

U.S. DEPARTMENT OF LABOR
April 28, 1977 Occupational Safety and Health Administration

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME R. Grace & Company-Construction Products Division	EMERGENCY TELEPHONE NO. 1-617-876-1400 X 457
ADDRESS (Number, Street, City, State, and ZIP Code) Whittamore Avenue-Cambridge, MA 02140	
QUALITY ASSURANCE MANAGER	
TRADE NAME AND SYNONYMS VERMICULITE CONCENTRATE (Non-expanded) Size #4G	TRADE NAME AND SYNONYMS Vermiculite Concentrate-Kearney Mine
CHEMICAL FAMILY Sesquim Aluminosilicate Mineral	
FORMULA (Mg,Ca,K)-(Al,Fe,Mg)-(Si,Al) ₂ (OH) ₂ H ₂ O	

SECTION II - HAZARDOUS INGREDIENTS

contains less than 8% by weight of a naturally occurring mixture of amphibole contaminants; hornblende and tremolite. The predominant morphology of the contaminant platy (non-fibrous). OSHA Regulation 1910.1001 defines tremolite as asbestos. Less than 5% of the contaminant is in a form which can be fibrillated by physical handling to release airborne "asbestos fibers." Regulation 1910.1001 places a limit of 2 "asbestos fibers"/cc; 8 hour time weighted average and a maximum of 10 "asbestos fibers"/cc at any one time for airborne fiber exposure.

Normal physical handling given to vermiculite concentrate can create a nuisance dust level in excess of OSHA Standards. Due to the predominantly platy (non-fibrous) character of the tremolite contaminant, the dust has a negligible "asbestos fiber" concentration. Normal industrial dust control practices should be followed.

SECTION III - PHYSICAL DATA

MELTING POINT (°F)	NA	SPECIFIC GRAVITY (H ₂ O=1)	NA
VAPOR PRESSURE (mm Hg.)	NA	PERCENT VOLATILE BY VOLUME (%)	NA
DENSITY (AIR=1)	NA	EVAPORATION RATE (H ₂ O=1)	NA
SOLUBILITY IN WATER	Slightly soluble if any	Bulk Density lbs./c.f.	45-65
COLOR AND ODOR	Free flowing irregularly shaped flake-ranging in color from gold to dark gray.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA NOT APPLICABLE

FLASH POINT (Method used)	FLAMMABLE LIMITS	LM	UM
EXTINGUISHING MEDIA			
FIRE FIGHTING PROCEDURES			
ADDITIONAL FIRE AND EXPLOSION HAZARDS			

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SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	Dust respirable fraction 5 mgm/M ³ . Total dust 15 mgm/M ³ .
EMERGENCY AND FIRST AID PROCEDURES	NA

SECTION VI - REACTIVITY DATA NOT APPLICABLE			
STABILITY	UNSTABLE	CONDITIONS TO AVOID	
	STABLE		
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR		

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Dampen slightly or use other techniques which control airborne dust within the limits of Section V above.	
WASTE DISPOSAL METHOD	
Use disposal techniques which control airborne dust within the TLV limits of Section V above.	

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: If TLV is exceeded, use disposal respirator, Type TC-21C-132; 3M # 8710 or similar disposable or reusable respirator.

SECTION IX - SPECIAL PRECAUTIONS
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
OTHER PRECAUTIONS

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MANUFACTURER'S NAME W. R. Grace & Company-Construction Products Division	EMERGENCY TELEPHONE NO. 1-617-876-1400 X 457
ADDRESS (Number, Street, City, State, and ZIP Code) 62 Whittemore Avenue-Cambridge, MA 02140	Quality Assurance Manager
CHEMICAL NAME AND SYNONYMS VERMICULITE CONCENTRATE (Non-expanded) Size #4G	TRADE NAME AND SYNONYMS Vermiculite Concentrate-Libby Mine
CHEMICAL FAMILY Magnesium Aluminosilicate Mineral	FORMULA (Mg,Ca,K)-(Al,Fe,Mg)-(Si,Al) ₂ (OH) ₂ H ₂ O

SECTION II - HAZARDOUS INGREDIENTS

Contains less than 2.4 % by weight of a naturally occurring contaminant tremolite. OSHA Regulation 1910.1001 defines tremolite as asbestos. Some forms of tremolite are platy. Other forms can be fibrillated by physical handling to release airborne "asbestos fibers." Regulation 1910.1001 places a limit of 2 "asbestos fibers"/cc; 8 hour time weighted average and a maximum of 10 "asbestos fibers"/cc at any one time for airborne fiber exposure.

The normal physical handling given to vermiculite concentrate can create an airborne fiber level in excess of OSHA Standards. Compliance with standards can be assured by various methods: enclosure, exhaust ventilation and dust collection.

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (H ₂ O=1)	NA
VAPOR PRESSURE (mm Hg.)	NA	PERCENT VOLATILE BY VOLUME (%)	NA
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (____=1)	NA
SOLUBILITY IN WATER	Slight,	Bulk Density lbs./c.f.	45-65
APPEARANCE AND ODOR	Free flowing irregularly shaped flake-ranging in color from gold to dark grey.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA NOT APPLICABLE

FLASH POINT (Method used)	FLAMMABLE LIMITS	Let	Uet
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS			

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SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	
Airborne asbestos fiber 2f/cc T.W.A.-ceiling 10f/cc at one time.	
Dust respirable fraction 5 mgm/M ³ . Total dust 15 mgm/M ³ .	
EMERGENCY AND FIRST AID PROCEDURES	
NA	

SECTION VI - REACTIVITY DATA		NOT APPLICABLE
STABILITY	UNSTABLE	CONDITIONS TO AVOID
	STABLE	
INCOMPATIBILITY (Materials to avoid)		
HAZARDOUS DECOMPOSITION PRODUCTS		
HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID
	WILL NOT OCCUR	

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Dampen slightly or use other techniques which control airborne fibers and dust within the TLV limits of Section V above.	
WASTE DISPOSAL METHOD	
Use disposal techniques which control airborne fibers and dust within the TLV limits of Section V above. See OSHA Standard 1910.1001, Paragraph (h) (2) Waste Disposal.	

SECTION VIII - SPECIAL PROTECTION INFORMATION

See OSHA 1910.1001 - Controls such as isolation, enclosure, exhaust ventilation and dust collection shall be used if necessary, to meet exposure limits. Also, see OSHA Standard 1910.1001 Personal Protective Equipment for dealing with work environments in excess of exposure limits.

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	See OSHA Standard 1910.1001
OTHER PRECAUTIONS	