



RemRx[®] CRP Permanganate

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RemRx[™] CRP

Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product Name: RemRx[®] CRP Permanganate

CAS Number: MIXTURE

Other means of identification:

Synonyms: None Known

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: Treatment of groundwater and soil pollution

Recommended restrictions: Uses other than those identified above.

1.3 Details of the supplier of the safety data sheet

Company Name: Technology Development Group, LLC

Company Address: 2901 East Gate City Boulevard
Greensboro, NC 27401

Company Telephone Number: 336-217-5171

Company Contact Name: Alexis Carpenter

Company Contact Email: alexis.carpenter@triadgrowthpartners.com

Company Website: www.triadgrowthpartners.com

Emergency Phone Number: For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC
1-800-424-9300 / +1 703-527-3887 CCN 846984

2. Hazard(s) identification

Classification of the substance/mixture in accordance with US 29 CFR 1910.1200 (HAZCOM 2012).

Classification of the Substance or Mixture:

Physical hazards:

Oxidizing Solids – Category 2

Health hazards:

Acute Toxicity (Oral) – Category 4

Skin Corrosion/Irritation – Category 1B

Serious Eye Damage/Irritation – Category 1

Specific Target Organ Toxicity (Single Exposure) – Category 3 (Respiratory Irritation)

Specific Target Organ Toxicity (Repeated Exposure) – Category 2 (Lungs, Respiratory System)

Environmental hazards:

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Not adopted under WHMIS 2015.

Hazard(s) not otherwise classified (HNOC):

Airborne dust may cause respiratory irritation and mechanical abrasion of the eye.

Label Elements:

Pictograms:



Signal Word: Danger

Hazard Phrases:

H272: May intensify fire; oxidizer.

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

H373: Causes damage to organs (Lungs; Respiratory System) through prolonged or repeated exposure via inhalation.

Precautionary Phrases:

Prevention:

P210: Keep away from heat, hot surfaces, spark, open flames, and other ignition sources.

P220: Keep away from clothing and other combustible materials.

P221: Take any precaution to avoid mixing with combustibles/reducing agents.

P260: Do not breathe dust/fumes/gas/mist/vapors/spray.

P264: Wash thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P370+378 In case of fire: Use water. Do not use dry chemicals or foams. CO₂ or Halon may provide limited control.

P301+P312: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353: IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].

P363: Wash contaminated clothing before reuse.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P321: Specific treatment (see sections 4 to 8 of this SDS and any additional information on the label).

Storage:

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P405: Store locked up.

P403+233: Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501: Dispose of contents/container to a suitable disposal site, in accordance with applicable local/regional/national and international regulations.

3. Composition/information on ingredients

Mixture:

| Ingredient Name | CAS Number | Concentration (Wt. %) |
|------------------------|--------------|-----------------------|
| Potassium Permanganate | 7722-64-7 | ≥20% |
| Proprietary Blend | Trade Secret | ≤80% |

The specific chemical identity and/or exact percentage (concentration) of ingredient(s) are being withheld as a Trade Secret in Accordance with paragraph (i) of CFR 1910.1200.

4. First-aid measures

4.1 Description of necessary measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical STRAIN. Depending on the victim's condition: doctor/hospital.

Inhalation:

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek immediate medical attention. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, call 911 and then provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin Contact:

IF ON SKIN or hair: Immediately take off any contaminated clothing, including shoes. Rinse skin with water or shower for at least 15 – 20 minutes. Seek immediate medical attention. Wash contaminated clothing before reuse. Contaminated clothing should not be allowed outside of the workplace.

Eye Contact:

IF IN EYES: Rinse immediately with plenty of water while holding eyelids wide apart. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Seek immediate medical advice/attention (preferably from an ophthalmologist).

Ingestion:

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IF SWALLOWED: Wash out mouth with water. Do not induce vomiting unless directed to. Never give anything by mouth to an unconscious person. Call a POISON CONTROL CENTER or doctor/physician for treatment advice.

4.2 Most important symptoms/effects, acute and delayed

Acute Effects/Symptoms:

Inhalation:

This product may cause respiratory irritation. Symptoms include: cough, labored breathing, sore throat, wheezing and irritation of the mucous membranes lining the respiratory tract. Over-exposure via inhalation may cause lung edema (A medical Emergency) characterized by severe shortness of breath. Symptoms may be delayed. This product is corrosive upon inhalation. Symptoms include breathing difficulties, throat pain and headache.

Skin Contact:

This product is corrosive to the skin and may cause irreversible damage to tissue. Will cause chemical burns upon contact. Symptoms include: pain, blisters, ulceration, redness and inflammation. Contact with skin may leave a brown stain of insoluble manganese dioxide. This can be removed by washing with a mixture of equal volume of household vinegar and 3% hydrogen peroxide, followed by washing with soap and water.

Eye Contact:

This product may cause severe and irreversible eye damage. Symptoms include: Pain, tearing, corneal opacification, burning, and diminished/loss of vision. Airborne dust may cause mechanical abrasion of the eyes.

Ingestion:

This product is harmful if swallowed. This product is corrosive and will cause chemical burns of the mouth, throat and digestive system if swallowed. Symptoms include: burning sensation, abdominal pain, diarrhea, nausea, vomiting and shock or collapse. May cause perforation of the digestive tract.

Delayed Effects/Symptoms:

Repeated or prolonged contact may adversely affect the lungs leading to chronic bronchitis and pneumonia. Repeated and or prolonged exposure may cause damage to the liver and kidneys. Chronic inhalation or ingestion of Manganese can cause: Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dyspnea (breathing difficulty), rales, flu-like fever; low-back pain; vomiting; malaise (vague feeling of discomfort); lassitude (weakness, exhaustion); kidney damage.

Medical Conditions Aggravated by Exposure:

Skin contact may aggravate an existing dermatitis. Inhalation of dust may exacerbate asthma or other respiratory problems/conditions.

4.3 Indication of any immediate medical attention and special treatment needed

This product is corrosive by all exposure routes: ingestion, inhalation, skin contact and eye contact. Chemical burns require immediate medical attention. Extreme shortness of breath following inhalation may be indicative of lung Edema (A medical Emergency). Skin contact may also produce brown staining of skin caused by manganese dioxide (alkaline decomposition product).

Notes to Physician:

Inhalation of this product may cause lung Edema. Symptoms may be delayed. Continued observation of the patient is indicated. Skin contact may also produce brown staining of skin caused by manganese dioxide (alkaline decomposition product). This can be removed by washing with a mixture of equal volume of household vinegar and 3% hydrogen peroxide, followed by washing with soap and water.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Use water. Do not use dry chemicals or foams. CO₂ or Halon may provide limited control.

Unsuitable extinguishing media:

The following extinguishing agents are ineffective: Dry chemical, Foam, Carbon dioxide and Halogenated materials.

5.2 Specific hazards arising from the chemical

OXIDIZER: MAY INTENSIFY FIRE. Not combustible but enhances combustion of other substances. This product is a strong oxidizer and poses a fire and explosion risk in contact with combustible substances and reducing agents. May ignite combustibles (wood paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard. This product will react violently with powdered metals and strong bases. Explosive in presence of organic materials and metals.

Hazardous Combustion Products include:

This substance decomposes upon heating to produce irritating, toxic and corrosive fumes including Carbon Oxides, Potassium Oxides, Manganese Oxides and Oxygen which intensifies fire.

5.3 Fire Fighting Instructions

As an immediate precautionary measure, isolate spill or leak area in all directions for at least 25 meters (150 ft.) Keep unauthorized personnel away. Stay upwind, uphill and/or upstream. Ventilate closed spaces before entering. Fire-fighters should wear self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode and full protective gear. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Large Fire:

Flood fire area with water from a distance. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do it without risk.

Fire involving tank, rail car or tank truck:

If tank, rail car or tank truck is involved in a fire, ISOLATE FOR 800 meters (1/2 mile) in all directions. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. The substance is a strong oxidant. It reacts with combustible and reducing materials. Decomposes on heating. This produces irritating, toxic and corrosive fumes including Potassium Oxides, Manganese Oxides and Oxygen which intensifies fire. Reacts violently with powdered metals and strong bases. The solution in water is a weak acid.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate area and deny access to all non-essential personnel. Eliminate all ignition sources. Ventilate the area. Wear recommended personal protective equipment including respiratory protection (See Section 8). Do

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not touch or walk through spilled material. Prevent dust formation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid breathing dust/mist/vapors/spray and contact with: eyes, skin and clothing. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do it without risk. Do not get water inside containers.

6.2 Environmental precautions

No additional information.

6.3 Methods and material for containment for cleaning up

Do NOT absorb in saw-dust or other combustible absorbents. Wear recommended personal protective equipment, including respirator (See Section 8). Vacuum, shovel or pump waste into a drum and label contents for disposal. Knock down dust with water spray. Avoid dust formation. Store in closed container. Clean up spill area and treat as special waste. Comply with local regulations for waste disposal methods. Never return spills in original containers for re-use.

Small dry spill:

Knock down dust with water spray. Sweep spilled material into clean, dry container and cover loosely; move containers from spill area. Then wash away the remainder with plenty of water. Wear a respirator with a P2 filter to protect against airborne dust.

Small liquid spill:

Absorb with inert, non-combustible media such as: diatomaceous earth or inert floor dry. Place in drums for later disposal. Do not use saw dust or other incompatible media. Disposal of all materials shall be in full and strict compliance with all federal, state and local regulations.

Large spill:

Dike far ahead of liquid spill for later disposal. Absorb with inert, non-combustible media such as: diatomaceous earth or inert floor dry. Place in drums for later disposal. Do not use saw dust or other incompatible media. Disposal of all materials shall be in full and strict compliance with all federal, state and local regulations. Following product recovery, flush area with water. (ERG, 2016).

7. Handling and storage

7.1 Precautions for safe Handling

Handle product only in closed system or provide appropriate exhaust ventilation at machinery. If ventilation is not adequate: wear respiratory protection (See Section 8). Prevent dispersion/stirring up of dust. Keep away from heat, hot surfaces, spark, open flames, and other ignition sources. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles/reducing agents/strong bases/powdered metals. Avoid breathing dust/fumes/gas/mist/vapors/spray. Wash thoroughly after handling. Contaminated clothing should not be allowed out of the workplace. Wear personal protective equipment as recommended (See Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

KEEP OUT OF REACH OF CHILDREN. Separate from combustibles, reducing substances, strong bases and powdered metals Store locked up. Store in a dry, cool well-ventilated area. Keep containers tightly closed. Avoid contamination of opened product. Avoid formation and dispersion of dust. Store away from incompatible materials (See Section 10). Keep away from heat/open flame/ignitions sources. Keep away from food, drink and animal feed. Store only in original containers.

8. Exposure controls / Personal protection equipment

8.1 Control parameters

| Ingredient | Occupational Exposure Limits |
|------------------------|---|
| Potassium Permanganate | ACGIH TLV: TWA - (0.2 mg/m ³) [8 hr.] (US) NIOSH REL: TWA – 1.0 mg/m ³ OSHA PEL: Ceiling – 5.0 mg/m ³ |

| | |
|--------------------------------|---|
| Permanganate (As Manganese) | ACGIH TLV: TWA – 0.03 mg/m ³ (respirable fraction) [8 hr.] (US) NIOSH REL: TWA - 1 mg/m ³ [10 hr.] (US) NIOSH REL: STEL – 3 mg/m ³ [15 min] (US) OSHA PEL: Ceiling – 5 mg/m ³ (US) |
| Proprietary Blend | No data available |

8.2 Engineering Controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Eyewash station and Safety shower should be easily accessible and in good working order.

8.3 Individual protection measure, such as personal protective equipment

General hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Do not take contaminated clothing outside of the workplace. Wash contaminated clothing before reuse.

Personal protection equipment:

Respiratory Protection:

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Where purifying respirators are appropriate: use a particulate filtering full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Respiratory Protection Recommendations – based on Exposure to Manganese:

Measurement Element: Manganese (Mn): 10 mg/m³

Any particulate respirator equipped with an N95, R95, P95 filtering facepieces) except quarter-mask respirator. The following filters may also be use: N99, R99, P99, N100, R100, or P100 or ANY SUPPLIED-AIR RESPIRATOR.

Measurement Element: Manganese (Mn): 25 mg/m³

Any supplied- air respirator operated in a continuous- flow mode.
Any powered, air- purifying respirator with high- efficiency particulate filter.

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Measurement Element: Manganese (Mn): 250 mg/m³

Any supplied-air respirator operated in continuous-flow mode.

Any powered, air-purifying respirator with a high-efficiency particulate filter.

Any self-contained breathing apparatus with full-face piece.

Any supplied- air respirator with a full-face piece.

Measurement Element: Manganese (Mn): 500 mg/m³

Any supplied- air respirator operated in a pressure- demand or other positive-pressure mode.

Escape

Any air-purifying, full-face piece respirator equipped with N100, R100, or P100 filter.

Any appropriate escape-type, self-contained breathing apparatus.

Skin Protection:

Hand Protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended glove material: Neoprene, Polyvinylchloride and Natural Rubber. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Body Protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When working with a corrosive substance, skin contact must be avoided. The following protective clothing should be worn, unless the safety assessment indicates a higher degree of protection: Chemical resistant clothing and rubber or plastic apron. Consult with your safety equipment supplier/manufacturer for recommendations when working with this substance. All protective clothing should be clean, available each day and put on before work.

Eye Protection:

Wear impact resistant eye protection with side shields or goggles and full-face shield. Contact lenses should not be worn when working with a corrosive substance. Safety eyewear complying with an approved standard such as: OHA 29CFR 1910.133, EN 166 or equivalent.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|-------------------------------|-------------------------------|
| Appearance: | Dark Purple; Solid |
| Color: | Dark Purple |
| Odor: | Odorless |
| Odor Threshold: | Not Available |
| pH: | Not Available |
| Melting point/Freezing point: | Decomposes at or above 150 °C |
| Initial boiling point: | Decomposes upon heating |
| Flash point: | Not Available |
| Evaporation rate: | Not Available |

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| | |
|----------------------------|---------------------|
| Flammability (solid, gas): | Not Flammable |
| Upper flammability limits: | Not Applicable |
| Lower flammability limits: | Not Applicable |
| Upper explosive limits: | Not Applicable |
| Lower explosive limits: | Not Applicable |
| Specific gravity: | Not Applicable |
| VOC's (%): | Not Available |
| Vapor pressure: | Not Applicable |
| Vapor density: | Not Applicable |
| Solubility(ies): | 6% in water @ 25 °C |
| Partition coefficient: | Not Available |
| Viscosity: | Not Applicable |
| Auto-ignition temperature: | Not Available |
| Decomposition temperature: | >150 °C |
| Explosive properties: | Not Explosive |
| Oxidizing properties: | Strong Oxidizer |

9.2 Other information

No additional information.

10. Stability and reactivity

10.1 Reactivity

Potassium Permanganate is a strong oxidizing agent. It will readily react with many combustible materials and reducing agents, often vigorously enough to start fires or cause explosions. May ignite combustible materials (wood, paper, oil, clothing, etc.). Contact with incompatible materials or heat (≥ 150 °C) may result in a violent exothermic reaction. May produce immediate flame upon contact with: ethylene glycol, hydrogen trisulfide, antimony and arsenic. May be explosive in contact with: sulfuric acid, acetic acid, acetic anhydride, benzene, carbon disulfide, diethyl ether, ethyl alcohol, petroleum, hydrogen peroxide, organic matter and any readily oxidizable substance.

Hazardous polymerization: Hazardous polymerization will not occur.

10.2 Chemical stability

Stable under recommended storage and handling conditions. Decomposition can occur on exposure to heat or moisture.

10.3 Possibility of hazardous reactions

See Section 10.1

10.4 Conditions to avoid

Extreme heat/open flame/ignition sources. Moisture. Incompatible materials.

10.5 Incompatibility

Strong reducing agents, Strong acids, Alcohols, Formaldehyde, Peroxides, Arsenites, Mercurous salts, Hypophosphites, Combustible organics, Sulfites, Bromides, Hydrochloric acid, Charcoal, Iodides, Metal powders, Ethylene glycol, Organic materials, Some metals, Ferrous salts

10.6 Hazardous decomposition products

Potassium Oxides, Manganese Oxides and Oxygen, which intensifies a fire.

11. Toxicological information

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11.1 Information on likely routes of exposure

Principle Routes of Exposure:

Skin. Eyes. Ingestion. Inhalation.

Target Organs:

Skin, Eyes, Respiratory System, Lungs

11.2 Symptoms related to the physical, chemical, and toxicological characteristics

Acute Effects/Symptoms:

Inhalation:

This product may cause respiratory irritation. Symptoms include: cough, labored breathing, sore throat, wheezing and irritation of the mucous membranes lining the respiratory tract. Over-exposure via inhalation may cause lung edema (A medical Emergency) characterized by severe shortness of breath. Symptoms may be delayed. This product is corrosive upon inhalation. Symptoms include pain, breathing difficulties, throat pain and headache.

Skin Contact:

This product is corrosive to the skin and may cause irreversible damage to tissue. Will cause chemical burns upon contact. Symptoms include: pain, blisters, ulceration, redness and inflammation.

Eye Contact:

This product may cause severe and irreversible eye damage. Symptoms include: Pain, tearing, corneal opacification, burning, and diminished or loss of vision. Airborne dust may cause mechanical abrasion of the eyes.

Ingestion:

This product is harmful if swallowed. This product is corrosive and will cause chemical burns of the mouth, throat and digestive system if swallowed. Symptoms include: burning sensation, abdominal pain, diarrhea, nausea, vomiting and shock or collapse.

Delayed Effects/Symptoms:

Repeated or prolonged contact may adversely affect the lungs leading to chronic bronchitis and pneumonia. Repeated and or prolonged exposure may cause damage to the liver and kidneys. Chronic inhalation or ingestion of Manganese can cause: Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dyspnea (breathing difficulty), rales, flu-like fever; low-back pain; vomiting; malaise (vague feeling of discomfort); lassitude (weakness, exhaustion); kidney damage.

Delayed and immediate effects from short or long-term exposure:

Acute Toxicity:

Harmful if swallowed.

Classification: Acute Toxicity (Oral) – Category 4

Skin Corrosion/Irritation:

Causes severe skin burns and eye damage.

Classification: Skin Corrosion/Irritation – Category 1B

Serious Eye Damage/Irritation:

Causes serious eye damage.

Classification: Serious Eye Damage/Irritation – Category 1

Respiratory Sensitization:

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Not expected to be a respiratory sensitizer based on information available on the product and the known components of the product.

Skin Sensitization: Not expected to be a skin sensitizer based on information available on the product and the known components of the product.

Germ Cell Mutagenicity:

Not expected to be a Germ Cell Mutagen based on information available on the product and the known components of the product.

Carcinogenicity:

Not expected to be a Carcinogen based on information available on the product and the known components of the product. This product contains no ingredients (at greater than 0.1%) that are suspected of being or known to be a carcinogen under ACGIH, NTP, IARC or OSHA.

Reproductive Toxicity:

Not expected to be a reproductive toxin based on information available on the product and the known components of the product.

Specific Target Organ Toxicity – Single Exposure:

May cause respiratory irritation following a single exposure.

Classification: Specific Target Organ Toxicity (Single Exposure) – Category 3 (Respiratory Irritation)

Specific Target-Organ Toxicity – Repeated Exposure:

Causes damage to organs (Lungs, Respiratory System) after prolonged or repeated exposure. Other organs possibly affected by repeated and or long- term exposure to this product are liver and kidneys.

Classification: Specific Target Organ Toxicity (Repeated Exposure) – Category 2

Aspiration Hazard:

Does not meet the criteria for classification.

Acute Toxicity Data for ingredients:

| Ingredient | Route | Reported Dose (Normalized Dose) |
|------------------------|-------------|--|
| Potassium Permanganate | Oral | LD50: 1090 mg/kg (Rat) ¹ |
| | Intravenous | LDLo: 600 mg/kg ² (Rabbit) ² |
| | Oral | LDLo: 143 mg/kg (Human) ³ |

¹ American Industrial Hygiene Association Journal. Vol. 30, Pg. 470, 1969

² Environmental Quality and Safety, Supplement, Vol. 1, g. 1, 1975

³ "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969
Vol. -, Pg. 493, 1969.

12. Ecological information

12.1 Ecotoxicity (aquatic and terrestrial, where available)

| Ingredient Name | Result | Species |
|---|-------------------------------------|--|
| Potassium Permanganate CAS#: 7772-64-7 | Acute LC50: 0.3 – 0.6 mg/L (96 hr.) | Fish – Oncorhynchus mykiss (rainbow trout) |
| | Acute EC50: 0.084 mg/L (48 hr.) | Daphnia Magna (Water Flea) |
| | Acute EC50: 10 mg/L (4 hr.) | Algae |

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| | | |
|--|---|---------------------------------------|
| | Acute LC50: 2.7 mg/L (96 hr.) – Static | Fish – Lepomis macrochirus (Bluegill) |
| | Acute LC50: 2.3 m g/L (96 hr.) – Flow-through | Fish – Lepomis macrochirus (Bluegill) |

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No additional information

13. Disposal considerations

Handling for Disposal:

Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal:

Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local, regional, provincial and National authority requirements.

Waste Code: D001 Ignitable Waste

It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues/ unused: Do not allow this material to drain into sewers/water supplies.

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Rinse container at least three times to an absence of pink color before disposing. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Empty Container Warning:

Contaminated packaging may contain traces of the product and therefore should be disposed of in the same way as product.

14. Transport Information

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| | |
|---|--|
| DOT: UN Number: Proper Shipping Name: Hazard Class(es): Packing Group: | UN 1490 POTASSIUM PERMANGANATE 5.1 (Oxidizers) II |
| TDG: UN Number: Proper Shipping Name: Hazard Class(es): Packing Group: | UN 1490 POTASSIUM PERMANGANATE 5.1 (Oxidizers) II |

| | |
|--|--|
| IMDG: UN Number: Proper Shipping Name: Hazard Class(es): Packing Group: | UN 1490 POTASSIUM PERMANGANATE 5.1 (Oxidizers) II |
| IATA: UN Number: Proper Shipping Name: Hazard Class(es): Packing Group: | UN 1490 POTASSIUM PERMANGANATE 5.1 II |

14.5. Environmental hazards

Marine Pollutant: No

14.5. Special precautions for user

No additional information.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No additional information available.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Regulatory Overview:

The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

EPCRA 311/312 Chemicals and RQs (Specific toxic chemical listings):

Reactive. Acute

EPCRA 302 Extremely Hazardous (>.1%):

(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals (Specific toxic chemical listings):

Potassium permanganate (CAS#: 7722-64-7)

CERCLA RQ Ingredients:

Potassium permanganate (CAS#: 7722-64-7) – 100 lbs.

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Proposition 65 - Carcinogens (>0.0%):

(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0.0%):

(No Product Ingredients Listed)

Proposition 65 -Female Repro Toxins (>0.0%):

(No Product Ingredients Listed)

Proposition 65 -Male Repro Toxins (>0.0%):

(No Product Ingredients Listed)

MASS. RTK Substances (>1%):

Potassium permanganate (CAS# 7722-64-7)

N.J. RTK Substances (>1%):

Potassium permanganate (CAS# 7722-64-7)

Penn RTK Substances (>1%):

Potassium permanganate (CAS# 7722-64-7)

Registration status:

All ingredients are listed on the DSL.

15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out.

16. Other Information

Revision Date: October 25, 2018

DISCLAIMER OF LIABILITY:

The information presented herein has been compiled from sources considered to be dependable and accurate to the best of our knowledge. The information relates to this specific material. It may not be valid for this material if used in combination with any other materials or in any process. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.