

SAFETY DATA SHEET – MX 201

SECTION 1: PRODUCT IDENTIFICATION

1.1 Product Identifier

Trade Name: CHEMROCK MX 201

SECTION 2: HAZARD IDENTIFICATION

1.3 Uses of the chemical, mixtures or product
Descaling agent

2.1 Classification of the substance or mixture

Classification (GHS-US)

Liquefied gas H280
Acute Tox. 3 (Inhalation:gas) H331
Skin Corr. 1A H314
Eye Dam. 1 H318

2.2 Label elements

Hazard pictograms (GHS-US):



Signal word (GHS-US):

DANGER

Hazard statements (GHS-US) :

H314 : CAUSES SEVERE SKIN BURNS AND EYE DAMAGE

H335 : May cause respiratory irritation

H302 : Harmful if swallowed H400

; Very toxic to aquatic life. H290 :

May be corrosive to metals

Precautionary statements (GHS-US) :

Prevention

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

P260 : Avoid breathing dust/fume/mist/vapors/spray/

P264 : Wash hand thoroughly after handling.

P280+P284 : Wear protective gloves, protective clothing, eye protection, respiratory protection, and/or face protection.

Response:

P304 + P340: IF INHALED, Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P301 +P340+P331: IF SWALLOWED: Rinse mouth. Do not induce vomiting.

P305+P351P338: 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.

Storage:

P405: Store in a well-ventilated place.

P233: Keep container tightly closed.

P405: Store locked up.

Disposal:

P501 - Dispose of contents/container Dispose in a safe manner in accordance with local/national regulations

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Chemical characterization: Mixture

INGREDIENT	CAS-NUMBER	Percentage
Hydrochloric Acid, 32 % w/w	7647-01-0	20-30
Methyl Orange	547-58-0	1-3

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Water	7732-18-5	63-77
Acid inhibitor	-	2-4

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available

4.2 Most important symptoms/effects, both acute and delayed: May cause serious permanent damage. Forms blisters, ulceration and chemical burns to the skin, corneal burns with dangers of vision impairment / blindness, burns in the mouth, throat and esophagus, and can cause itching, cough and chemical burns to the respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed: Treat corrosive burns on the skin as thermal burns. Do NOT use sodium bicarbonate to neutralize the acid. Do NOT use oils or ointments in eye. Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% Oxygen initially.

4.4 First Aid Facilities: Eye wash station, safety shower and normal washroom facilities.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Regular dry chemical, carbon dioxide, fine water spray, regular foam

Unsuitable extinguishing media: High volume water jet.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition releases toxic and corrosive gas (Hydrogen chloride, Chlorine). Reacts with metal producing flammable/explosive hydrogen gas. Heating can cause expansion or decomposition leading to violent rupture of containers.

5.3 Special protective actions for firefighters

Fight fire from safe location. Do not breathe fumes. Wear self-contained breathing apparatus and acid-resistant clothing. Containers close to fire should be removed immediately or cooled with water. Do not allow contaminated extinguishing water to enter the soil, groundwater or surface waters.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and Emergency procedures

Evacuate all unprotected personnel and keep people away from and upwind of spill/leak. Put on protective equipment (see section 8). Avoid direct contact with skin, eyes and clothing. Do not breathe vapor or fumes. Ensure adequate ventilation.

6.2 Environmental precautions

Avoid entry of product into Drains, sewers, surface/ground water system or soil.

6.3 Methods and material for containment and cleaning up

Shut off the source of the leak if conditions are safe. Neutralize with lime or soda ash or absorb with dry earth, sand or other non-combustible material, and dispose waste appropriately. Wash area down with excess water to remove residual material.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

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Use protective equipment (see Section 8). Provide adequate ventilation. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Addition to water releases heat which can result in violent boiling and splattering. Always add slowly and in small amounts. Never add water to acids; always add acids to water.

Conditions for safe storage, including any incompatibilities

Store tightly closed in a dry, cool and well-ventilated place. Provide a catch-tank and an impermeable corrosion resistant floor with drainage to a neutralization tank. Protect containers from heat, physical damage, ignition sources and incompatible materials. Contents may develop pressure upon prolonged storage.

Suitable packaging material: Vulcanized or rubber coated steel, plastic drum, reinforced polyester, polyvinyl chloride, polyethylene, polypropylene, polytetrafluoro ethylene PTFE (Teflon), glass, porcelain.

Non suitable packaging material: Stainless steel, light metals and alloys.

Keep away from Oxidizing agents, alkalis, finely divided metals.

SECTION 8: EXPOSURE CONTROLS AND PROTECTION

Control parameters

Exposure limits US OSHA PEL Ceiling: 5ppm
 NIOSH IDLH: 50ppm
 EU ELV (2009) TWA: 5ppm (8 mg/m³)

Appropriate engineering controls: Ensure adequate ventilation.

Individual protection measures/personal protective equipment: Final choice of appropriate protection will vary according to methods of handling or engineering controls and according to risk assessments undertaken.

Respiratory protection: respiratory equipment with replaceable vapor/mist filter.

Hand protection: nitrile, neoprene or PVC gloves

Eye / face protection: safety glasses with side shields

Skin protection: suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist.

Chemical resistant apron is recommended where large quantities are handled.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Red colored liquid
Odor	Strong, pungent and irritating
pH	< 1, strong acid
Boiling Point Range	81.5 - 120°C
Solubility in Water	Completely soluble
Specific Gravity	1.1413 @ 20°C
Melting Point	Not applicable
Flash point	Not applicable
Flammability	Not applicable
Flammability/explosive limits	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Exothermic reaction with incompatible materials.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, water

Incompatibility with various substances: Highly reactive with metals. Reactive with oxidizing agents, organic materials, alkalis, water.

Corrosivity: Extremely corrosive in presence of aluminum, of copper, of stainless steel, of stainless steel). Non-corrosive in presence of glass.

Special Remarks on Reactivity: Reacts with water especially when water is added to the product. Absorption of

gaseous hydrogen chloride on mercuric sulfate becomes violent @ 125 deg. C. Sodium reacts very violently with gaseous hydrogen chloride. Calcium phosphide and hydrochloric acid undergo very energetic reaction. It reacts with oxidizers releasing chlorine gas. Incompatible with, alkali metals, carbides, borides, metal oxides, vinyl acetate, acetylides, sulphides, phosphides, cyanides, carbonates. Reacts with most metals to produce flammable hydrogen gas. Reacts violently (moderate reaction with heat of evolution) with water especially when water is added to the product. Isolate hydrogen chloride from heat, direct sunlight, alkalies (reacts vigorously), organic materials, and oxidizers (especially nitric acid and chlorates), amines, metals, copper and alloys (e.g. brass), hydroxides, zinc (galvanized materials), lithium silicide (incandescence), sulfuric acid (increase in temperature and pressure) Hydrogen chloride gas is emitted when this product is in contact with sulfuric acid. Adsorption of Hydrochloric Acid onto silicon dioxide results

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in exothermic reaction. Hydrogen chloride causes aldehydes and epoxides to violently polymerize. Hydrogen chloride or Hydrochloric Acid in contact with the following can cause explosion or ignition on contact.

Special Remarks on Corrosivity: Highly corrosive. Incompatible with copper and copper alloys. It attacks nearly all metals (mercury, gold, platinum, tantalum, silver, and certain alloys are exceptions). It is one of the most corrosive of the non oxidizing acids in contact with copper alloys. No corrosivity data on zinc, steel. Severe Corrosive effect on brass and bronze

Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals: Acute oral toxicity (LD50): 900 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 1108 ppm, 1 hour [Mouse]. Acute toxicity of the vapor (LC50): 3124 ppm, 1 hours [Rat].

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrochloric acid]. May cause damage to the following organs: kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, Circulatory System, teeth.

Other Toxic Effects on Humans: Very hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion. Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Lowest Published Lethal Doses (LDL/LCL) LDL [Man] -Route: Oral; 2857 ug/kg LCL [Human] - Route: Inhalation; Dose: 1300 ppm/30M LCL [Rabbit] - Route: Inhalation; Dose: 4413 ppm/30M

Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects (fetotoxicity). May affect genetic material.

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Corrosive. Causes severe skin irritation and burns.

Eyes: Corrosive. Causes severe eye irritation/conjunctivitis, burns, corneal necrosis.

Inhalation: May be fatal if inhaled. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation of hydrochloric acid fumes produces nose, throat, and laryngeal burning, and irritation, pain and inflammation, coughing, sneezing, choking sensation, hoarseness, laryngeal spasms, upper respiratory tract edema, chest pains, as well as headache, and palpitations. Inhalation of high concentrations can result in corrosive burns, necrosis of bronchial epithelium, constriction of the larynx and bronchi, nasospetal perforation, glottal closure, occur, particularly if exposure is prolonged. May affect the liver.

Ingestion: May be fatal if swallowed. Causes irritation and burning, ulceration, or perforation of the gastrointestinal tract and resultant peritonitis, gastric hemorrhage and infection. Can also cause nausea, vomiting (with "coffee ground" emesis), diarrhea, thirst, difficulty swallowing, salivation, chills, fever, uneasiness, shock, strictures and stenosis (esophageal, gastric, pyloric). May affect behavior (excitement), the cardiovascular system (weak rapid pulse, tachycardia), respiration (shallow respiration), and urinary system (kidneys- renal failure, nephritis).

Acute exposure via inhalation or ingestion can also cause erosion of tooth enamel. Chronic Potential Health

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

Fish	Harmful to fish.
Aquatic invertebrates	Very toxic to daphnia
Aquatic plants	Very toxic to algae

Persistence and degradability:

Biodegradation (In water): High water solubility. Hydrochloric acid dissociates in and lowers the pH of water . It will be neutralized by naturally alkalinity of surface water.

Photodegradation (In air) : Indirect photo-oxidation in the atmosphere with a half-life of 11 days.

Bioaccumulative potential : An accumulation in aquatic organisms is not to be expected. Mobility in the soil. Mobile in soils. Upon transport through the soil, hydrochloric acid will dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize to some degree.

Other adverse effects. Toxic to aquatic life. Acidic substance leading to a lower pH. However, pH will increase rather quickly because of dilution until an ecological neutral product is obtained. Fatal to aquatic life due to pH shift. Toxic to aquatic forms – 280 ppm in fresh water and 100 ppm in salt water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14. TRANSPORT INFORMATION

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Packaging group II
Label
Environmental Hazards Marine
Pollutant : No
Environmentally Hazardous :

SECTION 15: REGULATORY INFORMATION

OSHA Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):

CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):

R34- Causes burns. R37- Irritating to respiratory system. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 1

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

SECTION 16: OTHER REFERENCES

- NLM, "TOXNET: Toxicology Data Network", <http://toxnet.nlm.nih.gov/>
- NIOSH, International Chemical Safety Card: Hydrogen Chloride (ICSC 0163), <http://www.cdc.gov/niosh/ipcsneng/neng0163.html>
- OSHA, *Occupational Health Guideline for Hydrogen Chloride*, <http://www.cdc.gov/niosh/pdfs/0332.pdf>