



DO A 041751
CONFIDENTIAL

**CARBORUNDUM****INSULATION BLANKET (R400 Dry Quench)
MATERIAL SAFETY DATA SHEET**

24-HOUR EMERGENCY ASSISTANCE	GENERAL ASSISTANCE	NFPA FIRE HAZARD SYMBOL*
BP America (In Ohio): 800-362-8059 (Outside Ohio): 800-321-8642 CHEM.TREC Assist: 800-424-9300	716-278-2183	 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant *See Text
MSDS Number > 105/M0101		

MANUFACTURER/SUPPLIER: The Carborundum Company - Fibers Division
ADDRESS: P.O. Box 808, Niagara Falls, New York 14302

*3/29/92***PRODUCT IDENTIFICATION**

TRADE NAME:

FIBERFRAX® DURABLANKET® 2600**REVIEWED**
APR 06 1995
[Signature]

CAS NUMBER: MIXTURE
SYNONYM(S): CERAMIC FIBER; REFRACTORY FIBER; MMVF; REFRACTORY CERAMIC FIBER; RCF
CHEMICAL FAMILY: VITREOUS ALUMINOSILICATE FIBERS
MOLECULAR FORMULA: $Al_2O_3 \cdot SiO_2$ (Amorphous)
MOLECULAR WEIGHT: NA
PRODUCT CODE: NA HIERARCHY: NA

PRODUCT HAZARD SUMMARY

HEALTH **WARNING!**
POSSIBLE CANCER HAZARD BY INHALATION
MAY BE HARMFUL IF INHALED
(Hazard depends on duration and level of exposure)
MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT

FLAMMABILITY **NON-COMBUSTIBLE**

REACTIVITY **STABLE**

PRODUCT HEALTH HAZARD INFORMATION**INGESTION:**

Ingestion is unlikely. If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, abdominal pain and diarrhea.

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SKIN:

SLIGHTLY TO MODERATELY IRRITATING. May cause irritation, inflammation and rash.

EYE:

SLIGHTLY TO MODERATELY IRRITATING. Abrasive action may cause damage to the outer surface of the eye.

INHALATION:

May cause respiratory tract irritation. Pre-existing medical conditions may be aggravated by exposure; specifically, bronchial hyper-reactivity and chronic bronchial and lung disease.

SPECIAL TOXIC EFFECTS:

The existing toxicology and epidemiology data bases for RCF's are still preliminary. Carborundum is continuing to support the necessary investigations and will make all data available to all interested parties. Information will be updated as studies are completed and reviewed. The following is a review of the results to date:

EPIDEMIOLOGY

At this time there are no known published reports demonstrating negative health outcomes of workers exposed to refractory ceramic fiber (RCF). Epidemiologic investigations of RCF production workers are ongoing.

The preliminary evidence, obtained from employees in RCF manufacturing facilities, is as follows:

- 1) There is no evidence of any fibrotic lung disease (interstitial fibrosis) whatsoever on X-ray.
- 2) There is no evidence of any lung disease among those employees exposed to RCF that had never smoked.
- 3) A statistical "trend" was observed in the exposed population between the duration of exposure to RCF and a decrease in some measures of pulmonary function. These observations are clinically insignificant. In other words, if these observations were made on an individual employee, the results would be interpreted as being within the normal range.
- 4) Pleural plaques (thickening along the chest wall) have been observed in a small number of employees who had a long duration of employment. There are several occupational and non-occupational causes for pleural plaque. It should be noted that plaques are not "pre-cancer" nor are they associated with any measurable effect on lung function.

TOXICOLOGY

A number of studies on the health effects of inhalation exposure of rats and hamsters are now reaching completion. In a lifetime nose-only inhalation study, rats exposed to the Maximum Tolerated Dose of 30 mg/m³ (200 fibers/cc) developed progressive lung damage (interstitial fibrosis) and cancers of the lung and of the pleura (lining of the chest wall and lung). In contrast, hamsters similarly exposed developed interstitial fibrosis and pleural cancer, but no lung cancer. Cancer of the pleura is called mesothelioma.

A multiple dose study (3, 9, 16 mg/m³; 25, 75, 150 fibers/cc, respectively) is currently ongoing in rats. After 24 months of exposure, only reversible cellular changes have been seen in the low dose group. At 9 mg/m³ (75 fibers/cc), areas of lung fibrosis are barely discernible and at 16 mg/m³ (150 fibers/cc) both lung and pleural fibrosis are present.

ND = No Data
NA = Not Applicable

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At this time, no lung or pleural cancer has been seen in the multiple dose study. This information will be updated once the study is completed.

The International Agency for Research on Cancer (IARC) reviewed the carcinogenicity data on man-made vitreous fibers (including ceramic fiber, glasswool, rockwool, and slagwool) in 1987. IARC classified ceramic fiber, fibrous glasswool and mineral wool (rockwool and slagwool) as possible human carcinogens (Group 2B).

FIRST AID

INGESTION:

Ingestion is unlikely. If ingested, the preferred method of elimination is through natural gastrointestinal elimination. Drink extra water. Get medical attention if gastrointestinal symptoms develop, for example, irritation, nausea, vomiting, abdominal pain and diarrhea.

SKIN CONTACT:

Remove contaminated clothing. Wash area of contact thoroughly with soap and water. Do not rub or scratch exposed skin. Using a skin cream or lotion after washing may be helpful. Get medical attention if irritation persists.

EYE CONTACT:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes. Get medical attention if irritation persists.

INHALATION:

Remove exposed person from source of exposure to fresh air. Some people may be sensitive to a fiber induced irritation of the respiratory tract. If symptoms such as shortness of breath, cough, wheezing or chest pain develop, seek medical attention. If person experiences continued breathing difficulties, administer oxygen until medical assistance can be rendered.

NOTES TO PHYSICIAN

NA

PERSONAL PROTECTION INFORMATION

The following personal protective guidelines should be followed. However, when the material has been exposed to temperatures greater than 1800 F, more extensive precautions are required as outlined in the "Special Precautions/Supplemental Information" section.

EYE PROTECTION:

Wear safety glasses or chemical goggles to prevent eye contact. Contact lenses should not be worn unless chemical goggles are also used and care is taken not to touch the eyes with contaminated body parts or materials. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION:

Wear gloves, hats and full body covering to prevent skin irritation as necessary (see Special Precautions/Supplemental Information Section).

RESPIRATORY PROTECTION:

Properly designed and operated engineering controls are the most effective methods for minimizing airborne dust and fiber. If exposures exceed our Recommended Exposure Guideline of 1 fiber/cc of air (8-hour TWA) and engineering controls are not feasible, respiratory protection (as described below) must be used. Respiratory protection must also be used if irritation is experienced, when airborne concentrations are unknown, or the material has been exposed to temperatures greater than 1800 F (see Special Precautions/Supplemental Information Section). When handling RCF products in monitored areas, Carborundum recommends that NIOSH/MSHA approved respirators be worn as outlined in the following table:

Concentration (8-hour TWA)	Minimum Acceptable Respirator Type
0 - 1 fiber/cc	Optional disposable dust respirator (e.g. 3M 9970 or equivalent).
1 - 5 fibers/cc	Half-face, air-purifying respirator equipped with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 6000 series with 2040 filter or equivalent).
5 - 25 fibers/cc	Full face, air-purifying respirator with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 7800S with 7255 filters or equivalent) or powered air-purifying respirator (PAPR) equipped with HEPA filter cartridges (e.g. 3M W3265S with W3267 filters or equivalent).
Greater than 25 fibers/cc	Full face, positive pressure supplied air respirator (e.g. 3M 7800S with W9435 hose and W3196 low pressure regulator kit or W3061 high pressure regulator kit connected to clean air supply or equivalent).

If airborne fiber levels are not known, as minimum protection, use half-mask air-purifying respirator equipped with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 6000 series or equivalent). If respiratory protection is used, employees must be given instruction and training as described in 29 CFR 1910.134.

PHYSICAL PROPERTIES

BOILING POINT: NA
SPECIFIC GRAVITY: ND
MELTING POINT: ND
% VOLATILE: ND
VAPOR PRESSURE: NA
EVAPORATION RATE (WATER=1): NA
VAPOR DENSITY (AIR=1): NA
VISCOSITY: NA
% SOLUBILITY IN WATER: NA
OCTANOL/WATER PARTITION COEFFICIENT: ND
POUR POINT: NA
pH: NA
APPEARANCE/ODOR: ND

ND = No Data
NA = Not Applicable

FIRE AND EXPLOSION DATA

FLASH POINT: NONE
AUTOIGNITION TEMPERATURE: NONE
FLAMMABILITY LIMITS IN AIR (% BY VOL.) LOWER: NA
FLAMMABILITY LIMITS IN AIR (% BY VOL.) UPPER:

BASIC FIREFIGHTING PROCEDURES:

Use extinguishing agent suitable for type of surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None.

REACTIVITY DATA

STABILITY/INCOMPATIBILITY:

Stable under normal conditions of use. Soluble in hydrofluoric acid, phosphoric acid and concentrated alkali.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS:

None.

ENVIRONMENTAL INFORMATION

Spill or Leak Procedure:

Use vacuum suction with HEPA filters to clean up spilled material. Use wet sweeping or a dust suppressant where sweeping is necessary. Avoid clean up procedures that may result in water pollution. Personal safety, handling and exposure recommendations described elsewhere in this data sheet apply to exposure during clean up of spilled material and must be followed.

WASTE DISPOSAL:

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however it could be characteristically hazardous if it is considered toxic, corrosive, ignitable, or reactive according to Federal definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed with or comes in contact with a hazardous waste. Check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations at 40 CFR 262, 263, 264, 268 and 270 apply. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable Federal, state, and local regulations, and in such a manner as to assure no discharge to a source of drinking water.

SARA TITLE III INFORMATION:

Listed below are the hazard categories for the Superfund Amendments and Reauthorization Act (SARA) Section 311/312 (40 CFR 370):

Immediate Hazard: - Delayed Hazard: ☒ Fire Hazard: - Pressure Hazard: - Reactivity Hazard: -

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The product does not contain any toxic chemical(s) subject to the reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

ADDITIONAL ENVIRONMENTAL REGULATORY INFORMATION:

There may be specific regulations at the local, regional or state level that pertain to this material.

REGULATORY INFORMATION

All components of this product are listed on the TSCA inventory. All components of this product are listed on the Canadian DSL Inventory.

This product contains the following substance(s) listed by the State of California in Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986:

- ceramic fibers (airborne particles of respirable size)

The following Canadian Workplace Hazardous Materials Information System (WHMIS) categories apply to this product:

Compressed Gas	-	Flammable/Combustible	-	Oxidizer	-	Acutely Toxic	-
Other Toxic Effects	x	BioHazardous	-	Corrosive	-	Dangerously Reactive	-

SPECIAL PRECAUTIONS/SUPPLEMENTAL INFORMATION

HANDLING/STORAGE:

The toxicologic data indicate that ceramic fiber should be handled with caution. The handling practices described in this MSDS must be strictly followed (see section on Personal Protection Information). In particular, when handling refractory ceramic fiber in any application, special caution should be taken to avoid unnecessary cutting and tearing of the material to minimize generation of airborne dust.

It is recommended that full body clothing should be worn to reduce the possibility of skin irritation. Washable or disposable clothing may be used. Do not take unwashed work clothing home. Work clothes should be washed separately from other clothing. Rinse washing machine thoroughly after use. If clothing is to be laundered by someone else, inform launderer of proper procedure. Work clothes and street clothes should be kept separate to prevent contamination.

Product which has been in service at elevated temperatures (greater than 1800 F) may undergo partial conversion to cristobalite, a form of crystalline silica. This reaction occurs at the furnace lining hot face. As a consequence, this material becomes more friable; special caution must be taken to minimize generation of airborne dust. The amount of cristobalite present will depend on the temperature and length in service.

IARC has recently reviewed the animal, human and other relevant experimental data on silica in order to critically evaluate and classify the cancer causing potential. Based on its review, IARC classified crystalline silica as a group 2A carcinogen (probable human carcinogen).

The OSHA permissible exposure limit (PEL) for cristobalite is 0.05 mg/M3 (respirable dust). The ACGIH threshold limit value (TLV) for cristobalite is 0.05 mg/M3 (respirable dust) (ACGIH 1991-92). Use NIOSH or MSHA approved equipment when airborne exposure limits may be exceeded. Minimal acceptable respirators recommended for given airborne cristobalite concentrations are:

ND = No Data
NA = Not Applicable

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Concentration**Minimum Acceptable Respirator Type**

Up to 5 fibers/cc or up to 10 times the OSHA PEL for cristobalite

Half face, air-purifying respirator equipped with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 6000 series with 2040 filter or equivalent).

Up to 25 fibers/cc or 50 times the OSHA PEL for cristobalite (2.5 mg/m³)

Full face, air-purifying respirator with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 7800S with 7255 filters or equivalent) or powered air-purifying respirator (PAPR) equipped with HEPA filter cartridges (e.g. 3M W3265S with W3267 filters or equivalent).

Greater than 25 fibers/cc or 50 times the OSHA PEL for cristobalite (2.5 mg/m³)

Full face, positive pressure supplied air respirator (e.g. 3M 7800S with W9435 hose and W3196 low pressure regulator kit or W3061 high pressure regulator kit connected to clean air supply or equivalent).

If airborne fiber or cristobalite concentrations are not known, as minimum protection, use NIOSH/MSHA approved half face, air-purifying respirator with HEPA filter cartridges.

Insulation surfaces should be lightly sprayed with water before removal to suppress airborne dust. As water evaporates during removal, additional water should be sprayed on surfaces as needed. Only enough water should be sprayed to suppress dust so that water does not run onto the floor of the work area. To aid the wetting process, a surfactant can be used.

After RCF removal is completed, dust-suppressing cleaning methods, such as wet sweeping or vacuuming, should be used to clean the work area. If dry vacuuming is used, the vacuum must be equipped with a HEPA filter. Air blowing or dry sweeping should not be used. Dust-suppressing components can be used to clean up light dust.

EMPTY CONTAINERS:

Product packaging may contain product residue. Do not reuse.

TRANSPORTATION REQUIREMENTS

D.O.T. PROPER SHIPPING NAME (49 CFR 172.101):	NA
D.O.T. HAZARD CLASS (49 CFR 172.101):	NA
UN/NA CODE (49 CFR 172.101):	NA
BILL OF LADING DESCRIPTION (49 CFR 172.202):	PRODUCT NAME
D.O.T. LABELS REQUIRED (49 CFR 172.101):	NA
D.O.T. PLACARDS REQUIRED (49 CFR 172.504):	NA

INGREDIENTS/HEALTH HAZARD INFORMATION

COMPONENT	CAS NO.		EXPOSURE LIMITS - REF.
Alumino-Zirconia-Silicate (vitreous)	NA	99-100	1 fiber/cc 8-hr. TWA (Carborundum)*

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NA = Not Applicable

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COMPONENT	CAS NO.		EXPOSURE LIMITS - REF.
Remaining components not determined hazardous and/or hazardous components present at less than 1.0% (0.1% for carcinogens).	NA	Trace	NA

*No OSHA or ACGIH exposure limits have been established for these materials. Pending the results of long-term health effects studies, airborne exposures should be controlled at or below the Carborundum Recommended Exposure Guidelines listed above.

REVISION DATE: 29-mar-1992 REPLACES SHEET DATED: 27-jul-1990
 COMPLETED BY: CARBORUNDUM HSEQ DEPARTMENT

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

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SECTION 1: PRODUCT IDENTIFICATION

Product Name: Manville Calcium Silicate Insulation
Generic Name: Calcium Silicate Thermal Insulation
Chemical Name: Calcium silicate

CAS#: Mixture/None assigned

Formula: Mixture

Hazard Label: Thermo-120

Manufacturer: Manville Sales Corporation
Address: P.O. Box 5108
Denver, CO 80217-5108

APR 06 1995

Telephone: 303/978-4900
Emergency: 1-800-424-9300

Trade Names:
Thermo-120; Thermo-120 Blue

By

SECTION 2: INGREDIENTS

Ingredient Name	CAS#	%	Exposure Limit(s)
Synthetic calcium silicate	1344-95-2	95	5 mg/m ³ respirable dust (OSHA) 15 mg/m ³ total dust (OSHA)
Gypsum	7778-18-9	2-3	5 mg/m ³ respirable dust (OSHA) 15 mg/m ³ total dust (OSHA)
Continuous filament fibrous glass strand	65397-17-3	1	1 fiber/cc. Manville Workplace Exposure Guideline 5 mg/m ³ respirable dust (OSHA) 10 mg/m ³ total dust (ACGIH)
Man-made organic fibers	None assigned	1	Not established
Pigment	None assigned	< 2	Not established
May contain crystalline silica as a contaminant	14808-60-7	< 0.1-0.5	0.1 mg/m ³ respirable quartz (OSHA)

SECTION 3: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Under normal conditions of use, this product is not expected to create any unusual emergency hazards.

Inhalation of excessive amounts of dust from this product may cause upper respiratory irritation and/or congestion - remove affected individuals to fresh air.

Skin irritation may be treated by gently washing affected area with soap and warm water.

Eye irritation may be treated by flushing eyes with large amounts of water. If irritation persists, contact a physician.

In the event of fire, use normal fire fighting procedures to prevent inhalation of smoke and gases from other products.

Health Hazards

Summary:

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing. Getting dust from this product on your skin may cause skin dryness. Getting dust in your eyes may cause eye irritation. Breathing large amounts of dust from this product may lead to other health effects as discussed in section 11 of this Material Safety Data Sheet.

Acute (short-term) health effects:

Dust from this product is a mechanical irritant, which means that it may cause irritation or scratchiness of the throat and/or itching of the eyes and skin. Dust from this product may also cause dry skin.

SECTION 5: FIRE FIGHTING MEASURES

Manville Calcium Silicate Insulation MSDS No.2002-01

Chronic (long-term) health effects:

This product may contain < 0.1 to 0.5% crystalline silica as a contaminant in the raw materials. Crystalline silica is considered a hazard by inhalation. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease. Crystalline silica has also been classified as a probable cause of cancer by the International Agency for Research on Cancer (IARC). Further studies are being conducted to determine the risk of cancer when working with crystalline silica products. More detailed information concerning the health effects of crystalline silica is presented in section 11 of this Material Safety Data Sheet.

Target Organs:

Lungs, throat, skin, and eyes.

Primary routes of entry (exposure):

Inhalation (breathing dust), skin, and eye contact.

Symptoms of Overexposure

Inhalation:

Irritation of the upper respiratory tract (scratchy throat, coughing, and congestion may occur in extreme exposures).

Skin Contact:

Temporary irritation, and dry skin may occur.

Skin Absorption:

Not applicable.

Ingestion:

May cause temporary irritation to the gastrointestinal tract (especially the stomach).

Eye Contact:

Temporary irritation (itching) or redness may occur.

SECTION 4: FIRST AID MEASURES

Inhalation:

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

Skin Contact:

Wash gently with soap and warm water.

Skin Absorption:

Not applicable.

Ingestion:

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. No chronic effects are expected following ingestion.

Eye Contact:

Do not rub or scratch your eyes. Dust particles may scratch the lens of the eye. Flush eyes with lots of water for 5-15 minutes. If irritation persists, contact a physician.

Notes to Physician:

This product is a mechanical irritant and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

SECTION 5: FIRE FIGHTING MEASURES

This material will not burn. Therefore, no special procedures are necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases from other burning materials.

SECTION 6: ACCIDENTAL SPILL/RELEASE MEASURES

Procedures for containing spill/leaks:

To minimize airborne dusts, vacuum spills. If sweeping is necessary, use a dust suppressant (such as water) - DO NOT DRY SWEEP DUSTS, OR USE COMPRESSED AIR FOR CLEAN-UP.

Waste Management:

Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA) (40 CFR 261). Comply with state and local regulations for disposal of calcium silicate, or crystalline silica containing products. States which include carcinogens in their definition of hazardous waste may consider this as containing this product hazardous.

SECTION 7: HANDLING AND STORAGE

Use protective equipment as described in section 8 when handling loose or unpackaged material.

Material should be kept dry, and protected from the elements until use to maintain desired product performance. Warehouse storage should be in accordance with package directions.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Summary:

Protective equipment should be provided as necessary to prevent irritation to the throat, eyes, and skin, and to keep exposures below the applicable exposure guidelines. Although crystalline silica may be present in trace amounts, the actual hazard from inhalation is from nuisance dusts. These recommendations will minimize potential risks associated with exposure.

Goggles:

or safety glasses with sideshields are recommended to keep dust out of your eyes.

Gloves:

Leather or cotton gloves should be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation.

Respirator:

Use a NIOSH approved dust/mist respirator to protect against inhalation of excessive amounts of dust. (Examples of NIOSH approved disposable dust/mist respirators for this type of exposure are the 3M 9900 and Moldex 2200 respirators). Some operations may generate airborne dust concentrations requiring a higher level of respiratory protection. For exposures exceeding ten times the established exposure limits, a NIOSH approved, half-mask respirator with High Efficiency Particulate Air (HEPA) filter cartridge should be used. (Examples of NIOSH approved respirators of this type are the MSA Comfo II with "H" cartridges, and the Survivair half-mask with #1030-00 cartridges).

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust levels below the applicable exposure limits.

Ventilation:

Local exhaust ventilation should be provided in areas of excessive dust concentrations to remove airborne dust. General dilution ventilation should be provided as necessary to keep airborne dust levels below the applicable exposure limits and guidelines.

The need for ventilation systems should be evaluated by a professional industrial hygienist while the design of specific ventilation systems should be conducted by a professional engineer.

Other:

Loose fitting, long sleeved clothing should be worn to protect skin from irritation. Exposed areas should be washed with soap and warm water after handling.

Special Considerations for repair/maintenance of contaminated equipment:

Use personal protective equipment as discussed above, vacuum equipment (where possible) before repair/maintenance to remove dust.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Pt. (°C/°F): Not applicable
Vap r Pressure (mmHg) : Not applicable
Specific Gravity
(water=1): 0.27
Vapor Density (Air=1): Not applicable
Total VOC (g/liter): Not applicable
Solids Content: Not applicable
Viscosity: Not applicable

Melting Pt (°C/°F): Not determined
Water Solubility(%): Nil
Evaporation rate (Butyl
Acetate=1): Not applicable
% Volatile by volume: 0
pH: Not applicable
Saturation in air (%): Not applicable

Appearance and odor:

Blue odorless solid pipe covering or block with mica flecks added as an additional visual marker to indicate this is an asbestos-free product.

SECTION 10: PHYSICAL AND CHEMICAL HAZARDS

Unusual Fire/Explosion Hazards:

None.

Reactivity:

This product is not reactive.

Hazardous Decomposition Products:

None determined.

SECTION 11: OTHER INFORMATION

Toxicological and Epidemiological Data

Acute Effects:

The primary acute health effects of this product include mechanical irritation of the skin and eyes, and skin dryness as a result of contact with amorphous silica.

The LD₅₀ and LC₅₀ (dose or concentration lethal to 50% of a population of test animals) for this product have not been determined.

Chronic Effects:

This product may contain < 0.1 to 0.5% crystalline silica as a contaminant in the raw materials. Crystalline silica is considered a hazard by inhalation. The International Agency for Research on Cancer (IARC) has classified crystalline silica as probably carcinogenic to humans (2A). This classification is based on the findings of laboratory animal studies (inhalation, injection, and implantation) that were considered sufficient, and data from epidemiological studies that were considered limited for carcinogenicity. Several studies have been conducted to determine the risk of cancer to workers exposed to dusts which contain crystalline silica. However, these studies did not consider other factors or elements that workers may be exposed to. Therefore, the causes of the excess deaths due to cancer could not be precisely determined. Further studies are being conducted to determine the risk of cancer when working with crystalline silica products. Excessive exposure to crystalline silica can cause silicosis.

Crystalline Silica has not been classified a carcinogen by NTP or OSHA.

References:

A detailed listing of references on crystalline silica health effects can be found in Manville's publication HSE-738R (Crystalline Silica Health and Safety Information) available free of charge from Manville. Major references used for the information contained in this MSDS are as follows:

IARC, "IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 42: Silica and Some Silicates," World Health Organization, Lyon, France, pp. 39-144 (1987).

IARC, "IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Supplement 7, Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs: Volumes 1 to 42," World Health Organization, Lyon, France, pp. 341-343 (1987).

Cooper, W.C. and G. Jacobson, "A 21-year Radiographic Follow-up of Workers in the Diatomite Industry," Journal of Occupational Medicine, 19:563-566 (1977).

Davis, L.K., et al., "Mortality Experience of Vermont Granite Miners," American Journal of Industrial Medicine, 4:705-723 (1983).

Disposal Considerations

In its original condition, this product is not regulated as a hazardous waste by the U.S. EPA under RCRA regulations. Consult local and state regulations for additional disposal requirements. States which include carcinogens in their definition of hazardous waste may consider wastes containing this product hazardous.

Transport Information

Not classified a hazardous material by the U. S. Department of Transportation.

Regulatory Information

Crystalline silica has not been classified a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA).

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**Manville Calcium Silicate Insulation
MSDS No.2002-01**

Crystalline silica (quartz) is listed as a hazardous material under the Hazard Communication and/or environmental protection regulations of the following states: California, Florida, Illinois, New Jersey, Pennsylvania, and Tennessee.

California Proposition 65 Listed Substances: Silica, crystalline silica (airborne particles of respirable size).

Crystalline silica is not listed as a hazardous substance or hazardous waste under the following U.S. federal regulations: SARA III sections 302 and 313; CERCLA.

This product, and its components are listed on the following chemical substance inventories: Toxic Substances Control Act Chemical Substances Inventory (TSCA Inventory)
Canadian Domestic Substances List (DSL)

This is a class D2A controlled product under Canadian WHMIS Regulations (based on the IARC 2A classification for crystalline silica).

Miscellaneous

For additional information concerning this product, contact the Manville Product Information Center at P.O. Box 5108, Denver, CO 80217-5108, or call toll-free (800)854-3103 (outside the U.S., call (303)978-4900).

MSDS Revision Summary

This Material Safety Data Sheet (MSDS) is issued to replace all previous versions of MSDSs covering the products indicated in section 1 of this sheet. MSDSs issued prior to ISSUE DATE for any products covered by this MSDS are no longer effect. This issue also reflects a major revision to the format and style of MSDS previously issued by Manville. All sections of the MSDS have been redesigned, and rewritten in an effort to communicate the hazards of this product more effectively.

Prepared for:
Manville Sales Corporation
P.O. Box 5108; Denver, CO 80217-5108

By: Manville Health, Safety & Environment Department

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation with respect to such information is intended or given.

---END OF MSDS 2002-01---

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