

Section 1. Supplier Information

CMI Chemical Corporation
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Section 2. Hazardous Ingredients

| <u>Hazardous Component(s)</u> | <u>CAS #</u> | <u>PEL TWA</u> | <u>PEL Ceiling</u> | <u>TLV TWA</u> | <u>TLV STEL</u> | <u>MFG Limits</u> | <u>WGT %</u> |
|-------------------------------|--------------|----------------|--------------------|----------------------|---------------------|-------------------|--------------|
| Crystalline silica (quartz) | 14808-60-7 | 10 mg/m | N/E | 0.025 mg/ | None | N/E | > 50 |
| Acetone | 67-64-1 | 1000 pp | N/E | 500 ppm | 750 ppm | N/E | < 30 |
| Polyvinyl acetate | 9003-20-7 | 15 mg/m | N/E | N/E | N/E | N/E | < 10 |
| Calcined kaolin clay | 66402-68-4 | 10 mg/m | 10 mg/m | 10 mg/m ³ | 2 mg/m ³ | N/E | < 5 |
| Fuller's earth | 8031-18-3 | N/E | N/E | N/E | N/E | N/E | < 5 |

N/A = Not Applicable; N/E = Not Established; * = Mists; # = Skin; ' = Respirable Dust; " = Total Dust; ^ = Vapor; ** = Fumes; C = Ceiling Limit

All components of this product are listed on the Toxic Substances Control Act (TSCA) Inventory and the Canadian Domestic Substances List (DSL), or are exempt from the listing.

Section 3. Hazards Identification

Primary Routes of Entry

Inhalation: YES
Skin: YES
Ingestion: YES

Hazardous Materials Information System (HMIS) Ratings

Health: * 1
Fire: 3
Reactivity: 0
0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe
* = Chronic Hazard

Signs of Symptoms of Exposure:

INHALATION: High vapor or mist concentrations may produce nose, throat, and respiratory irritation and may cause central nervous system (CNS) depression.

SKIN: Material is mildly irritating to the skin. Prolonged or repeated contact may cause defatting and drying of the skin, resulting in irritation and dermatitis.

EYES: Minimally irritating to the eyes. High vapor concentrations may be irritating.

INGESTION: Ingestion of this product may result in vomiting. Aspiration (breathing) of vomitus into the lungs must be avoided, as even small quantities may result in aspiration pneumonitis.

Chemical Listed as Potential Carcinogens:

EMERWELD THICK -- CORE PASTE

NTP: YES

IARC: YES

OSHA: NO

Target Organs: Eyes, skin, respiratory system, and CNS

Section 4. Emergency And First Aid Procedures

INHALATION: If adverse effects such as dizziness, nausea, or irritation are noted, move person to fresh air. If not breathing, give artificial respiration. Get medical attention!

SKIN: Immediately wash skin with large amounts of soap and water. Remove contaminated clothing and shoes; wash before reuse. Get medical attention if irritation persists after washing.

EYES: Flush eyes immediately with water for at least 15 minutes. If irritation persists, call a physician.

INGESTION: DO NOT INDUCE VOMITING! Contact a physician immediately!

Section 5. Fire Fighting Measures

Flash Point: 0 ° F

Method Used: Pensky-Martens Closed Cup

Flammable Limits in Air % by Volume: LEL: 2.6

UEL: 12.8; for acetone

Extinguisher Media: Use dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear a self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode, and protective clothing.

Unusual Fire And Explosion Hazards: Product is flammable and may be ignited by heat, sparks, static electricity, or open flame.

Section 6. Accidental Release Measures

If material is spilled, eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area; place in closed containers for disposal. Ventilate confined spaces. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas. Continue to observe precautions for volatile, combustible vapors from absorbed material.

CERCLA (Superfund) Reportable Quantity (in lbs RQ Acetone = 5,000 lbs, Product = 20,000 lbs)

Section 7. Handling and Storage

Handling: Avoid contact with skin and eyes. Avoid breathing vapor or mist. Do not ingest. Wash thoroughly after handling. Use with adequate ventilation. Product evolves small quantities of hydrogen gas.

Storage: Store in a dry location at room temperature. Keep container closed and maintain all original markings and labels. Keep this container and vapors from this container away from heat, sparks, flame, and other ignition sources. Do not store near oxidizable material.

Other: CAUTION! Do not use cutting or welding torches on containers, even when empty. Containers, even those that have been emptied, will retain product residue and vapors. Do not reuse container without recycling or reconditioning. Handle empty containers as if they were full.

Section 8. Exposure Controls and Personal Protection

Respiratory Protection: Where vapor concentration exceeds or is likely to exceed the recommended exposure limit, an approved organic vapor type respirator is acceptable. A NIOSH/MSHA approved self-contained breathing apparatus

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| | or air line respirator with full face piece, is required for vapor concentrations above 1,000 ppm and for spills and/or emergencies. |
| Local Exhaust: | Special ventilation is suggested at points where vapors can be expected to escape to the workplace air. |
| Mechanical Exhaust: | Mechanical ventilation should be sufficient to maintain exposure levels below exposure limits. |
| Protective Gloves: | Wear chemical resistant gloves. |
| Eye Protection: | Safety glasses with side shields. Do NOT wear contact lenses. Chemical goggles and/or faceshield should be worn where splashing is possible. |
| Other Protection: | Eye wash and safety shower should be readily available. Wear a chemical resistant apron and boots where splashing is possible. |
| Hygienic Practices: | Protective equipment and clothing should be selected, used and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer. Do not eat, drink, or smoke while using this product. Wash hands prior to eating, drinking, smoking, or using restrooms. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work shift. |

Section 9. Physical and Chemical Properties

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| Boiling Point: | N/E | Degree of water solubility: |
| Specific Gravity (H ₂ O=1): | 1.3 -1.5 | Negligible = Less than 0.1% |
| Vapor Pressure (mm Hg): | N/E | Slight = 0.1% - 1% |
| Vapor Density (air=1) | N/E | Moderate = 1% - 10% |
| Solubility in Water: | Negligible. | Appreciable = More than 10% |
| Reactivity in Water: | None. | Complete = 100% |
| Weight per Gallon (lb/gal): | 10.8 - 13.3 lbs/gal | |
| % Volatile by Volume: | 25-35% | |
| % Solid by Weight: | 65-75% | |
| Appearance and Odor: | Green paste with an acetone odor. | |
| Theoretical VOC: (>0.1 mm Hg @ 20 ° C) | 0 lbs/gal | |
| Analytical VOC : (EPA method 24) | 0 lbs/gal | |
| pH: | N/A, solvent based. | |

Section 10. Stability and Reactivity

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| Stability: | Stable. | Hazard Polymerization: Will not occur. |
| Conditions to Avoid: | EXTREMELY FLAMMABLE! Keep away from all ignition sources (heat, sparks, or open flames). | |
| Incompatibility (Materials to Avoid): | Oxidizers and acids. | |
| Hazardous Decomposition Products: | Oxides of carbon and silicon. | |

Section 11. Toxicological Information

CrystallineSilica (quartz) [CASRN 014808-60-7]
ACUTE TOXICITY

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The method of exposure to crystalline silica that can lead to the health hazards listed below is inhalation.

A. SILICOSIS

The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute.

Chronic or Ordinary Silicosis (often referred to as Simple Silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter,

primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production.

Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale).

Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there was "sufficient evidence in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "sufficient evidence in experimental animals for the carcinogenicity of quartz and cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997).

NTP - The National Toxicology Program, in its Ninth Annual Report on Carcinogens, classified "silica, crystalline (respirable)" as a known human carcinogen.

OSHA - Crystalline silica (quartz) is not regulated by the U. S. Occupational Safety and Health Administration as a carcinogen.

C. AUTOIMMUNE DISEASES

Several studies have reported excess cases of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers. For a review of the subject, the following may be consulted: "Occupational Exposure to Crystalline Silica and Autoimmune Disease", Environmental Health Perspectives, Volume 107, Supplement 5, pp. 793-802 (1999); "Occupational Scleroderma", Current Opinion in Rheumatology, Volume 11, pp. 490-494

(1999).

D. TUBERCULOSIS

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Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: Occupational Lung Disorders, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); "Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners," Occup Environ Med., Volume 55, pp.496-502 (1998).

E. KIDNEY DISEASE

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", Nephron, Volume 85, pp. 14-19 (2000).

F. NON-MALIGNANT RESPIRATORY DISEASES

The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below, for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Acetone [CASRN 000067-64-1]

ACUTE TOXICITY Oral LD50 (rat) = 5.8 g/kg Eye Irritation: Severe [Rabbit]
Dermal LD50 (rabbit) > 15.7 g/kg Dermal Irritation: Mild [Rabbit]
Inhalation LC50 (rat) > 16,000 ppm, 4 hrs

Reproductive and Developmental Toxicity: In pregnant animals exposed to high concentrations of acetone, there were no birth defects, but some evidence of embryofetal toxicity (deceased pup weight, increased late resorptions).

Other Testing: In animal studies, repeated oral dosing of large amounts of acetone was reported to cause adverse effects in the hematological system, liver, kidney and testis. In animals, acetone administration can potentiate the toxicity of a variety of chemical toxicants, which is believed to be secondary to induction of liver enzymes. [18,7-0-082200]

Polyvinyl acetate [CASRN 009003-20-7]

ACUTE TOXICITY

Repeated Dose 90-day Oral Toxicity Study in Rodents
rat = 3080 mg/kg/h/d

Calcined kaolin clay [CASRRN 066402-68-4]

ACUTE TOXICITY

Acute silicosis has been reported for exposure to very high levels of respirable crystalline. Acute silicosis is rapidly progressive with diffuse pulmonary involvement and does not form classic silicotic nodules. The disease is often complicated by tuberculosis.

CHRONIC TOXICITY

Classic silicosis is characterized by the formation of scattered silica nodules of scar tissue in the lungs ranging in size from microscopic to greater than 1 cm. Simple silicosis (nodules < 1cm) is generally asymptomatic but progress to debilitating complicated silicosis (nodules > 1 cm) with or without continued exposure. Historically, workers who developed silicosis had greatly increased risks of developing tuberculosis infection (silicotuberculosis).

Kaolinosis exists in both simple and complicated forms. Data indicates that kaolin has the ability to induce fibrogenic response in the absence of silica. More complicated forms of kaolinosis are more often associated with respiratory symptoms and impairment.

Generally only respirable crystalline silica particles (< 10 micrometers) are considered fibrogenic.

Section 12. Ecological Information

CrystallineSilica (quartz) [CASRN 014808-60-7]

ECOTOXICITY

Crystalline silica (quartz) is not known to be ecotoxic; i.e., there are no data that suggests that crystalline silica (quartz) is toxic to birds, fish, invertebrates, microorganisms or plants.

Acetone [CASRN 000067-64-1]

ECOTOXICITY

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| 96 hr-LC50 (fathead minnow) = 9300 mg/l | 16 hr-IC50 (bacteria) > 5000 mg/l |
| LC50 (fathead minnow) = 7,160 mg/L | LC50 (ceriodaphnia dubia) = 8,098 mg/L |
| LC50 (rainbow trout) = 6,100 mg/L | LC50 (brook trout) = 6,070 mg/L |
| LC50 (goldfish) = 5,000 mg/L | LC50 (ambystoma) = 20,000 mg/L |
| LC50 (bluegill) = 8,300 mg/L | LC50 (xenopis laevis) = 24,000 mg/L |
| LC50 (daphnia magna) = 9,218 mg/L | EC50 (Lemna sp.) = 10,677 - 15,233 mg/L |
| EC50 (daphnia magna) = 6,084 mg/L | EC50 (skeletonema costatum) = 11,800 - 14,400 mg/L |

ENVIRONMENTAL FATE

BOD05 56 % Theoretical Oxygen Demand (ThOD) - 2.00 mg/mg, measured

BOD10 76 % Theoretical Oxygen Demand (ThOD) - 2.20 mg/mg, calculated

BOD20 84 % Octanol/Water partition coefficient : -0.24, measured

BCF (fish) = 0.69 Organic Carbon partition coefficient: 0.37

Air/water partition coefficient : 0.15E-2 Henry's constant = 3.6E-5 atm-m³/mol (est.)

5-Day biochemical oxygen demand (BOD5) is 1.52 p/p.

10-Day biochemical oxygen demand (BOD10) is 1.60 p/p.

20-Day biochemical oxygen demand (BOD20) is 1.62 p/p.

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. The atmospheric half-life is 22 days. Bioconcentration potential is low (BCF) less than 100 or Log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is greater than 1000 mg/L. [20,2-0-071000], [3-0,18-072299]

Polyvinyl acetate [CASRN 009003-20-7]

Product is hydrolytically unstable. Insoluble in water. Absorbed by floating. Separation by sedimentation. Bioaccumulation is not expected to occur. No harmful effects expected.

Calcined kaolin clay [CASRN 066402-68-4]

ECOTOXICITY

Calcined kaolin clay and crystalline silica and inert materials which are not expected to exert an ecotoxic effect or bioconcentrate in the food chain.

Section 13. Disposal Considerations

Waste Disposal Methods (Federal, State, Local):

In accordance with all federal, state and local requirements.

RCRA Hazardous Waste Number: D001, U002, U220

Section 14. Transport Information

Hazardous Material Description:

(Proper shipping name, hazard class, hazard ID#, packing group)

Domestic ground non-bulk: UN1133, ADHESIVES, 3, PG II

Domestic ground bulk: UN1133, ADHESIVES, 3, PG II

International: UN1133, ADHESIVES, 3, PG II

Section 15. Regulatory Information

SARA 313 Information

This product contains the following chemical(s) above deminis concentrations and may be subject to reporting under section 313:

None.

Section 16. Other Information

This MSDS contains revisions in the following sections: New format

Prepared by: Andrew J. Thomas Chemist

Revised by: Andrew J. Thomas Chemist

The development of this Material Safety Data Sheet (MSDS) relies upon information provided to us by each of our raw material suppliers. This MSDS will be updated as changes occur to their MSDS(s).

We believe the recommendations and technical information contained herein to be accurate. However, they are given without warranty or guarantee, expressed or implied, and we assume no responsibility for losses or damage, direct or indirect, as a result of their use.