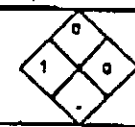


# MATERIAL SAFETY DATA SHEET

**EP** EAGLE-PICHER MINERALS, INC.

DATE ISSUED: November 18, 1985      DATE REVISED: May 1, 1988      REVISION NO: 5

## SECTION I: MATERIAL IDENTIFICATION AND USE

MATERIAL NAME: <b>Celatom SP</b>		<b>NFPA</b>  4 - Extreme 3 - High 2 - Moderate 1 - Slight 0 - Insignificant
MANUFACTURER'S NAME: <b>Eagle-Picher Minerals, Inc.</b>		
STREET ADDRESS: <b>8110 Pumas</b>		
CITY: <b>Reno</b>	STATE: <b>Nevada</b>	
EMERGENCY TELEPHONE NO.: <b>(702) 824-7800</b>		CHEMICAL FORMULA: <b>SiO2</b>
CHEMICAL NAME: <b>Diatomaceous Earth, Flux-Calcined</b>		TRADE NAME: <b>Celatom</b>
CHEMICAL FAMILY: <b>Silica</b>	MATERIAL USE: <b>Filter Aid</b>	

<b>HMIS</b>	• Health
	0 Flammability
	0 Reactivity
	2 Protective Equipment
* REFER TO DATA ON MSDS	

## SECTION II: HAZARDOUS INGREDIENTS OF MATERIAL

INGREDIENT IDENTIFICATION	APPROXIMATE CONCENTRATION %	C.A.S. NUMBERS	OSHA PEL (ACGIH TLV)	LD50/ LC 50 SPECIES AND ROUTE
Diatomaceous Earth, Flux-Calcined	100%	68855-64-9	See below	not available
Crystalline Silica (Cristobalite)	35-50%	14184-48-1	0.05 mg/m3 (0.05 mg/m3)	not available

For sampling silica dusts refer to NIOSH Analytical Method 7500 or OSHA method ID 142

## SECTION III: PHYSICAL DATA FOR MATERIAL

PHYSICAL STATE: <b>Solid</b>	ODOR AND APPEARANCE: <b>Odorless, White Powder</b>	SPECIFIC GRAVITY: <b>2.3</b>	BOILING POINT: <b>Not Applicable</b>
VAPOR PRESSURE (mm): <b>Not Applicable</b>	VAPOR DENSITY: <b>Not Applicable</b>	pH: <b>10 (10% Slurry)</b>	SOLUBILITY/WATER: <b>&lt;2%</b>
			FREEZING POINT: <b>Not Applicable</b>

## SECTION IV - FIRE AND EXPLOSION HAZARD OF MATERIAL

FLAMMABILITY:      YES      NO      X      IF YES, UNDER WHICH CONDITIONS

MEANS OF EXTINCTION: **n/a**      SPECIAL PROCEDURES: **Not Applicable**

## SECTION V - HEALTH HAZARDS

**SUMMARY:** Exposure to quantities of crystalline silica dust in excess of the OSHA PEL or the ACGIH TLV listed above is a known cause of silicosis, a progressive, sometimes fatal, lung disease. In 1987, the International Agency for Research on Cancer (IARC) issued Monograph 42, a review of "Silica and Some Silicates." Based on the conclusions in the Monograph (report), crystalline silica was rated in Category 2A as "probably carcinogenic to humans." Eagle-Picher Minerals, Inc., in conjunction with other members of the International Diatomite Producers Association (IDPA), has sponsored a study to examine the long term health effects among certain workers in the diatomaceous earth (DE) industry. The study was conducted by the University of Washington School of Public Health and Community Medicine and a final report was issued in October, 1992. The report concluded that there was an increase in non-malignant respiratory disease (NMRD) and lung cancer incidence among those DE workers studied when compared to national and regional populations (Standard Mortality Ratio of 2.59 and 1.43, respectively). The report further concluded that relatively intense exposures that occurred before the 1980's were probably the most important contributors to the increases in NMRD and lung cancer. In addition, data in the report indicated that improvements in the dust control in the industry appear to have abated any excess risk of silicosis and lung cancer in today's work environment. Eagle-Picher Minerals intends to continue to support meaningful research in the future through the IDPA. A Summary Report of the University of Washington study is available on request.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**  
 Pre-existing diseases of the upper respiratory tract and lung such as bronchitis, emphysema, and asthma

IMPORTANT HEALTH HAZARD DATA CONTINUES ON THE SECOND PAGE (BACK)

PAGE 2	MATERIAL NAME/IDENTIFIER: Celatom SP		
<b>SECTION V - HEALTH HAZARDS CONT'D</b>			
ROUTE OF ENTRY: Inhalation (Chronic)		TARGET ORGANS: Lungs	
EFFECTS OF ACUTE EXPOSURE TO PRODUCT: Upper respiratory irritant - May cause coughing or throat irritation			
EFFECTS OF CHRONIC EXPOSURE TO PRODUCT:			
<p>Inhalation of crystalline silica dust in excess of the Threshold Limit Value (TLV) recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) or in excess of the Permissible Exposure Limit (PEL) established by OSHA over an extended number of years may cause silicosis, a progressive sometimes fatal lung disease. Although silicosis is a non-cancerous lung disease, the recent study (October 1992) conducted by the University of Washington on certain diatomite workers indicates that exposure to high concentrations of crystalline silica for many years may increase the potential risk of developing lung cancer. The study also reports that for workers hired since 1990, no increase in lung cancer mortality risk was found. Consequently, maintenance of crystalline silica dust concentrations at or below levels specified by occupational standard setting agencies will minimize, if not eliminate, any potential risk of NMRD or lung cancer.</p> <p>IARC - Class 2A ("Probably carcinogenic to humans")  MTP - "Silica, crystalline (respirable)" - "reasonably anticipated to be a carcinogen"  OSHA - has not classified crystalline silica as a carcinogen</p>			
<b>SECTION VI - REACTIVITY DATA</b>			
CHEMICAL STABILITY:		INCOMPATIBILITY TO OTHER SUBSTANCES	
YES	X	NO	
		YES X NO IF YES, WHICH ONES? Hydrofluoric Acid Products containing Silica may react violently with Hydrofluoric Acid	
REACTIVITY AND UNDER WHAT CONDITIONS: Not Applicable		HAZARDOUS DECOMPOSITION PRODUCTS: Not Applicable	
<b>SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE</b>			
PERSONAL PROTECTIVE EQUIPMENT:			
<p>Bureau of Mines or NIOSH approved respirators for protection against pneumoconiosis producing dusts recommended when dust is present. If the dust concentration is less than ten (10) times the Permissible Exposure Limit (PEL) use quarter or half mask respirator with replacement dust filter or single use dust respirator with valve. If dust concentration is greater than ten (10) times and less than one hundred (100) times the PEL use full facepiece respirator with replaceable dust filter; if greater than one hundred (100) and less than two hundred (200) times the PEL use power air-purifying (positive pressure) respirator with replaceable filter; if greater than two hundred (200) times the PEL use type C, supplied-air respirator, continuous flow type (positive pressure), with full facepiece, hood, or helmet.</p>			
GLOVES:	Not normally necessary	RESPIRATORY:	None Above
FOOTWEAR:	Not necessary	EYE:	Goggles to protect from dust
CLOTHING:	Not normally necessary	ENGINEERING CONTROLS (E.G. VENTILATION, ENCLOSED PROCESS.): Local - Control within recommended TLV/PEL. Refer to ACGIH publication "Industrial Ventilation" or similar publications for design of ventilation systems.	
LEAK AND SPILL PROCEDURE: Vacuum clean spillage, wet sweep or wash away. Avoid creating dust.			
WASTE DISPOSAL: Non-Biodegradable. Use solid waste disposal common to landfill type operations or in slurry to sumps. Not considered a hazardous waste under RCRA (40CFR Part 261)			
HANDLING PROCEDURES: Avoid creating dust. Repair or properly dispose of broken bags			
STORAGE REQUIREMENTS: Store in a dry place to maintain product quality			
SPECIAL SHIPPING INSTRUCTIONS: None			
<b>SECTION VIII - FIRST AID MEASURES</b>			
SKIN: Not absorbed by the skin. May cause dryness. Use moisture renewing lotions if dryness occurs.			
EYE: May cause irritation or inflammation. Wash with generous quantities of water. Consult physician if irritation persists.			
INHALATION: Acute inhalation can cause dryness of the nasal passages and congestion of the upper respiratory tract. Remove to fresh air.			
INGESTION: Short-term exposure not considered harmful. Drink generous amounts of water to reduce bulk and drying effects			
<b>SECTION IX - PREPARATION DATE OF M.S.D.S.</b>			
PREPARED BY:	Patrick T. Flynn, Jr.	TITLE	Director of Research and Environmental Affairs
PHONE NUMBER:	(703) 824-7690 775	DATE	May 1, 1998