

**CARBORUNDUM****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 CHEMTREC Assist: 800-424-9300	716-278-2000	Flammability Health Reactivity Special Hazards 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant *-See Text 0 0 0 0
MSDS Number > 251/M0115		

MANUFACTURER: The Carborundum Company - Fibers Division**ADDRESS:** P.O. Box 808, Niagara Falls, New York 14302**PRODUCT IDENTIFICATION****TRADE NAME:****THREAD-LOC™ 2200 CERAMIC FIBER MODULE**

CAS NUMBER: NA
SYNONYM(S): CERAMIC FIBER; REFRACTORY FIBER; MMVF
CHEMICAL FAMILY: VITREOUS ALUMINOSILICATE FIBERS
MOLECULAR FORMULA: NA
MOLECULAR WEIGHT: NA
PRODUCT CODE: NA **HIERARCHY:** NA

PRODUCT HAZARD SUMMARY

HEALTH **WARNING!**
MAY BE HARMFUL IF INHALED
MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT
POSSIBLE CANCER HAZARD BASED ON TESTS WITH LABORATORY ANIMALS

FLAMMABILITY **NON-COMBUSTIBLE**

REACTIVITY **STABLE**

PRODUCT HEALTH HAZARD INFORMATION**INGESTION:**

May cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting and diarrhea.

SKIN:

SLIGHTLY TO MODERATELY IRRITATING. May cause irritation and inflammation due to

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mechanical reaction to sharp, broken ends of fibers.

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 or lung disease.

SPECIAL TOXIC EFFECTS:

Based on interim findings of two ongoing human health studies, there are no apparent respiratory effects in U.S. production workers which can be attributed to ceramic fiber exposure. A European cross sectional morbidity study of production workers showed no evidence of pulmonary fibrosis or progressive lung disease. A subliminal decline in respiratory function was reported in smokers and ex-smokers and correlated with some indices of fiber exposure.

Abdominal injections of ceramic fiber have produced peritonitis in hamsters and tumors in rats and hamsters. Injection of ceramic fiber into the pleural cavity of rats produced an occasional tumor. Such experiments utilize rigorous exposure techniques which by-pass the animal's normal protective and clearance mechanisms.

Intratracheal instillation studies in rats and hamsters produced no lung tumors. Long term animal inhalation studies employing sustained high level exposure have produced contradictory results. One study reported lung fibrosis and cancers in rats. A separate program conducted in rats and hamsters using longer, higher exposures reported no adverse effects with the exception of a single tumor in the lining of the lung (a mesothelioma) of one hamster. Interim results from a third program conducted at yet higher exposures have shown evidence of pulmonary and pleural changes (fibrosis) in rats and hamsters as well as the occurrence of mesothelioma in hamsters. No lung tumors have been seen in either rats or hamsters in this third program.

The International Agency for Research on Cancer (IARC) reviewed the carcinogenicity data on man-made mineral fibers (including ceramic fiber, glasswool, rockwool, and slagwool) in 1987. IARC classified ceramic fiber, fibrous glasswool and mineral wool (rockwool and slagwool) as possibly carcinogenic to humans (Group 2B). IARC's classification of ceramic fiber was based on sufficient evidence of carcinogenicity in experimental animals in the absence of data on the carcinogenicity of ceramic fibers to humans.

FIRST AID

INGESTION:

Do not induce vomiting. Get medical attention if irritation persists.

SKIN CONTACT:

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 affected person from source of exposure. Get medical attention.

PERSONAL PROTECTION INFORMATION

The following personal protective guidelines should be followed, especially where engineering controls (e.g. mechanical dust collection and other means of exhaust ventilation) are not technically feasible or do not reduce airborne fiber concentrations to below 2 fibers/cc.

EYE PROTECTION:

Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION:

Wear gloves, hats or full body clothing to prevent skin contact as necessary. Use separate lockers for work clothes to prevent fiber transfer to street clothes. Avoid taking unwashed work clothes home or provide disposable work clothing. Wash work clothes separately from other clothing. Rinse washing machine thoroughly after use. If clothing is to be laundered by someone else, inform launderer of proper procedures.

RESPIRATORY PROTECTION:

Perhaps the most effective methods of preventing airborne fiber is use of a properly designed and operated mechanical ventilation system. If potential exposures exceed our R.E. Guideline of two F/cc, personal protective equipment as described below should be used.

Use NIOSH or MSHA approved equipment when airborne exposure limits are exceeded. NIOSH/MSHA approved breathing equipment may be required for non-routine and emergency use. Ventilation may be used to control or reduce airborne concentrations. Acceptable respirators recommended for given airborne ceramic fiber concentrations are:

Concentration -----	Respirator Type -----
Up to 20 fibers/cc	Disposable dust respirators (such as 3M8710, 9900 or equivalent) or half-face, tight-fitting air-purifying respirator with HEPA filter cartridges.
Less than 20 fibers/cc to 100 fibers/cc	Full-face, tight-fitting cartridge respirator with HEPA filter cartridges.
Greater than 100 fibers/cc	Full-face, tight-fitting, positive pressure supplied air or powered air-purifying (PAPR) respirator.

OSHA approved air source required. Pending the results of long-term health effects studies, airborne exposures should be controlled at or below the Carborundum recommended exposure guidelines listed in the Ingredients/Health Information Section. If airborne fiber levels are not known, a half-face tight fitting respirator with disposable filter cartridges should be used.

PHYSICAL PROPERTIES

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

FIRE AND EXPLOSION DATA

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

BASIC FIREFIGHTING PROCEDURES:

Use extinguishing agent suitable for type of surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NA

REACTIVITY DATA

STABILITY/INCOMPATIBILITY:

Stable under normal conditions of use. Incompatible with hydrofluoric acid and concentrated alkali.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS:

NA

ENVIRONMENTAL INFORMATION

SPILL OR RELEASE TO THE ENVIRONMENT:

Where possible, use vacuum suction to clean up spilled material. Use dust suppressant where sweeping is necessary. Avoid clean up procedures that may result in water pollution. Personal safety and exposure recommendations described elsewhere in this data sheet apply to exposure during clean up of spilled material.

WASTE DISPOSAL:

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however it could be 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. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations at 40 CFR 262, 263, and 264 apply.

The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable Federal, state, and local regulations.

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: X Fire Hazard: Pressure Hazard: Reactivity Hazard:

ADDITIONAL ENVIRONMENTAL REGULATORY INFORMATION:

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

SPECIAL PRECAUTIONS/SUPPLEMENTAL INFORMATION

HANDLING/STORAGE:

Product which has been in service at elevated temperatures (greater than 1800 F) may undergo partial conversion to cristobalite, a form of crystalline silica which can cause severe respiratory disease--"Pneumoconiosis". 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. By definition a group 2A carcinogen is probably carcinogenic to humans. For crystalline silica, IARC's 2A classification was based on limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

The OSHA permissible exposure limit (PEL) for cristobalite is 0.05 mg/M3 (resp.). The ACGIH threshold limit value (TLV) for cristobalite is 0.05 mg/M3 (resp.) (ACGIH 1989-90). Particular care should be taken when working with "used" material to minimize generation of dust. Workers should use respiratory protection. When removing and handling ceramic fiber used in high temperature applications, special caution should be taken to avoid unnecessary cutting and tearing of the used material to minimize generation of airborne dust. Use NIOSH or MSHA approved equipment when airborne exposure limits may be exceeded, especially in confined areas with inadequate ventilation or other areas. Acceptable respirators recommended for given airborne cristobalite concentrations are:

Concentration -----	Respirator Type -----
Up to 20 fibers/cc and/or up to 10 times OSHA PEL for crystalline silica dust	Half-face, tight-fitting air-purifying respirator with HEPA filter cartridges.
Greater than 20 fibers/cc to 100 fibers/cc and/or 10 to 50 times OSHA PEL for crystalline silica dust	Full-face, tight-fitting cartridge respirator with HEPA filter cartridges.
Greater than 100 fibers/cc	Full-face, tight-fitting, positive

and/or over 50 times OSHA PEL
for crystalline silica dust

pressure supplied air or powered air-
purifying (PAPR) respirator.

Insulation surfaces should be lightly sprayed with H₂O 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 fiber of the work area. To aid the wetting process, a surfactant should be added to the water.

After RCF removal is completed, dust-suppressing cleaning methods, such as wet sweeping or wet 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 never be used. Dust-suppressing components can be used to clean up light dust.

TRANSPORTATION REQUIREMENTS

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

INGREDIENTS/HEALTH HAZARD INFORMATION

COMPONENT	CAS NO.	%	EXPOSURE LIMITS - REFERENCE
Aluminosilicate (vitreous)	NA	99.9-100	2 fibers/cc TWA (Carborundum);* 10 fibers/cc CL (Carborundum)*
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: 27-Jul-1990 REPLACES SHEETS DATED: 12-May-1989
COMPLETED BY: BP America Product Safety & Toxicology Department

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