WRG-1508

GRACE

Construction Products Division

W.R. Grace & Co.
62 Whittemore Avenue
Cambridge, Mass. 02140

(617) 876-1400

April 6, 1987

Mr. Hans D. Rudolph
Technical Standards and Services Manager
Real Estate/General Services Division
Xerox Corporation
P. O. Box 1600
Stamford, CT 06904

Dear Mr. Rudolph:

Thank you for the opportunity for Dennis Boylan and me to meet with you last Friday on the Xerox Center Project in Santa Ana and discuss the issues raised concerning MONOKOTE® fireproofing.

MONOKOTE-4 and -5 should be considered asbestos free. When tested according to the United States Environmental Protection Agency (EPA) Interim Method for the Determination of Asbestos in Bulk Insulation Samples, no asbestos has been found in Monokote.

One of the components of MONOKOTE-4 and -5 is vermiculite, a naturally-occuring mineral that may contain tremolite in the ore body. Except for minute amounts, the tremolite is removed from the vermiculite during processing. It is this purified vermiculite which is used in the manufacture of all of Grace's vermiculite-containing products, including MONOKOTE-4 and -5.

Using sophisticated, state-of-the-art electron microscopy analysis, it may be possible to detect fibrous tremolite in MONOKOTE at levels below .001% (10 parts per million) by weight. Concerning this, I left with you copies of independent laboratory test results by Arthur D. Little, Inc. and Mt. Sinai Medical Center. These extremely low levels are characterized by experts as "totally insignificant".

The EPA and some individual states such as California and New Jersey, have stringent standards covering the spray-application of fireproofing materials. With levels below .001% (10 parts per million), MONOKOTE is more than 1000 times below the EPA standard, and more than 250 times below the more stringent state requirements.

The United States Occupational Safety and Health Administration (OSHA) regulates occupational exposure to airborne asbestos fiber and has recently established a Permissible Exposure Level (PEL) of 0.2 fibers/cc (8 hr. time weighted average) and an action level of 0.1 fibers/cc. Grace frequently monitors jobsite exposure levels for workers applying MONOKOTE and all tests performed show exposure levels substantially below the OSHA action level and, in fact, below levels which can be quantified with statistical reliability.

OSHA has further officially informed Grace that its asbestos regulations are not meant to be enforced for any products which contain de minimus levels of naturally-occuring tremolite where exposure levels to employees can be demonstrated to not exceed the OSHA action level. I gave you copies of this OSHA letter.

As you requested, I also enclose Grace's MSDS for MONOKOTE 4 and 5.

I trust that our meeting and the information provided in this letter will enable you to use GRACE products with the same confidence in their safety and performance as you have in the past. If there is anything further we may do, please do not hesitate to call.

Yours truly,

Robert H. Locke

RHL/acd
Enc.

Robert H. Locke
Marketing Director

MATERIAL SAFETY DATA SHEET

W. R. Grace & Co.
62 Whittemore Ave.
Cambridge, MA 02140

MSDS Number: Z-8303
Cancels: Z-144-2
Date Prepared: 9/24/86

Telephone Number for
Information and Emergency Response
(617) 876-1400
X-3140 or 3897

SECTION I - PRODUCT IDENTIFICATION

Trade Names and Synonyms: MONOKOTE; MK-4, MK-5

Chemical Name and Family: Lightweight Gypsum-Vermiculite Plaster

Formula: Blend of Gypsum Vermiculite, Cellulose and (in MK-5 only) Fiber Glass

CAS#: Not Applicable (mixture)

DOT Hazard Class/ID#/Label: Not Applicable

Reportable Quantity (RQ): Not Applicable

Surface Freight Classification: Wall Plaster

NPCA-HMIS Hazard Index:

- Health: 1*
- Flammability: 0
- Reactivity: 0
- Personal Protection: E

SECTION II- HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Ingredient (CAS#, Chemical & Common Names)	Percent by Weight	Exposure Limits OSHA	ACGIH
Total Dust (Gypsum may add up to 2% Quartz CAS# 14808-60-7)	Not Applicable	PEL = $\frac{30Mg/M3}{\% \text{ Quartz} + 2}$	TLV = $\frac{30Mg/M^3}{\% \text{ Quartz} + 3}$
Respirable Dust (Gypsum may add up to 2% Quartz CAS# 14808-60-7)		PEL = $\frac{10Mg/M^3}{\% \text{ Quartz} + 2}$	TLV = $\frac{10Mg/M^3}{\% \text{ Quartz} + 2}$

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point Not Applicable

Specific Gravity (H_2O = 1) 12-15 PCF (Dry Bulk Density)

Vapor Pressure (mm Hg.) None

% Volatiles None

Vapor Density (AIR = 1) Not Applicable

Evaporation Rate (Butyl Acetate = 1) Not Applicable

Solubility in Water Slight

pH Approximately neutral, variable with water source

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used) N. A. Flammable Limits None LEL UEL

Extinguishing Media Not Applicable

Special Fire Fighting Procedures None

Unusual Fire and Explosion Hazards None Known

SECTION V - REACTIVITY DATA

Stable: Yes
Conditions to Avoid: Not Applicable

Incompatability (Materials to Avoid): Prior to welding or cutting, MONOKOTE must be removed from steel surfaces in those immediate areas where direct exposure to excessive heat from the cutting or welding equipment is possible.

Hazardous Decomposition or Byproducts: Sulfur Dioxide SO_2 (Due to excessive heat from cutting or welding)

Hazardous Polymerization: Will not occur
Conditions to Avoid: Not Applicable

SECTION VI - HEALTH HAZARD DATA

(Include all known acute and chronic effects, signs, and symptoms of exposure and medical conditions generally aggravated by exposure)

Routes of Exposure:

Inhalation: Exposure to excessive airborne dust may cause coughing or sneezing. Long term exposure to Quartz Dust, which may be present up to 2%, can cause risk of silicosis, pneumoconiosis, dyspnea and decreased lung function.

Skin and Eye: Eye contact with dust may cause minor mechanical irritation. Direct eye contact with MONOKOTE Spray may cause physical injury. Prolonged or repeated skin contact may dry skin.

Ingestion: Not expected to be harmful.

Carcinogenicity According to NTP, IARC and OSHA: Not Applicable.

Emergency and First Aid Procedures:

In case of contact, immediately flush eyes with plenty of water. Do not rub eyes. Consult a physician.

If inhaled get fresh air. If symptoms persist consult a physician.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Warning Statements:

CAUTION!
Contains Vermiculite CAS# 1318-00-9, Gypsum CAS# 7778-18-9 and up to 2% Quartz CAS# 14808-60-7.
May be harmful if inhaled.
Long-term overexposure to airborne dust may cause silicosis or other lung disease.
May cause minor mechanical irritation to eyes. Direct contact with spray can damage eyes.
Floors in spray area may be slippery when wet.

Precautionary Measures:

Avoid creating dust.
Equip mixers with dust covers.
Provide ventilation and respiratory protection.
Wear eye protection to avoid contact with dust or spray.
Post "slippery when wet" signs where appropriate.

Steps to be Taken in Case Material is Released or Spilled:

Observe precautions noted above. Remove material for disposal.

Waste Disposal Method:

MONOKOTE waste is not defined as hazardous according to EPA (40 CFR § 261.3). Dispose of all waste in accordance with applicable federal, state and local regulations.

SECTION VIII - CONTROL MEASURES

Respiratory Protection (Specify Type): Wear an approved dust mask (NIOSH TC-21C-XXX) to prevent exposure above the limits specified above in Section II.

Ventilation

Local Exhaust: Exhaust fans may be necessary when mixing in enclosed areas.

Mechanical:

Special: Not Applicable.

Other: Not Applicable.

Protective Gloves: Work gloves or hand creams may prevent drying skin.

Eye Protection: Goggles are recommended where exposure to excessive dust or MONOKOTE spray is likely.

Other Protective Clothing or Equipment: Normal work clothes.

Work/Hygenic Practices: Use bag opening and disposal procedures which minimize dust release. Equip mixers with dust covers as referenced in the MONOKOTE Equipment Bulletin.

SUPPLEMENTAL INFORMATION

One of the components of this product is vermiculite, a naturally-occurring mineral that contains tremolite in the ore body. Except for trace amounts, the tremolite is removed from the vermiculite during processing. It is this purified vermiculite which is used in the manufacture of MONOKOTE; MK-4 and MK-5.

The EPA has stringent standards covering the spray-application of fireproofing materials. With levels below .001% (10 parts per million), MONOKOTE is more than 1000 times below the current EPA standard. MONOKOTE 4 and 5 are in full compliance with all current and proposed Federal regulations and standards, including the proposed EPA ban and phase-out of products containing commercially-added asbestos.

Using sophisticated, state-of-the-art electron microscopy analysis, it may be possible to detect fibrous tremolite in MONOKOTE at levels of .001% (10 parts per million) by weight or less. Copies of such independent laboratory test results by Arthur D. Little, Inc. and Mt. Sinai Medical Center are available upon request.

On June 20, 1986 the United States Occupational Safety and Health Administration (OSHA) established new stringent regulations regarding occupational exposure to airborne asbestos fibers including tremolite. OSHA regulations include a maximum Permissible Exposure Level (PEL) of 0.2 fibers/cc (8 hr. time weighted average) and an action level of 0.1 fibers/cc. Grace frequently monitors jobsite exposure levels for workers applying MONOKOTE; MK-4 and MK-5. All tests have shown exposure levels consistently below the OSHA action level.

OSHA has officially informed Grace that its asbestos regulations are not meant to be enforced for any products which contain "de minimus levels" of naturally-occurring tremolite where exposure levels to employees do not exceed the OSHA action level.

"THE DATA INCLUDED HEREIN ARE PRESENTED ACCORDING TO W. R. GRACE & CO.'S PRACTICES CURRENT AT THE TIME OF PREPARATION HEREOF, ARE MADE AVAILABLE SOLELY FOR THE CONSIDERATION, INVESTIGATION AND VERIFICATION OF THE ORIGINAL RECIPIENTS HEREOF AND DO NOT CONSTITUTE A REPRESENTATION OR WARRANTY FOR WHICH GRACE ASSUMES LEGAL RESPONSIBILITY. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW AND ENVIRONMENTAL PROTECTION."

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