2134287 GENERAL STORAGE CODE GREEN

Page E1 of E2

Section 1

Identification

INNOVATING SCIENCE "Cutting edge science for the classroom"

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

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

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

| Product POTASSIUM THIOCYANATE, 1 MOLAR SOLUTION | |
|---|--|
| Synonyms Potassium Thiocyanate, Water Solution | |
| Section 2 Hazards identification | |
| Signal word: WARNING Pictograms: No symbol required Target organs: Central nervous system, Cardiovascular system, Thyroid | Precautionary statement: P301+P304+P312: IF SWALLOWED OR INHALED: Call a POISON CENTER or doctor if you feel unwell. |
| GHS Classification: Acute toxicity, oral (Category 5) Acute toxicity, inhalation (Catégorie 5) | |
| GHS Label information: Hazard statement: H303: May be harmful if swallowed. H333: May be harmful if inhaled. | |
| | |
| | |
| | |

Hazards not otherwise classified:

Physical hazards not otherwise classified (PHNOC) - Not Known

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

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

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

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

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

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

Section 5 Fire fighting measures

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

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

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental release measures

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

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

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

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

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

| Section 8 | Exposure controls / personal prot | ection | | |
|------------------|-----------------------------------|-----------------|-----------------|-----------------|
| Exposure Limits: | Chemical Name | ACGIH (TLV) | OSHA (PEL) | NIOSH (REL) |
| Exposure Linits. | Potassium thiocyanate | Not established | Not established | Not established |

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

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

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

Page E1 of E2

Section 1

Identification

INNOVATING SCIENCE^{® by All} 221

"Cutting edge science for the classroom"

by Aldon Corporation 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.

THYMOLPHTHALEIN, 0.04% SOLUTION Product Synonyms Thymolphthalein, 0.04% in Ethyl Alcohol / Thymolphthalein, 0.04% in Alcohol / Section 2 Hazards identification Signal word: DANGER Precautionary statement: Pictograms: GHS02 / GHS06 / GHS08 P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking Target organs: Eyes, Central nervous system, Liver, Kidneys. P233+P235: Keep container tightly closed. Keep cool. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ventilating/lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist/vapours/spray. **GHS Classification:** P264: Wash hands thoroughly after handling. Flammable liquid (Category 2) P270: Do not eat, drink or smoke when using this product. Acute toxicity, oral (Category 3) P271: Use only outdoors or in a well-ventilated area. Acute toxicity, dermal (Category 3) P280: Wear protective gloves/protective clothing/eye protection/face protection. Acute toxicity, inhalation (Category 3) P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor. Eye irritation (Category 2B) P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove STOT-SE (Category 2) contact lenses, if present and easy to do. Continue rinsing. STOT-SE (Category 3) P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. GHS Label information: Hazard statement: P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for H225: Highly flammable liquid and vapour. breathing. H301: Toxic if swallowed. P308+P311: IF exposed or concerned: Call a POISON CENTER or doctor. H311: Toxic in contact with skin. P337+P313: If eye irritation persists: Get medical attention. H319: Causes serious eve irritation. P361+P364: Take off immediately all contaminated clothing and wash it before reuse. H331: Toxic if inhaled. P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water H336: May cause drowsiness or dizziness. spray to extinguish. H371: May cause damage to organs. P403+P405: Store in a well-ventilated place. Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations. Hazards not otherwise classified:

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

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

Section 4 First aid measures

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

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

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

SKIN ABSORPTION: TOXIC IN CONTACT WITH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire fighting measures

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

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

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

Section 6 Accidental release measures

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

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

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

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

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

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

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

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

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

Page E1 of E2

Section 1

Identification

INNOVATING SCIENC

"Cutting edge science for the classroom"

by Aldon Corporation 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 0.5% PHENOLPHTHALEIN IN ISOPROPYL ALCOHOL SOLUTION | |
|---|--|
| Synonyms 0.5% Phenolphthalein in IPA | |
| Section 2 Hazards identification | |
| Section 2 Hazards identification Signal word: DANGER Pictograms: GHS02 / GHS07 / GHS08 Target organs: Central nervous system, Liver, Kidneys. Image: Central nervous system, Liver, Kidneys. State: Central nervous system, Central nervous syste | Precautionary statement(s): P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P233: Keep container tightly closed. P241: Use explosion-proof electrical/ventilating/lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing mist/vapours/spray. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P37+P313: If eye irritation persists: Get medical attention. P370+P378: In case of fire: Use dry chemical, dry sand, alcohol foam, carbon dioxide to extinguish. P403+P225: Store in a well-ventilated place. Keep cool. P405: Store locked up. |
| | P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations. |
| Hazards not otherwise classified: Health hazards not otherwise classified (HHNOC) - Not Known Physical hazards not otherwise classified (PHNOC) - Not Known | |

Physical hazards not otherwise classified (PHNOC) - Not Known

| Section 3 | Composition / information on | ingredients | | | |
|-------------------|------------------------------|-------------|-------|-----------|--|
| Chemical Name | | CAS # | % | EINECS | |
| Water | | 7732-18-5 | 55.7% | 231-791-2 | |
| Isopropyl alcohol | | 67-63-0 | 43.8% | 200-661-7 | |
| Phenolphthalein | | 77-09-8 | 0.5% | 201-004-7 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Section 4 | First aid measures | | | | |

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

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

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

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

Section 5 Fire fighting measures

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

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

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

Accidental release measures Section 6

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

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

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

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

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

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

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

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

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

CORROSIVE STORAGE CODE WHITE

Page E1 of E2

Section 1

Identification

INNOVATING SCIENCE

"Cutting edge science for the classroom"

by Aldon Corporation 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 | FERRIC CHLORIDE, HEXAHYDRATE | |
|---|--|---|
| Synonyms | Iron(III) Chloride, Hexahydrate | |
| Section 2 | Hazards identification | |
| Pictograms Target orga GHS Class Corrosive to Acute toxici Skin irritatic Eye damag GHS Label H290: May H302: Harr H315: Caus | d: DANGER s: GHS05 / GHS07 ans: Eyes, Skin, Respiratory system, Liver, Gastrointestinal tract ification: o metals (Category 1) ity, oral (Category 4) on (Category 2) ge (Category 1) information: Hazard statement: be corrosive to metals. nful if swallowed. ses skin irritation. ses serious eye damage. | Precautionary statement: P234: Keep only in original container. P406: Store in corrosive resistant container with a resistant inner liner. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell. P302+P352: IF ON SKIN: Wash with plenty of water and soap. P332+P313: If skin irritation occurs: Get medical attention. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remov contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER or doctor. P362+P364: Take off contaminated clothing and wash it before reuse. 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 |
| Ferric chloride, he: | xahydrate | 10025-77-1 | 100% | 231-729-4 [anhydrous] |
| Section 4 | First aid measures | | | |

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

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

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

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire fighting measures

Suitable Extinguishing Media: Do NOT use water! Dry chemicals, CO2 or other agents as appropriate for surrounding fires.

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

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. May release toxic fumes of Hydrogen chloride gas in a fire.

Section 6 Accidental release measures

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

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

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

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

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources. Avoid contact with humid or wet areas. Keep away from metals.

| Section 8 | Exposure controls / personal protection | | | | | | |
|------------------|---|--------------------------|------------|--------------------------|--|--|--|
| Exposure Limits: | Chemical Name | ACGIH (TLV) | OSHA (PEL) | NIOSH (REL) | | | |
| Exposure Limits. | Iron salts, soluble, as Fe | TWA: 1 mg/m ³ | No listing | TWA: 1 mg/m ³ | | | |

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

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

| Section 9 | Physical and chemical p | roperties | | | | | | | |
|--|--|--|---|---|--|---|--|--|--|
| Odor: Hydrochlo Odor threshold: pH: 2 (0.1M solu | Data not available. ition) ng point: 37°C (99°F) lata not available | Flammability Explosion lim Vapor pressu Vapor density Relative density | rate (=1): Data not ava (solid/gas): Data not ava nits: Lower / Upper: Data re (mm Hg): Data not ava / (Air = 1): >1 / (Specific gravity): Data n): 920 g/L in water. | ailable. ta not available vailable | Auto-ignit Decompo Viscosity: Molecular | | e: Data not available u re: Data not available. ble. •6H ₂ O | | |
| Section 10 | Stability and reactivity | d reactivity | | | | | | | |
| | void: Excessive temperatures, he | at, water, potassiu | - | e materials. | | | | | |
| - | aterials: Water, oxidizing agents, omposition products: Hydrogen | | | conois. | | | | | |
| | | gas on contact wi | | | | | | | |
| Section 11 | Toxicological informatio | n | | | | | | | |
| Carcinogenity: NTP: No compor IARC: No compo OSHA: No comp | genicity: Data not available Data not available nent of this product present at leve onent of this product present at leve onent of this product present at leve onent of this product present at leve product does not contain any che | els greater than o vels greater than o | r equal to 0.1% is identifi or equal to 0.1% is identi | ed as probable, po fied as a carcinoge | ssible or conf n or potential | irmed human car carcinogen by O | | | |
| STOT-single exp STOT-repeated Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May cause Skin: May cause Eyes: May cause Signs and symp | posure: Data not available exposure: Data not available rd: Data not available | age. May also cau vision, burns, sev al health effects ab | use gastrointestinal dam | age. nent blindness. | - | | oughing, shortness of breath, lun | | |
| STOT-single exp STOT-repeated Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May cause Eyes: May cause Signs and symp Additional infor Section 12 | posure: Data not available exposure: Data not available rd: Data not available effects: or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama e severe irritation and/or burns. e severe irritation, tearing, blurred btoms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information | age. May also cau vision, burns, sev al health effects ab | use gastrointestinal dam | age. nent blindness. | - | | oughing, shortness of breath, lun | | |
| STOT-single exp STOT-repeated A Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May couse Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to daph Toxicity to daph Toxicity to daph Toxicity to algae Persistence and Mobility in soil: Other adverse e Section 13 These disposal | posure: Data not available exposure: Data not available effects: or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama e severe irritation and/or burns. e severe irritation, tearing, blurred botoms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information No data available nia and other aquatic invertebra e: No data available degradability: No data available No data available degradability: No data available ffects: An environmental hazard Disposal considerations guidelines are intended for the | age. May also cau vision, burns, sev al health effects at Anhydrous) ates: No data avai e Bioaccum PBT and v cannot be exclude e disposal of cata | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential: No d vPvB assessment: No d alog-size quantities on | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul | inimize poten r disposal. ations may a | tial hazards. | container. State and/or local | | |
| STOT-single exp STOT-repeated of Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May couse Eyes: May cause Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to daph Toxicity to daph Toxicity to daph Toxicity to algae Persistence and Mobility in soil: Other adverse e Section 13 These disposal regulations may | posure: Data not available exposure: Data not available effects: or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama e severe irritation and/or burns. e severe irritation, tearing, blurred botoms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information No data available nia and other aquatic invertebra e: No data available degradability: No data available Mo data available ffects: An environmental hazard Disposal considerations guidelines are intended for the be different. Dispose of in acc | age. May also cau vision, burns, sev al health effects at Anhydrous) ates: No data avai e Bioaccum PBT and v cannot be exclude e disposal of cata | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential: No d vPvB assessment: No d alog-size quantities on | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul | inimize poten r disposal. ations may a | tial hazards. | container. State and/or local | | |
| STOT-single exp STOT-repeated of Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May couse Eyes: May cause Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to daph Toxicity to daph Toxicity to daph Toxicity to daph Section 13 These disposal regulations may Section 14 UN/NA numbe Hazard class: | posure: Data not available exposure: Data not available effects: or vapors may be corrosive or irrit d pulmonary edema. cause severe liver or kidneys dama e severe irritation and/or burns. e severe irritation, tearing, blurred totoms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information No data available nia and other aquatic invertebra e: No data available degradability: No data available No data available degradability: No data available ffects: An environmental hazard Disposal considerations guidelines are intended for the be different. Dispose of in action Transport information pr: UN1759 Shipping | age. May also car vision, burns, sev al health effects at Anhydrous) ates: No data avai e Bioaccum PBT and v cannot be exclude a disposal of cata cordance with a g name: Corro group: III | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential : No d vPvB assessment : No d vPvB assessment : No d alog-size quantities on ill local, state and fede osive solids, n.o.s., (Fe Reportab | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul ral regulations or | r disposal. ations may a contract wit | tial hazards. apply to empty of h a licensed cho | container. State and/or local | | |
| STOT-single exp STOT-repeated of Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May of Skin: May cause Eyes: May cause Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to fish: Toxicity to fish: Toxicity to algae Persistence and Mobility in soil: Other adverse e Section 13 These disposal regulations may Section 14 UN/NA numbe Hazard class: Exceptions: | posure: Data not available exposure: Data not available erd: Data not available effects: or vapors may be corrosive or irrit or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama severe irritation and/or burns. e severe irritation, tearing, blurred bottoms of exposure: potoms of exposure: See Potentia mation: RTECS #: LJ9100000 (intermediation) No data available mation: RTECS #: inia and other aquatic invertebra : No data available Idegradability: No data available Modata available Iffects: An environmental hazard Disposal considerations guidelines are intended for the bed different. Dispose of in action of the bed different. youddlines are information mation: Shipping a Packing Naipping | age. May also car vision, burns, sev al health effects at Anhydrous) ates: No data avai e Bioaccum PBT and v cannot be exclude a disposal of cata cordance with a g name: Corro group: III | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential : No d vPvB assessment : No d vPvB assessment : No d alog-size quantities on ill local, state and fede osive solids, n.o.s., (Fe Reportab | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul ral regulations or erric chloride, he le Quantity: 1,(| r disposal. ations may a contract wit | tial hazards. apply to empty of h a licensed cho | container. State and/or local emical disposal agency. | | |
| STOT-single exp STOT-repeated A Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May couse Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to daph Toxicity to algae Persistence and Mobility in soil: Other adverse e Section 13 These disposal regulations may Section 14 UN/NA numbe Hazard class: Exceptions: I Section 15 A chemical is consid | posure: Data not available exposure: Data not available erd: Data not available effects: or vapors may be corrosive or irrit or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama severe irritation and/or burns. e severe irritation, tearing, blurred bottoms of exposure: potoms of exposure: See Potentia mation: RTECS #: L9100000 (f Ecological information No data available no data available Idegradability: No data available Idegradability: No data available Idegradability: No data available If cots: An environmental hazard Disposal considerations guidelines are intended for the Yee different. Dispose of in ac If | age. May also car vision, burns, sev al health effects at Anhydrous) ates: No data avai e Bioaccum PBT and v cannot be exclude a disposal of cata cordance with a g name: Corro group: III ss than 5 Kg | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential: No d vPvB assessment: No d vPvB assessment: No d alog-size quantities on ill local, state and fede osive solids, n.o.s., (Fe Reportab 2020 ERG m is on the Inventory list. | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul ral regulations or erric chloride, he le Quantity: 1,0 i Guide # 154 | inimize poten r disposal. ations may a contract wit xahydrate) 000 lbs (454 | tial hazards. apply to empty o h a licensed cho kg) M | container. State and/or local emical disposal agency. arine pollutant: No | | |
| STOT-single exp STOT-repeated of Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May couse Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to fish: Toxicity to algae Persistence and Mobility in soil: Other adverse e Section 13 These disposal regulations may Section 14 UN/NA number Hazard class: Exceptions: Section 15 A chemical is consid | posure: Data not available exposure: Data not available erd: Data not available effects: or vapors may be corrosive or irrit or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama severe irritation and/or burns. e severe irritation, tearing, blurred bottoms of exposure: severe irritation, tearing, blurred bottoms of exposure: totoms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information No data available nia and other aquatic invertebra Seconsiderations No data available Idegradability: Idegradability: No data available | age. May also car vision, burns, sev al health effects at Anhydrous) ates: No data avail e Bioaccum PBT and v cannot be exclude a disposal of cata cordance with a g name: Corro group: III ss than 5 Kg | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential: No d vPvB assessment: No d ed in the event of unprofe alog-size quantities on ill local, state and fede osive solids, n.o.s., (Fe Reportab 2020 ERG | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul ral regulations or erric chloride, he le Quantity: 1,(| r disposal. ations may a contract wit | tial hazards. apply to empty of h a licensed cho | container. State and/or local emical disposal agency. arine pollutant: No CA Prop 65 | | |
| STOT-single exp STOT-repeated of Aspiration haza Potential health Inhalation: Dust inflammation and Ingestion: May couse Signs and symp Additional infor Section 12 Toxicity to fish: Toxicity to fish: Toxicity to algae Persistence and Mobility in soil: Other adverse e Section 13 These disposal regulations may Section 14 UN/NA number Hazard class: Exceptions: Section 15 A chemical is consid | posure: Data not available exposure: Data not available erd: Data not available effects: or vapors may be corrosive or irrit or vapors may be corrosive or irrit pulmonary edema. cause severe liver or kidneys dama severe irritation and/or burns. e severe irritation and/or burns. e severe irritation, tearing, blurred totms of exposure: See Potentia mation: RTECS #: LJ9100000 (Ecological information No data available no data available Interact invertebra is No data available Idegradability: No data available Idegradability: No data available Interact information Suidelines are intended for the bed different. Disposal considerations guidelines are intended for the bed different. Dispose of in act Transport information er: UN1759 Shipping 8 Packing Limited quantity equal to or le Regulatory information dered to be listed if the CAS number for ponent Formation | age. May also car vision, burns, sev al health effects at Anhydrous) ates: No data avail e Bioaccum PBT and v cannot be exclude a disposal of cata cordance with a g name: Corro group: III ss than 5 Kg | use gastrointestinal dama vere damage, and perma bove. Exercise appropria ilable nulative potential: No d vPvB assessment: No d vPvB assessment: No d alog-size quantities on ill local, state and fede osive solids, n.o.s., (Fe Reportab 2020 ERG m is on the Inventory list. | age. nent blindness. te procedures to m ata available data available essional handling o ly. Federal regul ral regulations or erric chloride, he le Quantity: 1,0 i Guide # 154 | inimize poten r disposal. ations may a contract wit xahydrate) 000 lbs (454 | tial hazards. apply to empty o h a licensed cho kg) M | container. State and/or local emical disposal agency. arine pollutant: No | | |

Page E1 of E2

Section 1

Identification

INNOVATING SCIENCE

"Cutting edge science for the classroom"

by Aldon Corporation 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 FLUORIDE, 1 MOLAR SOLUTION | |
|---|---|
| Synonyms Sodium Fluoride, Aqueous Solution | |
| Section 2 Hazards identification | |
| Signal word: DANGER Pictograms: GHS06 Target organs: Skeletal system, Kidneys, Central nervous system | Precautionary statement: P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor. P303: Rinse mouth. P302+P352: IF ON SKIN: Wash with plenty of water and soap. P332+P313: If skin irritation occurs: Get medical attention. P362+P364: Take off contaminated clothing and wash it before reuse. P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical attention. P405: Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations. |

Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Releases toxic hydrogen fluoride gas in contact with acids, Contact with acids liberates very toxic gas. Physical hazards not otherwise classified (PHNOC) - Not Known

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

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

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

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

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

Section 5 Fire fighting measures

Suitable Extinguishing Media: Dry chemical, CO2 or water spray.

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

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

Section 6 Accidental release measures

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

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

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

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

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

| Section 8 | Exposure controls / personal protection | | | | | | |
|------------------|---|-----------------|-----------------|-----------------|--|--|--|
| Exposure Limits: | Chemical Name | ACGIH (TLV) | OSHA (PEL) | NIOSH (REL) | | | |
| Exposure Linits. | Sodium fluoride | Not established | Not established | Not established | | | |

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

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

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

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

Page E1 of E2

Section 1

Identification

"Cutting edge science for the classroom"

by Aldon Corporation 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.

HYDROCHLORIC ACID, 32-36% Product Synonyms Muriatic Acid ; Hydrogen Chloride Section 2 Hazards identification Signal word: DANGER Precautionary statement(s): Pictograms: GHS05 / GHS07 P234: Keep only in original container. Target organs: Respiratory system, skin, eyes, lungs. P260: Do not breathe mist/vapours/spray. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated **GHS Classification:** clothing. Rinse skin with water/shower. Corrosive to metals (Category 1) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for Serious eye damage (Category 1) breathing Skin corr. (Category 1B) P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. STOT SE (Category 3) Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER or doctor. GHS Label information: Hazard statement(s): P363: Wash contaminated clothing before reuse. H290: May be corrosive to metals. P390: Absorb spillage to prevent material damage. H314: Causes severe skin burns and eye damage. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. H335: May cause respiratory irritation. P406: Store in corrosive resistant container with a resistant inner liner. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Hazards not otherwise classified:

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

| Section 3 | Composition / information on | ingredients | | | |
|----------------------------|------------------------------|------------------------|------------------|------------------------|--|
| Chemical Name | | CAS # | % | EINECS | |
| Water Hydrochloric acid | | 7732-18-5 7647-01-0 | 64-68% 32-36% | 231-791-2 231-595-7 | |
| Section 4 | First aid measures | | | | |

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

INHALATION: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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

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

Section 5 Fire fighting measures

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

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

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

Section 6 Accidental release measures

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

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

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

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

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from physical damage and sunlight. Protect from moisture.

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

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low. Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical and chemical properties Evaporation rate (= 1): Data not available. Appearance: Clear, colorless, fuming liquid. Partition coefficient: (n-octanol / water): Data not available. Flammability (solid/gas): Data not available. Odor: Pungent odor. Auto-ignition temperature: Data not available Explosion limits: Upper/Lower: Data not available. Odor threshold: Data not available. Decomposition temperature: Data not available. Vapor pressure (mm Hg): Approx. 25 @ 20°C (68°F) pH: <1.5 acidic, in solution. Viscosity: Data not available. Vapor density (Air = 1): Data not available. Melting / Freezing point: Approx. -45°C (-49°F) Molecular formula: HCI Boiling point: 81.11-85°C (178-185°F) Relative density (Specific gravity): Approx. 1.16 @ 20°C Molecular weight: 36.46 Solubility(ies): Soluble in water. Flash point: Not flammable. Section 10 Stability and reactivity Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Containers may burst when heated. Avoid contact with water. Incompatible materials: Metals, bases, active metals, alkali metals, oxidizing agents, hydroxides, amines, carbonates, cyanides, sulfides, sulfites, formaldehvde Hazardous decomposition products: Hydrogen chloride gas. Section 11 **Toxicological information** Acute toxicity: Data not available Skin corrosion/irritation: Skin-rabbit - causes burns. Serious eye damage/irritation: Eyes-rabbit - Corrosive to eyes. Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP. IARC: Group 3: Not classifiable as to its carcinogenicity to humans. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. Reproductive toxicity: Data not available STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: May be harmful if inhaled. Material is extrememy destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. Skin: May be harmful if absorbed through skin. Causes skin burns. Eves: Causes eve burns. Signs and symptoms of exposure: Burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Additional information: RTECS #: MW4025000 Section 12 Ecological information Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid) Toxicity to daphnia and other aquatic invertebrates: No data available Toxicity to algae: No data available Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soil: No data available PBT and vPvB assessment: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Section 13 **Disposal considerations** These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. Section 14 Transport information UN/NA number: UN1789 Shipping name: Hydrochloric acid Hazard class: 8 Packing group: II Reportable Quantity: No Marine pollutant: No Exceptions: Limited quantity equal to or less than 1 Lt 2020 ERG Guide # 157 Section 15 **Regulatory information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. RCRA code DSL NDSL Component TSCA CERLCA (RQ) CA Prop 65 This product does not contain Hydrochloric acid Listed Not listed D002 Listed Not listed any chemicals known to the State of California to cause cancer or reproductive toxicity. Section 16 Other information

Page E1 of E2

Section 1

Identification

"Cutting edge science for the classroom"

by Aldon Corporation 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.

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

Hazards not otherwise classified:

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

| Section 3 | Composition / information or | ingredients | | | |
|----------------------------|------------------------------|-------------|---------------------------------------|------------------------|--|
| Chemical Name | | CAS # | % | EINECS | |
| Water Ammonium hydroxic | le (as Ammonia) | | oximately 70-72% roximately 28-30% | 231-791-2 215-647-6 | |
| Section 4 | First aid measures | | | | |

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

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

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

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

Section 5 Fire fighting measures

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

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

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

Section 6 Accidental release measures

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

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

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

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

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

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

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

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

| approved respirator. | | | , 5 | , , | I | , | |
|--|--|--|---|--|--|---|---|
| Section 9 | Physical and chemical pro | perties | | | | | |
| Appearance: Clear, Odor: Strong, punge Odor threshold: Da pH: Data not availab Melting / Freezing p Boiling point: 36°C Flash point: Data no | colorless liquid. nt, suffocating odor. ta not available. le. bint: -77°C (-106°F) (97°F) | Evaporation rate (Water = 1): 1 Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: 16% / 27%(NH ₃ gas) Vapor pressure (mm Hg): 115 mm @ 20°C (68°F) Vapor density (Air = 1): 0.6-1.2 Relative density (Specific gravity): 0.900 Solubility(ies): Complete in water. | | | | : 651°C (1204°F) re: Data not available. ole. | |
| Section 10 | Stability and reactivity | | | | 1 | | |
| | Stable : Excessive temperatures which als: Acids, strong oxidizers, hal | cause evapora | | Vill not occur. | | | |
| | osition products: Decomposes | | | 2°F) to hydrogen ga | as and nitroder | n oxides | |
| | | to annionia ge | | 2 i) to nyarogon ge | | | |
| Skin corrosion/irrita Serious eye damag Respiratory or skin Germ cell mutageni Carcinogenity: Dat NTP: No component IARC: No componen Ca Prop 65: This pro Reproductive toxici STOT-single expose STOT-repeated exp Aspiration hazard: Potential health effe Inhalation: Burning s Ingestion: Abdomina Skin: Redness, skin Eyes: Redness, pair Signs and symptom skin. Inhalation may Additional informat | of this product present at levels t of this product present at levels t of this product present at level duct does not contain any chemi ty : Data not available ure : The substance or mixture is osure : Data not available Data not available ects : iensation, cough, labored breath I cramps, abdominal pain, sore t burns, pain, blisters. I, blurred vision, burns. as of exposure : Material is extrr be fatal as a result of spasm, inf ion: RTECS #: BQ9625000 [Ar Ecological information] | nt. e irritant. le greater than or of greater than or s greater than or cals known to th cals known to the cals | equal to 0.1% is identifi equal to 0.1% is identifi r equal to 0.1% is identi ne State of California to becific target organ toxi f breath, sore throat. re to tissue of the mucc edema of the larynx an xide, anhydrous] | ied as probable, pos ified as a carcinoge cause cancer or rep cant, single exposur us membranes, upp | ssible or confir n or potential c productive toxic re, category 3 v per respiratory, | med human card carcinogen by OS city. with narcotic effe gastrointestinal | SHA. ects. and digestive tracts, eyes and |
| Toxicity to daphnia Toxicity to algae: TL Persistence and deg Mobility in soil: No | 50 Lepomis macrochirus (bluegil and other aquatic invertebrate m Diatom (algae) 420 mg/L/120 gradability: No data available data available ts: An environmental hazard cai | s: LC50 Daphni H @ 22°C (50% Bioaccum PBT and v | a magna (water flea) 0 growth reduction) ulative potential: No PvB assessment: No | lata available data available | | | |
| Section 13 | Disposal considerations | | | | | | |
| | delines are intended for the d different. Dispose of in acco Transport information | | | | | | |
| UN/NA number: | • | ame: Ammo | nia solution | | | | |
| Hazard class: 8 | Packing gi ited quantity equal to or less | oup: III | Reporta | ble Quantity: 1,0 CG Guide # 154 | 000 lbs (454 | kg) Ma | arine pollutant: No |
| Section 15 | Regulatory information | | | | | | |
| | t to be listed if the CAS number for th | • | • | | | | |
| Compone | | TSCA | CERLCA (RQ) | RCRA code | DSL | NDSL | CA Prop 65 |
| Ammonium hydroxide | | Listed | 1,000 lbs (454 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 | Other information | | | | | | |
| The information contained | ed herein is furnished without warran | ty of any kind. En | ployers should use this in | formation only as a su | pplement to othe | er information gath | ered by them and must make indepen- |