nitrate (as solid)		TSCA Listed	CERLCA (RQ) 1000 lbs (454 kg)	RCRA code Not listed	DSL Not listed	NDSL Not listed	CA Prop 65 This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Section 16	Other information						
dent determinations of s	suitability and completeness of ncy for Research on Cancer, C	information from all sour	ces to assure proper use	of these materials and	the safety and he	ealth of employees	ered by them and must make indepen- s. NTP: National Toxicology Program, osure, RE: Repeated Exposure,

ERG: Emergency Response Guidebook. Form 06/2015