

**W. R. GRACE**

**MATERIAL SAFETY DATA SHEET**

Product Name: VCX-202, 203, 204, 205, 254, 294, Molten Steel Insulation, Vermiculite Concentrate

MSDS ID Number: Z-01635

MSDS Date: 05/18/2004

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** VCX-202, 203, 204, 205, 254, 294, Molten Steel Insulation, Vermiculite Concentrate  
**MSDS Number:** Z-01635  
**Cancelled MSDS Number:** Z-01602  
**MSDS Date:** 02/27/2004  
**Chemical Family Name:** Enoree, South Carolina Vermiculite Concentrate; Magnesium-Aluminosilicate Mineral  
**Product Use:** Various Industrial Uses  
**Chemical Formula:**  $(\text{Mg,Ca,K,Fe}^{11})_3 (\text{Si,Al,Fe}^{\text{III}})_4 \text{O}_{10}(\text{OH})_2 \cdot 4(\text{H}_2\text{O})$   
**CAS # (Chemical Abstracts Service Number):** 01318-00-9  
**Manufactured by:**

W.R.Grace & Co.-Conn.  
62 Whittemore Avenue  
Cambridge, MA 02140

Grace Canada, Inc.  
294 Clements Road West  
Ajax, Ontario L1S 3C6

**In Case of Emergency Call:**

In USA: (617) 876-1400 In Canada: (905) 683-8561

**SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Ingredient</b>	<b>CAS#</b>	<b>Percent (max)</b>
Quartz	014808-60-7	1-10
Vermiculite	001318-00-9	50-100

**SECTION 3 - HAZARDS IDENTIFICATION**

**Emergency Overview:**

**Caution!**

Causes eye irritation.  
Causes skin irritation.  
Causes respiratory tract irritation.

**HMIS Rating:**

Health: 1  
Flammability: 0  
Reactivity: 0  
Personal Protective Equipment: E (See Section 8)

**Potential Health Effects:**

**Inhalation:**

Causes respiratory tract irritation.  
Effects include: Coughing, shortness of breath, wheezing and reduced pulmonary function from pneumoconiosis (dusty lungs).

**Eye Contact:**

Eye contact causes irritation.  
Prolonged eye contact can result in redness and itching.

**Skin Contact:**

Prolonged skin contact with Residual fuel oil contained on vermiculite  
May cause irritation and result in dermal sensitization.

**Skin Absorption:**

Not expected to be harmful if absorbed through the skin.

**Ingestion:**

Ingestion not expected to be harmful.  
Effects include: No other effects expected unless listed below.

**SECTION 4 - FIRST AID MEASURES:**

**Skin Contact:**

Wash with soap and water.  
If discomfort or irritation persists, consult a physician.  
Remove contaminated clothing and wash before reuse.

**Eye Contact:**

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Flush eyes with water for at least 15 minutes while holding eyelids open.

If discomfort or irritation persists, consult a physician.

**Ingestion:**

Adverse health effects are not expected if swallowed.

**Inhalation:**

If symptoms develop, get fresh air. If symptoms persist, consult a physician.

If breathing has stopped, give artificial respiration then oxygen if needed.

**SECTION 5 - FIRE AND EXPLOSION HAZARD DATA**

**Flash Point:** Not Applicable

**Flash Point Method:** Not Applicable

**Lower Explosion Limit:** Not Available

**Upper Explosion Limit:** Not Available

**Auto-Ignition Temperature:** Not Available

**NFPA Rating:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Extinguishing Media:** Not Applicable. Product will not burn.

**Special Fire Fighting Procedures:**

No special procedures specific to this product.

**Unusual Fire and Explosion Hazards:**

None unless noted below.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES:**

**Spills/Leaks:**

Carefully shovel or sweep up spilled material and place in suitable container for recycle or disposal.

Dampen with water spray or use other methods to clean spill which avoid creating dust. Discard empty packaging promptly. Avoid excessive handling of empty packaging, which may result in unnecessary release of airborne particulates.

**SECTION 7 - HANDLING AND STORAGE**

**Precautionary Measures:**

Avoid contact with eyes, skin and clothing.

Avoid creating and inhaling airborne dust or particulates.

Avoid water reactive chemicals.

Use only with adequate ventilation.

Wash clothing before reuse.

Provide respiratory protection if needed.

FOR PROFESSIONAL USE ONLY. KEEP OUT OF CHILDREN'S REACH.

**SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT**

**EXPOSURE GUIDELINES (US)**

Ingredient	ACGIH TLV			OSHA PEL			Other
	TWA	STEL	Ceiling	TWA	STEL	Ceiling	
Quartz	0.05 mg/m <sup>3</sup> TWA (respirable fraction)	-	-	0.1 mg/m <sup>3</sup> TWA (respirable dust)	-	-	-
Vermiculite	-	-	-	-	-	-	-

In addition to the exposure limits referenced above, the following non-specific limits for dust apply to this product; OSHA, 15 mg/m<sup>3</sup>-TWA or Total Dust and 5 mg/m<sup>3</sup>-TWA as Respirable Dust, ACGIH, 10 mg/m<sup>3</sup>-TWA as Total Dust and 3 mg/m<sup>3</sup>-TWA as Respirable Dust.

**EXPOSURE GUIDELINES (CANADA)**

Employers should consult local Provincial regulatory limits for exposure guidelines which may vary locally.

**Engineering Controls:**

Not generally required.

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**Personal Protective Equipment:**

**Respiratory Protection:** Respiratory protection may be desirable if dust is created in handling and is required at or above the Permissible Exposure Limits (PELs) specified.

**Skin Protection:** Gloves are recommended.

**Eye Protection:** Safety glasses or goggles should be worn.

**Work/Hygienic Practices:** Use good personal hygiene practices.

Quartz (Crystalline silica) is a naturally-occurring mineral that is commonly contained in materials that are mined from the earth's surface such as sand, limestone, clay and gypsum (Calcium sulfate). Total quartz is a value usually representing the combined fractions of large, nonrespirable sized particles and of respirable sized particles (less than ten microns in aerodynamic diameter). It is only the respirable fraction of total quartz that is recognized as hazardous by professionals in the field of Occupational Health and by most regulatory agencies. This product contains compounds subject to exposure guidelines and/or identified as carcinogens. (See Sections 8 and 11).

Grace has not been able to detect respirable sized quartz in vermiculite above the current Permissible Exposure Limit (PEL) during industrial hygiene sampling of workers at Grace production facilities. We believe that the highest potential for exposure exists at our production facilities due to the high volume of product produced and handled. In addition a wet sieving analysis combined with x-ray diffractometry has been conducted on vermiculite. Results indicate that respirable quartz is not present above the 0.1% by weight limit established by the Occupational Safety and Health Administration (OSHA) for carcinogens. OSHA states that if the hazardous substance is contained in the product below 0.1% by weight and exposures do not exceed permissible exposure limits, then the hazards do not apply.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Solid
<b>Appearance/Odor:</b>	Brown to golden brown in color. Flake shaped. No odor.
<b>Odor Threshold: (ppm)</b>	Not Determined
<b>pH:</b>	7.0 (In water)
<b>Vapor Pressure: (Mm Hg)</b>	Unknown
<b>Vapor Density: (Air = 1)</b>	Unknown
<b>Solubility In Water:</b>	Unknown
<b>Specific Gravity: (Water = 1)</b>	Not Available
<b>Evaporation Rate: (Butyl Acetate = 1)</b>	Unknown
<b>Boiling Point:</b>	>212°F/100°C
<b>Viscosity:</b>	Unknown
<b>Bulk Density: (Pounds/Cubic Foot)(Pcf)</b>	40-65
<b>% Volatiles (gr/L): (70°F) (21°C)</b>	Not Available

**SECTION 10 - STABILITY AND REACTIVITY**

<b>Chemical Stability:</b>	Stable
<b>Conditions To Avoid:</b>	Expanded Vermiculite is often used as a chemical absorbent. When contact with highly reactive chemicals or chemicals that can off-gas at temperatures above room temperature (such as Hydrogen peroxide solutions) care should be taken to neutralize or make these materials inert prior to absorption. If possible consult the MSDS or supplier of the material being absorbed.
<b>Hazardous Polymerization:</b>	Will not polymerize.
<b>Hazardous Decomposition Products:</b>	None known for this product.

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

**Ingredient(No data unless listed.)**                      **CAS Number**                      **LD50 and LC50**

**Carcinogenicity:**

Ingredient	IARC Group 1	IARC Group 2A	IARC Group 2B	NTP Known	NTP Suspect	OSHA
Quartz	Yes	No	No	No	No	Yes
Vermiculite	No	No	No	No	No	No

**Mutagenicity:** Not applicable.

**Teratogenicity:** Not applicable.

**Reproductive Toxicity:** Not applicable.

**SECTION 12 - ECOLOGICAL INFORMATION**

**Environmental Fate:** No data available for product.

**Ecotoxicity:** No data available for product.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

**Waste Disposal Procedures:**

Consult all regulations (federal, state, provincial, local) or a qualified waste disposal firm when characterizing waste for disposal. According to EPA (40 CFR § 261), waste of this product is not defined as hazardous. Dispose of waste in accordance with all applicable regulations.

According to US EPA (40 CFR § 261.3) waste of this product is not defined as hazardous.

**SECTION 14 - TRANSPORTATION INFORMATION**

**Proper Shipping Name:** Not Applicable

**UN/NA Number:** Not Applicable

**Domestic Hazard Class:** Nonhazardous

**Surface Freight Classification:** Crude Vermiculite Ore

**Label/Placard Required:** Not Applicable

**SECTION 15 - REGULATORY INFORMATION**

**REGULATORY CHEMICAL LISTS:**

**CERCLA (Comprehensive Response Compensation and Liability Act):**

**(None present unless listed below)**

**Chemical Name**                      **CAS #**                      **Wt %**                      **CERCLA RQ**

**SARA Title III (Superfund Amendments and Reauthorization Act)**

**SARA Section 312/Tier I & II Hazard Categories:**

Health Immediate (acute)                      No

Health Delayed (chronic)                      No

Flammable                      No

Reactive                      No

Pressure                      No

**302 Reportable Ingredients (Identification Threshold 1%):**

**Chemical Name**                      **CAS #**                      **Wt %**                      **SARA 302 TPQ**

**313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):**

**Chemical Name**                      **CAS #**                      **Wt %**

**National Volatile Organic Compound Emission Standards For Architectural Coatings:**

**Volatile Organic Content:** (gr/L)                      0

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**WHMIS Classification(s):** D-2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR). This MSDS contains all the information required by the CPR.

**State Regulatory Information:**

**California Proposition 65:** WARNING! This product contains substances known to the state of California to cause cancer, birth defects or other reproductive harm.

**Massachusetts Hazardous Substance List(Identification threshold 0.001%(1ppm)):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Quartz	014808-60-7	1

**New Jersey Hazardous Substance List(Identification threshold (0.1%)):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
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**Pennsylvania Hazardous Substance List(Identification threshold 0.01%):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
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**CHEMICAL INVENTORY STATUS:**

All chemicals in this product are listed or exempt from listing in the following countries:

<b>US</b>	<b>CANADA</b>		<b>EUROPE</b>	<b>AUSTRALIA</b>	<b>JAPAN</b>	<b>KOREA</b>	<b>PHILIPPINES</b>
TSCA	DSL	NDSL	EINECS/ELINCS	AICS	ENCS	ECL	PICCS
Yes	Yes	No	No	Yes	No	No	No

**SECTION 16 - OTHER INFORMATION**

**Non-Hazardous Ingredient Disclosure:**

<u>Chemical Name</u>	<u>CAS Number</u>
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Prepared by: EH&S Department  
 Approved by: EH&S Department  
 Approved Date: 05/18/2004

**Disclaimer:**

"The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the 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."