

# Montana X-Treme Copper Cream

Western Powders, Inc.

Issue Date: 12/01/15

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

## Section 1 - Identification of the Mixture and of the Company

**Product Name:** Montana X-treme Copper Cream

**Trade Names and Synonyms:** Non-abrasive, copper remover, bore cleaner

### **Relevant Identified Uses**

Consumer product, proprietary, water-based liquid mixture containing solvents, specialized cleaning agents and ammonium hydroxide; designed for removal of copper deposits from gun bores. Packaged in 2, 6 and 20 ounce epoxy-lined aluminum bottles, these specialized gun cleaning products are intended solely for use by adult persons experienced in the cleaning and maintenance of firearms.

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**Emergencies – Chemtrec – 1-800-424-9300**

## Section 2 - HAZARD IDENTIFICATION

### **Classification of the Mixture:**



**GHS Classification:** Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, STOT - SE (Resp. Irr.) Category 3, STOT - RE Category 2



**Signal Word:** **Warning**

### **Hazard Statements:**

H315 Causes skin irritation  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation  
H373 May cause damage to organs through prolonged or repeated exposure

### **Precautionary Statements**

**Prevention**  
P260 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P271 Use only outdoors or in a well-ventilated area  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Response**  
P362 Take off contaminated clothing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.

**P337+P313**                      **If eye irritation persists: Get medical advice/attention.**  
**P302+P352**                      **IF ON SKIN: Wash with plenty of water and soap**  
**P304+P340**                      **IF INHALED: Remove person to fresh air and keep comfortable for breathing.**  
**P332+P313**                      **If skin irritation occurs: Get medical advice/attention.**

**Storage**            **P405**                      **Store locked up.**  
                         **P403+P233**            **Store in a well-ventilated place. Keep container tightly closed.**

**Disposal**            **P501 - Dispose of contents/container to authorized chemical landfill.**

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

CAS Number	%[Weight]	Name
14808-60-7	10-30	silica crystalline - quartz
1113-38-8	<5	ammonium oxalate
67-63-0	<5	isopropanol
1336-21-6		ammonium hydroxide

**Section 4 - FIRST AID MEASURES**

**Eye Contact**

**If this product comes in contact with the eyes:**

- Wash out immediately with fresh running water
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lid.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**Skin Contact**

**If skin or hair contact occurs:**

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

**Inhalation**

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag mask device or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital or doctor.

**Ingestion**

- **If swallowed do not induce vomiting.**
- If vomiting occurs, lean patient forward or place on left side (head-down position if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquids to person showing signs of being sleepy or with reduced awareness.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

**MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED**  
**See Section 11**

## **INDICATIONS OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:**

### **For irritant gas exposures:**

- The presence of the agent when it is inhaled is evanescent (of short duration) and therefore, cannot be washed away or otherwise removed
- Arterial blood gases are of primary importance to aid in determination of the extent of damage. Never discharge a patient significantly exposed to an irritant gas without obtaining an arterial blood sample.
- Supportive measures include suctioning (intubation may be required), volume cycle ventilator support (positive and expiratory pressure (PEEP), steroids and antibiotics, after a culture is taken
- If the eyes are involved, an ophthalmologic consultation is recommended  
*Occupational Medicine: Third Edition; Zenz, Dickerson, Horvath 1994 Pub: Mosby*

### **For acute or short term repeated exposures to ammonia and its solutions:**

- Mild to moderate inhalation exposures produce headache, cough, bronchospasm, nausea, vomiting, pharyngeal and retrosternal pain and conjunctivitis. Severe inhalation produces laryngospasm, signs of upper airway obstruction (stridor, hoarseness, difficulty in speaking) and, in excessively, high doses, pulmonary edema.
- Warm humidified air may soothe bronchial irritation.
- Test all patients with conjunctival irritation for corneal abrasion (fluorescein stain, slit lamp exam)
- Dyspneic patients should receive a chest X-ray and arterial blood gases to detect pulmonary edema.

## **Section 5 - FIRE FIGHTING MEASURES**

### **EXTINGUISHING MEDIA:**

- Foam.
- Dry chemical powder.
- BCF (Where regulations permit).
- Carbon Dioxide.
- Water Spray or Fog, large fires only.

### **SPECIAL HAZARDS ARISING FROM THE SUBSTRATE OR MIXTURE:**

#### **Fire Incompatibility**

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result

### **ADVICE FOR FIREFIGHTERS**

#### **Firefighting**

- When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles.
- When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.

### **FIRE EXPLOSION HAZARD**

- Combustible
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

## **Section 6 - ACCIDENTAL RELEASE MEASURES**

### **PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

#### **Minor Spills**

- Remove all ignition sources
- Clean up all spills immediately
- Avoid breathing vapors and contact with skin and eyes
- Control personal contact with the substance by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up

### Major Spills - Moderate Hazard

- Clear area of personnel and move upwind.
- Alert fire brigade and tell them the location and nature of hazard.
- Wear breathing apparatus plus protective gloves
- Prevent, by any means available, spillage from entering drains or watercourse.
- No smoking, naked lights or ignition sources.

**Personal Protective Equipment advice is contained in Section 8 of the SDS.**

## Section 7 - HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING

#### Safe Handling

- **DO NOT allow clothing wet with material to stay in contact with skin**
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT enter confined spaces until atmosphere has been checked.**
- Avoid smoking, naked lights or ignition sources.

#### Other Information

- Store in original containers
- Keep containers securely sealed
- No smoking, naked lights or ignition sources.
- Store in cool, dry, well-ventilated area
- Store away from incompatible materials and foodstuff containers
- Protect containers against physical damage and check regularly for leaks.
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### CONDITIONS FOR SAFE STORAGE

#### Suitable Container

- Metal can or drum.
- Packaging as recommended by manufacturer
- Check all containers are clearly labelled and free from leaks.

#### Storage Incompatibility

- Avoid strong acids or bases
- Avoid reaction with oxidizing agents
- Avoid chloride bleach

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### CONTROL PARAMETERS

#### Occupation Exposure Limits (OEL)

#### Ingredient Data

Source	Ingredient	Material Name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	silica crystalline - quartz	Silica, crystalline quartz, respirable dust	Not Available	Not Available	Not Available	See Table Z-3
US ACGIH Threshold Limit Values (TLV)	silica crystalline - quartz	Silica, crystalline - $\alpha$ -quartz and cristobalite	0.025 mg/m <sup>3</sup>	Not Available	Not Available	TLV® Basis: Pulm fibrosis; lung cancer
US NIOSH Recommended Exposure Limits (RELs)	silica crystalline - quartz	Cristobalite, Quartz, Tridymite, Tripoli	0.05 mg/m <sup>3</sup>	Not Available	Not Available	Ca See Appendix A


US OSHA Permissible Exposure Levels (PELs) - Table Z1	isopropanol	Isopropyl alcohol	980 mg/m3 / 400 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	isopropanol	2-Propanol	200 ppm	400 ppm	Not Available	TLV® Basis: Eye & URT irr; CNS impair; BEI
US NIOSH Recommended Exposure Limits (RELs)	isopropanol	Dimethyl carbinol, IPA, Isopropanol, 2-Propanol, sec-Propyl alcohol, Rubbing alcohol	980 mg/m3 / 400 ppm	1225 mg/m3 / 500 ppm	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) - Table Z1	ammonium hydroxide	Ammonia	35 mg/m3 / 50 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	ammonium hydroxide	Ammonia	25 ppm	35 ppm	Not Available	TLV® Basis: Eye dam; URT irr
US NIOSH Recommended Exposure Limits (RELs)	ammonium hydroxide	Anhydrous ammonia, Aqua ammonia, Aqueous ammonia [Note: Often used in an aqueous solution.]	18 mg/m3 / 25 ppm	27 mg/m3 / 35 ppm	Not Available	Not Available

### Emergency Limits

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
silica crystalline - quartz	Silica, crystalline-quartz; (Silicon dioxide)	0.025 mg/m3	0.025 mg/m3	0.025 mg/m3
ammonium oxalate	Ammonium oxalate; (Ethanedioic acid, diammonium salt)	33 mg/m3	370 mg/m3	2200 mg/m3
ammonium oxalate	Ammonium oxalate; (Diammonium oxalate monohydrate)	1.1 mg/m3	12 mg/m3	71 mg/m3
isopropanol	Isopropyl alcohol	400 ppm	400 ppm	12000 ppm
ammonium hydroxide	Ammonium hydroxide	61 ppm	330 ppm	2300 ppm
ammonium hydroxide	Ammonia	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
silica crystalline - quartz	N.E. mg/m3 / N.E. ppm	50 mg/m3
ammonium oxalate	Not Available	Not Available
isopropanol	12,000 ppm	2,000 [LEL] ppm
ammonium hydroxide	500 ppm	300 ppm

### EXPOSURE CONTROLS

<b>Appropriate engineering controls</b>	<p><b>CARE:</b> Explosive vapor air mixtures may be present on opening vessels which have contained liquid ammonia. Fatalities have occurred.</p> <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p><b>The basic types of engineering controls are:</b></p> <ul style="list-style-type: none"> <li>• Process controls which involve changing the way a job activity or process is done to reduce the risk.</li> <li>• Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly.</li> </ul>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>• Safety glasses with side shields.</li> <li>• Chemical goggles.</li> <li>• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>• Wear chemical protective gloves, e.g. PVC.</li> <li>• Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p><b>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</b></p> <ul style="list-style-type: none"> <li>• Frequency and duration of contact,</li> <li>• Chemical resistance of glove material,</li> <li>• Glove thickness and dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p>
<b>Body protection</b>	See Other protection below
<b>Other Protection</b>	<ul style="list-style-type: none"> <li>• Overalls.</li> <li>• P.V.C. apron.</li> <li>• Barrier cream.</li> <li>• Skin cleansing cream.</li> <li>• Eye wash unit.</li> </ul>
<b>Thermal hazards</b>	Not Available

Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-generated* selection: Montana X-Treme Copper Cream

Material	CPI
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NITRILE	C
NITRILE+PVC	C
PE/EVAL/PE	C
PVC	C

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	Air-line*	AK-2	AK-PAPR-2 ^
up to 20 x ES	-	AK-3	-
20+ x ES	-	Air-line**	-

\* - Continuous-flow; \*\* - Continuous-flow or positive pressure demand

^ - Full-face

A (All classes) = Organic vapors, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen Cyanide (HCN), B3 = Acid gas or hydrogen cyanide (HCN), E = Sulfur dioxide (SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia (NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds (below 65 deg. C)

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Thick pale green, opaque, creamy liquid with ammonia odor; partially soluble in water.

Physical state	Liquid	Relative density (Water = 1)	1.14 @ 18 deg C
Odor	Not Available	Partition coefficient n-octanol / water	Not Available
odor threshold	Not Available	Auto-ignition temperature °C	Not Available
pH (as supplied)	9.5-10	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	>88	Molecular weight (g/mol)	Not Available
Flash point (°C)	>93 (TCC)	Taste	Not Available
Evaporation rate	moderate	Explosive properties	Not Available
Flammability	Not Applicable	Oxidizing properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	70
Vapor pressure (kPa)	101 @ 26-29 deg C (ammonia content)	Gas group	Not Available
Solubility in water (g/L)	Partly miscible	pH as a solution (1%)	Not Available
Vapor density	Not Available	VOC g/L	Not Available

## Section 10 - STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"><li>• Unstable in the presence of incompatible materials.</li><li>• Product is considered stable.</li><li>• Hazardous polymerization will not occur.</li></ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7

Incompatible materials	See section 7
Hazardous decomposition products	See section 5

## Section 11 - TOXICOLOGICAL INFORMATION

<b>Inhaled</b>	<ul style="list-style-type: none"> <li>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</li> <li>Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</li> <li>The highly irritant properties of ammonia vapor result as the gas dissolves in mucous fluids and forms irritant, even corrosive solutions.</li> <li>Inhalation of the ammonia fumes causes coughing, vomiting, reddening of lips, mouth, nose, throat and conjunctiva while higher concentrations can cause temporary blindness, restlessness, tightness in the chest, pulmonary edema (lung damage), weak pulse and cyanosis.</li> <li>Inhalation of high concentrations of vapor may cause breathing difficulty, tightness in chest, pulmonary edema and lung damage.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>Accidental ingestion of the material may be damaging to the health of the individual.</li> <li>Large doses of ammonia or injected ammonium salts may produce diarrhea and may be sufficiently absorbed to produce increased production of urine and systemic poisoning. Symptoms include weakening of facial muscle, tremor, anxiety, reduced muscle and limb control.</li> </ul>
<b>Skin Contact</b>	<ul style="list-style-type: none"> <li>This material can cause inflammation of the skin on contact in some persons.</li> <li>The material may accentuate any pre-existing dermatitis condition.</li> <li>Open cuts, abraded or irritated skin should not be exposed to this material.</li> <li>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</li> <li>Mild skin reaction is seen with contact of the vapor of this material on moist skin. High concentrations or direct contact with solutions produces severe pain, a stinging sensation, burns and blisters and possible brown stains. Death could result from extensive burning.</li> </ul>
<b>Eye</b>	There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
<b>Chronic</b>	<ul style="list-style-type: none"> <li>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</li> <li><b>Harmful: danger of serious damage to health by prolonged exposure through inhalation.</b></li> <li>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</li> <li>On the basis of limited epidemiological or animal data, it has been concluded that prolonged inhalation of the material, in an occupational setting, may increase the risk of cancer in humans.</li> <li>Prolonged or repeated minor exposure to ammonia gas/vapor may cause long-term irritation to the eyes, nose and upper respiratory tract.</li> </ul>

<b>Montana X-Treme Copper Cream</b>	<b>Toxicity: Not Available</b>	<b>Irritation: Not Available</b>
<b>silica crystalline - quartz</b>	<b>Toxicity: Not Available</b>	<b>Irritation: Not Available</b>
<b>ammonium oxalate</b>	<b>Toxicity: Not Available</b>	<b>Irritation: Not Available</b>
<b>isopropanol</b>	<b>Toxicity:</b> <ul style="list-style-type: none"> <li>Dermal (rabbit) LD50: 12792 mg/kg[1]</li> <li>Inhalation (rat) LC50: 72.6 mg/L/4h[2]</li> <li>Oral (rat) LD50: 5000 mg/kg[2]</li> </ul>	<b>Irritation:</b> <ul style="list-style-type: none"> <li>Eye (rabbit): 10 mg - moderate</li> <li>Eye (rabbit): 100 mg - SEVERE</li> <li>Eye (rabbit): 100mg/24hr-moderate</li> <li>Skin (rabbit): 500 mg - mild</li> </ul>
<b>ammonium hydroxide</b>	<b>Toxicity:</b> <ul style="list-style-type: none"> <li>Dermal (rat) LD50: 4.84 mg/L/60M[2]</li> <li>Inhalation (rat) LC50: 2000 ppm/4H[2]</li> <li>Inhalation (rat) LC50: 9500 ppm/1H[2]</li> <li>Oral (rat) LD50: 350 mg/kgE[1]</li> </ul>	<b>Irritation:</b> <ul style="list-style-type: none"> <li>Eye (rabbit): 0.25 mg SEVERE</li> <li>Eye (rabbit): 1 mg/30s SEVERE</li> </ul>
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>SILICA CRYSTALLINE - QUARTZ</b>	<p><b>WARNING: For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS</b></p> <ul style="list-style-type: none"> <li>The International Agency for Research on Cancer (IARC) has classified occupational exposures to <b>respirable</b> (&lt;5 um) crystalline silica as being carcinogenic to humans. This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease.</li> <li>Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnea, liver tumors.</li> </ul> <p><i>* Millions of particles per cubic foot (based on impinger samples counted by light field techniques).</i></p> <p><i>NOTE : the physical nature of quartz in the product determines whether it is likely to present a chronic health problem.</i></p>
<b>AMMONIUM OXALATE</b>	No significant acute toxicological data identified in literature search.
<b>ISOPROPRANOL</b>	Isopropanol is irritating to the eyes, nose and throat but generally not to the skin. Prolonged high dose exposure may also produce depression of the central nervous system and drowsiness. Few have reported skin irritation. It can be absorbed from the skin or when inhaled. Intentional swallowing is common particularly among alcoholics or suicide victims and also leads to fainting, breathing difficulty, nausea, vomiting and headache. In the absence of unconsciousness, recovery usually occurred.

<b>AMMONIUM HYDROXIDE</b>	<ul style="list-style-type: none"> <li>Unreported (man) LDLo: 132 mg/kg</li> <li>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</li> <li>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</li> </ul>
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Acute Toxicity	Data Not Available to make classification	Carcinogenicity	Data Not Available to make classification
Skin Irritation/Corrosion	Data required to make classification available	Reproductivity	Data Not Available to make classification
Serious Eye Damage/Irritation	Data required to make classification available	STOT - Single Exposure	Data required to make classification available
Respiratory or Skin sensitization	Data Not Available to make classification	STOT - Repeated Exposure	Data required to make classification available
Mutagenicity	Data Not Available to make classification	Aspiration Hazard	Data required to make classification available

## Section 12 - ECOLOGICAL INFORMATION

**AQUATIC TOXICITY: Do not discharge into sewers or waterways.**

### Persistence and Degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
isopropanol	LOW (Half-life = 14 days)	LOW (Half-life = 3 days)
ammonium hydroxide	LOW	LOW

### Bioaccumulative Potential

Ingredient	Mobility
C14-20 aliphatics (<=2% aromatics)	LOW (BCF = 159)
ethylene glycol monobutyl ether	LOW (BCF = 2.51)
oleic acid	LOW (LogKOW = 7.7294)

### Mobility in Soil

Ingredient	Mobility
isopropanol	HIGH (KOC = 1.06)
ammonium hydroxide	LOW (KOC = 14.3)

## Section 13 - DISPOSAL CONSIDERATIONS

### Waste Treatment Methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>• <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>• It may be necessary to collect all wash water for treatment before disposal.</li> <li>• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>• Where in doubt contact the responsible authority.</li> <li>• Recycle wherever possible or consult manufacturer for recycling options.</li> <li>• Consult State Land Waste Authority for disposal.</li> </ul>
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## Section 14 - TRANSPORT INFORMATION

### Labels Required

**Marine Pollutant: No**

**Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code**

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	ammonium hydroxide	Y



## Section 15 - REGULATORY INFORMATION

### SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

#### SILICA CRYSTALLINE - QUARTZ (14808-60-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC

Monographs

US - Alaska Limits for Air Contaminants  
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)  
US - California Permissible Exposure Limits for Chemical Contaminants  
US - California Proposition 65 - Carcinogens  
US - Hawaii Air Contaminant Limits  
US - Idaho - Limits for Air Contaminants  
US - Idaho - Toxic and Hazardous Substances - Mineral Dust  
US - Michigan Exposure Limits for Air Contaminants  
US - Minnesota Permissible Exposure Limits (PELs)  
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHS): Carcinogens  
US - Oregon Permissible Exposure Limits (Z-1)  
US - Oregon Permissible Exposure Limits (Z-3)  
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants  
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants  
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants  
US - Washington Permissible exposure limits of air contaminants  
US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values  
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants  
US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts  
US ACGIH Threshold Limit Values (TLV)  
US ACGIH Threshold Limit Values (TLV) - Carcinogens  
US National Toxicology Program (NTP) 13th Report Part A Known to be Human Carcinogens  
US NIOSH Recommended Exposure Limits (RELs)  
US OSHA Permissible Exposure Levels (PELs) - Table Z1  
US OSHA Permissible Exposure Levels (PELs) - Table Z3  
US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity  
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

#### AMMONIUM OXALATE (1113-38-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

#### ISOPROPANOL (67-63-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC

Monographs

US - Alaska Limits for Air Contaminants  
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)  
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)  
US - California Permissible Exposure Limits for Chemical Contaminants  
US - Hawaii Air Contaminant Limits  
US - Idaho - Limits for Air Contaminants  
US - Michigan Exposure Limits for Air Contaminants  
US - Minnesota Permissible Exposure Limits (PELs)  
US - Oregon Permissible Exposure Limits (Z-1)  
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants  
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants  
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants  
US - Washington Permissible exposure limits of air contaminants  
US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values  
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants  
US ACGIH Threshold Limit Values (TLV)  
US ACGIH Threshold Limit Values (TLV) - Carcinogens  
US EPCRA Section 313 Chemical List  
US NIOSH Recommended Exposure Limits (RELs)  
US OSHA Permissible Exposure Levels (PELs) - Table Z1  
US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants  
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory  
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants  
US - Washington Permissible exposure limits of air contaminants  
US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values  
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants  
US ACGIH Threshold Limit Values (TLV)  
US ACGIH Threshold Limit Values (TLV) - Carcinogens  
US EPCRA Section 313 Chemical List  
US NIOSH Recommended Exposure Limits (RELs)  
US OSHA Permissible Exposure Levels (PELs) - Table Z1  
US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants  
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

#### AMMONIUM HYDROXIDE (1336-21-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US - Alaska Limits for Air Contaminants  
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)  
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)

US - California Permissible Exposure Limits for Chemical Contaminants  
 US - Hawaii Air Contaminant Limits  
 US - Idaho - Limits for Air Contaminants  
 US - Michigan Exposure Limits for Air Contaminants  
 US - Minnesota Permissible Exposure Limits (PELs)  
 US - Oregon Permissible Exposure Limits (Z-1)  
 US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants  
 US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants  
 US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants  
 US - Washington Permissible exposure limits of air contaminants  
 US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values  
 US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants  
 US ACGIH Threshold Limit Values (TLV)  
 US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)  
 US EPCRA Section 313 Chemical List  
 US NIOSH Recommended Exposure Limits (RELs)  
 US OSHA Permissible Exposure Levels (PELs) - Table Z1  
 US SARA Section 302 Extremely Hazardous Substances  
 US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (silica crystalline - quartz; ammonium hydroxide; isopropanol; ammonium oxalate)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	<i>Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets</i>

## Section 16 - OTHER INFORMATION

### Other Information

#### Ingredients with Multiple CAS Numbers

Name	CAS Number
silica crystalline - quartz	122304-48-7, 122304-49-8, 12425-26-2, 1317-79-9, 14808-60-7, 70594-95-5, 87347-84-0
ammonium oxalate	1113-38-8, 6009-70-7

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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