



# SAFETY DATA SHEET

Product: MARC 214 LOW PRESSURE BOILER TREATMENT

Form R04132

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER AND NAME: **MARC 214 LOW PRESSURE BOILER TREATMENT**

SDS DATE: 01/23/2024

SUPPLIER: Mid-American Research Chemical Corp.

ADDRESS: P. O. Box 927 • Columbus, NE 68602-0927

PHONE: 402-564-7104 FAX: 402-563-1290

EMERGENCY PHONE: InfoTrac 1-800-535-5053

E-MAIL: marc1@marc1.com WEBSITE: www.marc1.com

RECOMMENDED USE: Boiler Treatment.

PREPARED BY: MARC

## SECTION 2: HAZARDS IDENTIFICATION

**CLASSIFICATION:** CONTACT HAZARD - SKIN: Category 1B - Causes severe skin burns and eye damage. CONTACT HAZARD - EYE: Category 1 - Causes serious eye damage. ACUTE TOXICITY - ORAL: Category 4 - Harmful if swallowed. TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Category 1 - Causes damage to: Gastrointestinal System, Respiratory System. CARCINOGENICITY: Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA. HAZARDOUS TO AQUATIC ENVIRONMENT – ACUTE HAZARD, Category 3.



**SIGNAL WORD AND HAZARD AND PRECAUTIONARY STATEMENTS-** DANGER: Contains potassium hydroxide, sodium sulfite and amine. Causes severe skin burns and serious eye damage. Harmful if swallowed. Causes damage to gastrointestinal system if swallowed and to respiratory system if mist is inhaled. Store only in original container. Do not get in eyes, on skin or on clothing. Wear eye protection and protective gloves. Do not breathe the mist, vapors or spray. Do not ingest. Do not eat, drink or smoke when using this product. Use only in a well-ventilated area. Wash thoroughly after handling. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a Poison Center or physician. If on skin or hair: Remove immediately all contaminated clothing. Rinse skin and hair with water. Wash contaminated clothing before reuse. If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a Poison Center or physician. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a Poison Center or physician. If exposed: Call a Poison Center or physician. Absorb spillage to prevent material damage. Store locked up in original container. Dispose of in accordance with federal, state and local regulations.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Specific percentages may be claimed as a trade secret.

| COMPONENT           | CAS NO.   | WT. %     |
|---------------------|-----------|-----------|
| Potassium Hydroxide | 1310-58-3 | 2 - 5     |
| Sodium Hydroxide    | 1310-73-2 | 0.3 - 0.7 |
| Diethylethanolamine | 100-37-8  | 1 - 3     |

## SECTION 4: FIRST AID MEASURES

**EYES:** Immediately flush contaminated eyes with a directed stream of water for as long as possible. Remove contact lenses, if present and easy to do. Continue rinsing. GET MEDICAL ATTENTION IMMEDIATELY

**SKIN:** Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with large amounts of water. GET MEDICAL ATTENTION IMMEDIATELY. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

**INGESTION:** If swallowed **DO NOT INDUCE VOMITING.** For definite or probable ingestion, do not administer oral fluids. If vomiting occurs spontaneously, keep airway clear. Monitor airway. Volume resuscitation (IV fluids) and circulatory support (CPR) may be required. Never give anything by mouth to an unconscious or convulsive person. GET MEDICAL ATTENTION IMMEDIATELY.

**INHALATION:** If inhalation of mists, vapors, or spray occurs and adverse effects result, remove to uncontaminated area. Evaluate ABC's (is Airway constricted, is Breathing occurring, and is blood Circulating) and treat symptomatically. GET MEDICAL ATTENTION IMMEDIATELY.



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**MOST IMPORTANT SYMPTOMS/EFFECTS (Acute and Delayed)** Corrosive. This material may be corrosive to any tissue it comes in contact with. It can cause serious burns and extensive tissue destruction resulting in: liquefaction, necrosis, and/or perforation.

**ACUTE SYMPTOMS/EFFECTS:** Listed below.

**INHALATION (Breathing):** Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchio-constriction, and possible pulmonary edema. Severe and permanent scarring may occur. Pulmonary edema may develop several hours after a severe acute exposure. Aspiration of this material may cause the same conditions.

**SKIN:** Skin corrosion. Exposure to skin may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep and painful wounds).

**EYE:** Serious Eye Damage. Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye, permanent visual defects, and blindness and/or loss of the eye.

**INGESTION (Swallowing):** Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

**DELAYED SYMPTOMS/EFFECTS:** -Skin: repeated and prolonged skin contact may cause a chronic dermatitis.

**MEDICAL CONDITIONS AGGRAVATED BY EPOSURE:** Corrosive. May aggravate preexisting eye, skin, and respiratory conditions (including asthma and other breathing disorders).

**PROTECTION OF FIRST-AIDERS:** Protect yourself by avoiding contact with this material. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations. Avoid contact with skin and eyes. Do not ingest. Do not breathe vapors or spray mist. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** Medical observation and assessment is recommended for all ingestions, all eye exposures, and symptomatic inhalation and dermal exposures. For symptomatic ingestion, do not administer oral fluids and consider investigation by endoscopy, X-ray, or CT scan. Esophageal perforation, airway compromise, hypotension, and shock are possible. For prolonged exposures and significant exposures, consider delayed injury to exposed tissues. There is no antidote. Treatment is supportive care. Follow normal parameters for airway, breathing, and circulation. Surgical intervention may be required.

## SECTION 5: FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Do not apply water directly on this product. Heat is generated when mixed with water. Use extinguishing agents appropriate for surrounding fire.

### SPECIAL FIRE FIGHTING EQUIPMENT/

**PROCEDURES:** Move container from fire area if it can be done without risk. Cool containers with water. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Avoid contact with skin.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known.

**HAZARDOUS COMBUSTION PRODUCTS:** Mixing with incompatible materials may cause splattering and release of large amounts of heat. Will react with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

**Sensitivity to Mechanical Impact:** Not sensitive.

**Sensitivity to Static Discharge:** Not sensitive.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**EMERGENCY PROCEDURES:** In case of spill or leak, stop the leak as soon as possible, if safe to do so. Completely contain spilled materials, if possible, with dikes, sandbags, etc. After containment, collect the spilled material and transfer to a chemical waste area. Liquid material may be removed with a vacuum truck. Neutralize residue with dilute acid and follow with a liberal covering of sodium bicarbonate or other acceptable drying agent. See Section 13, Disposal Considerations, for additional information.

**ENVIRONMENTAL PRECAUTIONS:** Keep out of water supplies and sewers.

**PROTECTIVE EQUIPMENT:** Avoid contact with eyes, on skin or on clothing. wear appropriate personal protective equipment recommended in Section 8, Exposure Controls/Personal Protection, of the SDS.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANUP:** Same as EMERGENCY PROCEDURES.



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## SECTION 7: HANDLING AND STORAGE

### GENERAL HANDLING/ STORAGE:

Read label before use. Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Wear personal protective equipment as described in **EXPOSURE CONTROL/PERSONAL PROTECTION (SECTION 8)**

**OTHER PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN!! CAREFULLY READ ENTIRE LABEL BEFORE USE!**

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| COMPONENT           | CAS NUMBER | ACGIH TWA | ACGIH STEL | ACGOJ CEILING | OSHA TWA (VACATED) |
|---------------------|------------|-----------|------------|---------------|--------------------|
| Potassium hydroxide | 1310-58-3  | ----      | ----       | 2mg/m3        | ----               |

**ENGINEERING CONTROLS/VENTILATION:** Provide local exhaust ventilation where mist may be generated.

**RESPIRATORY PROTECTION:** A NIOSH approved respirator may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure.

**EYES AND FACE PROTECTION:** Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate.

**SKIN PROTECTION/PROTECTIVE GLOVES:** Wear appropriate chemical resistant gloves. Wear appropriate clothing to minimize skin contact.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Wear protective clothing to minimize skin contact.

**WORK HYGIENIC PRACTICES:** Handle in accordance with good industrial hygiene and safety practices. Wash hands and affected skin immediately after handling, before breaks, and at the end of the workday. When using do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

|   |                    |
|---|--------------------|
| <b>APPEARANCE-<br/>PHYSICAL STATE:</b>              | Clear.             |
| <b>COLOR:</b>                                       | Liquid.            |
| <b>ODOR:</b>  | Light yellow.      |
| <b>ODOR THRESHOLD:</b>                              | Mild.              |
| <b>DECOMPOSITION TEMPERATURE:</b>                   | Not available.     |
| <b>pH:</b>  | No data available. |
| <b>MELTING POINT:</b>                               | 12 - 14            |
| <b>FREEZING POINT/RANGE:</b>                        | N/A                |
| <b>BOILING POINT/RANGE:</b>                         | 25°F               |
| <b>VOLATILITY:</b>                                  | 216°F              |
| <b>EVAPORATION RATE:</b>                            | No data available. |
| <b>FLASH POINT/METHOD USED:</b>                     | No data available. |
| <b>FLAMMABILITY (solid, gas):</b>                   | Not Flammable      |
| <b>FLAMMABILITY LIMITS:</b>                         | Not Flammable.     |
| <b>Lower FLAMMABILITY LEVEL (air):</b>              | Not Flammable.     |
| <b>Upper FLAMMABILITY LEVEL (air):</b>              | Not Applicable.    |
| <b>VAPOR PRESSURE (mmHg):</b>                       | Not Applicable.    |
| <b>VAPOR DENSITY (AIR = 1):</b>                     | No data available. |
| <b>RELATIVE DENSITY/SPECIFIC GRAVITY (H2O = 1):</b> | No data available. |
| <b>DENSITY:</b>                                     | 1.04               |
| <b>SOLUBILITY IN WATER:</b>                         | 9 lbs./gal         |
| <b>PARTITION COEFFICIENT (N-OCTANOL/WATER):</b>     | 100%               |
| <b>AUTO-IGNITION TEMPERATURE:</b>                   | No applicable.     |
| <b>VISCOSITY:</b>                                   | Not determined.    |
|   | No data available. |



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## SECTION 10: STABILITY AND REACTIVITY

**REACTIVITY:** Reacts with acids, giving off heat.

**STABILITY:** Stable at normal temperatures and pressures.

**CONDITIONS TO AVOID:** Mixing with acid, or incompatible materials may cause splattering and release of large amounts of heat. Will react with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

**INCOMPATIBILITY (MATERIAL TO AVOID):** Flammable liquids, acids, halogenated compounds.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** None known.

**HAZARDOUS POLYMERIZATION:** Will not occur. **CONDITIONS TO AVOID (POLYMERIZATION):** NA

## SECTION 11: TOXICOLOGICAL INFORMATION

**TOXIC DATA:** **Potassium Hydroxide:** LD50 Oral-Rat = 365 mg/kg

**EYES CONTACT:** Corrosive. Causes serious eye damage which can result in: severe irritation, pain and burns, and permanent damage including blindness.

**SKIN CONTACT:** Corrosive. Causes severe skin burns. Prolonged or repeat skin exposures can result in dermatitis.

**INGESTION:** Corrosive. May cause severe mucus membrane burns and gastrointestinal burns. If swallowed, may pose a lung aspiration hazard during vomiting. Lung aspiration may result in chemical pneumonitis, pulmonary edema, and damage to lung tissue or death.

**INHALATION:** Corrosive. May cause severe irritation of the respiratory tract with coughing, choking, pain, and possibly burns of the mucus membranes. This material can be extremely destructive to the tissue of the mucus membranes and respiratory system.

## SECTION 12: ECOLOGICAL INFORMATION

**ECOTOXICITY DATA:** Potassium Hydroxide

### Aquatic Toxicity:

This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material has exhibited moderate toxicity to aquatic organisms.

### Freshwater Fish Toxicity:

LC50 (Mosquito Fish): 80 mg/L/96hr (static bioassay in fresh water at 18-19 C)

LC50 (Fathead Minnow) 179 mg/L/96hr (static at 22.3 – 24.7 C)

### Invertebrate Toxicity:

EC50 (Daphnia magna): 60 mg/L/48hr (static bioassay at 20.3-20.7 C)

### Algae Toxicity:

EC50 (Selenastrum capricomutum): 61 mg/L/96hr (static bioassay at 23-23.9 C)

## FATE AND TRANSPORT:

**BIODEGRADATION:** This material will disassociate into ionic form in the aquatic environment. Natural carbon dioxide will slowly neutralize this material.

**PERSISTENCE:** N/A

**BIOCONCENTRATION:** This material will not bioconcentrate.

**BIO-ACCUMULATIVE POTENTIAL:** N/A

**MOBILITY:** N/A

**ADDITIONAL ECOLOGICAL INFORMATION:** This material has exhibited slight toxicity to terrestrial organisms.



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## SECTION 13: DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD:** Dispose of in accordance with all applicable regulations.

## SECTION 14: TRANSPORT INFORMATION

### U.S. DEPARTMENT OF TRANSPORTATION (for ground/non-bulk containers)

**CONTAINER SIZES(S):** PAILS & DRUMS  
**PROPER SHIPPING NAME:** POTASSIUM HYDROXIDE, SOLUTION  
**HAZARD CLASS:** 8  
**ID NUMBER:** UN1814  
**PACKING GROUP:** II  
**LABEL STATEMENT:** CORROSIVE

## SECTION 15: REGULATORY INFORMATION

### U.S. FEDERAL REGULATIONS

#### OSHA REGULATORY STATUS:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

| COMPONENT           | CERCLA REPORTABLE QUANTITIES: |
|---------------------|-------------------------------|
| Potassium Hydroxide | 1000 lb (final RQ)            |

#### EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

Acute Health Hazard

#### EPCRA SECTION 313 (40CFR 372.65):

Not regulated.

### NATIONAL INVENTORY STATUS

#### U.S. INVENTORY STATUS: Toxic Substance control Act (TSCA):

All components are listed or exempt.

## SECTION 16: OTHER INFORMATION

**HMIS/NFPA Ratings:** Health = 2; Flammability = 0; Reactivity = 0

**DISCLAIMER:** While the information contained herein is believed to be correct, no warranties are made with respect thereto, and all liability from reliance thereon is disclaimed.