Vanderbilt Minerals, LLC
A Wholly Owned Subsidiary of R.T. Vanderbilt Holding Company, Inc.

Material Safety Data Sheet

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English

1 . Product and company identification

Product name PYRAX® HS

Supplier/Manufacturer
Vanderbilt Minerals, LLC
30 Winfield Street
Norwalk, CT 06855

In case of emergency
Call: 1-203-295-2140
Chemtrec: 1-800-424-9300
Outside US:
+1-703-527-3887

Synonym Pyrophyllite

Chemical Name Hydrated aluminum silicate mineral

Material uses Additive/filler ceramics, paint, etc.

RTV Material # 33207

2 . Hazards identification

Emergency Overview WARNING! Cancer Hazard. Contains quartz which can cause cancer. Risk of cancer depends upon duration and level of exposure. Not an acute hazard. May cause mechanical eye or skin irritation in high concentrations. Prolonged inhalation may cause lung injury.

Routes of Entry Ingestion. Inhalation.

Potential acute health effects

Inhalation Inhalation of high concentrations may cause mechanical irritation and discomfort. Repeated exposure may cause chronic effects.

Ingestion Not an ingestion hazard.

Skin Possible mechanical skin irritation. Not absorbed through skin. Possible granuloma formation in open wounds (requires repeated, massive applications).

Eyes May cause mechanical irritation.

Remarks No additional remark.

Potential chronic health effects

Target organs Pulmonary System (chronic risk).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	% by weight	TLV/PEL
quartz	14808-60-7	50 - 60	**OSHA PEL (United States).** TWA respirable fraction formula: 10 mg/m^3/ % SiO_2 +2 **ACGIH TLV (United States).** TWA 0.025 mg/m^3 from respirable fraction
pyrophyllite	12269-78-2	<40	**OSHA PEL (United States).** TWA: 15 mg/m^3 total dust; 5 mg/m^3 respirable dust (PNOR) **ACGIH TLV (United States).** TWA: 10 mg/m^3 total dust; 3 mg/m^3 respirable dust (PNOS)
mica	12001-26-2	18 - 25	**OSHA PEL (United States).** TWA 3 mg/m^3 from respirable fraction **ACGIH TLV (United States).** TWA 3 mg/m^3 from respirable fraction

3 . Composition/information on ingredients

kaolin clay	1332-58-7	5 - 10	**OSHA PEL (United States).** TWA 5 mg/m^3 from respirable fraction **ACGIH TLV (United States).** TWA 2 mg/m^3 from respirable fraction

4 . First aid measures

Eye contact Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Skin contact Wash off with water.

Inhalation Allow the victim to rest in a well ventilated area if high concentration is inhaled and mechanical irritation or discomfort occurs. Seek medical attention if irritation persists.

Ingestion Unlikely to be toxic by ingestion.

5 . Fire-fighting measures

Flammability of the product Non-flammable.

Flash point Not applicable.

Auto-ignition temperature Not applicable.

Flammable limits Not applicable.

Hazardous combustion products Not applicable.

Fire hazards in the presence of various substances Not considered to be flammable. Product will not burn, use appropriate extinguishing media for surrounding fires.

6 . Accidental release measures

Small spill Use a vacuum to clean up spillage. If appropriate, use gentle water spray to wet down and minimize dust generation. Place in a sealed container. Material will become slippery when wet.

Large spill Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminant surface and dispose of according to local and regional authority requirements. Avoid excessive dust generation. Use respiratory protection in high dust condition.

7 . Handling and storage

Handling and storage Avoid generating dust. Use respiratory protection in the absence of adequate engineering controls. Keep containers closed when not in use. Clean up spills promptly (see spill procedure). No special storage considerations. Handle in ways which minimize dust generation.

8 . Exposure controls/personal protection

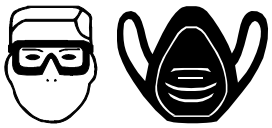
Engineering measures Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below established levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaiminants below the exposure limit.

If local exhaust ventilation is used, a capture velocity of 150-200 fpm is recommended.

Personal protection Splash goggles. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. No special skin protection should be required. However, if irritation is experienced, use gloves and/or other skin covering.

Personal protective equipment (Pictograms)

8 . Exposure controls/personal protection



9 . Physical and chemical properties

Physical state	Solid. [Powdered solid.]
Color	White to tan.
Odor	None known.
Molecular weight	Not applicable.
pH	6.9 [Conc. (% w/w): 10%]
Boiling/condensation point	Not available.
Melting/freezing point	Not available.
Specific gravity	
Vapor pressure	Not available.
Vapor density	Not available.
Volatility	0% (v/v)
Evaporation rate	Not available.
Dispersibility properties	Not available.
Solubility	Insoluble in the following materials: cold water.

10 . Stability and reactivity

Stability	The product is stable.
Instability temperature	Not applicable.
Conditions of instability	Not available.
Incompatibility with various substances	No incompatible product according to our database.
Corrosivity	Not available.

11 . Toxicological information

Acute effects

See Hazards Identification (section 2)

Chronic effects

Carcinogenic effects	See summary below.
Mutagenic effects	None known.
Teratogenic effects	None known.
Developmental toxicity	None known.
Conclusion/Summary	PYROPHYLLITE: In the absence of crystalline silica, pyrophyllite can cause a low category pneumoconiosis (with little respiratory disability) in prolonged, high dust concentrations. KAOLIN: Published literature suggests that extremely high exposures to kaolin dust over a prolonged period of time can lead to a low category pneumoconiosis (with little respiratory disability) in a small number of workers. CRYSTALLINE SILICA: Overexposure to respirable crystalline silica dust can cause silicosis, a form of progressive pulmonary fibrosis. "Inhalable" crystalline silica (quartz) is listed by IARC as a Group I carcinogen (lung) based on "sufficient evidence" in occupationally exposed humans and sufficient evidence in animals. Crystalline silica is also listed by the NTP as a known human carcinogen. Some studies have not demonstrated a cancer association and controversy exists concerning the IARC and NTP

11 . Toxicological information

classification.

Excessive exposure to any dust may aggravate pre-existing respiratory conditions.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
quartz	A2	1	-	+	Proven.	-
kaolin clay	A4	-	-	-	-	-

12 . Ecological information

Ecotoxicity None known.

Products of biodegradation None known.

Toxicity of the products of biodegradation None known.

Special remarks on the products of biodegradation Not available.

13 . Disposal considerations

Waste information Not a US RCRA hazardous waste. Dispose of in accordance with state and local regulations.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

15 . Regulatory information

United States

OSHA/HCS status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.
SARA 302/304/311/312 hazardous chemicals: Quartz (SiO2); MICA; KAOLIN
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Quartz (SiO2): Immediate (acute) health hazard, Delayed (chronic) health hazard; MICA: Immediate (acute) health hazard; KAOLIN: Delayed (chronic) health hazard

State regulations

Massachusetts Substances: The following components are listed: SILICA, CRYSTALLINE, QUARTZ; MICA; KAOLIN

Minnesota Hazardous Substances: The following components are listed: KAOLIN

New Jersey Hazardous Substances: The following components are listed: SILICA, QUARTZ; MICA

15 . Regulatory information

Pennsylvania RTK Hazardous Substances: The following components are listed: QUARTZ (SIO2); KAOLIN

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
quartz	Yes.	No.	No.	No.

Canada inventory: All components are listed or exempted.

Europe inventory: All components are listed or exempted.

International lists:
Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

16 . Other information

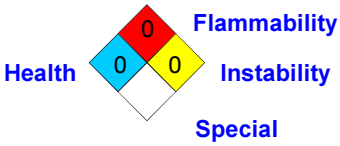
Other special considerations: Airborne sampling for respirable quartz during mining, processing and bagging of this product routinely reflects concentrations ranging from below detection limit to 0.1 mg/m^3 over an 8 hour work shift. Levels at and below 0.05 mg/m3 are typical. Use of this product is unlikely to produce respirable quartz concentrations above these levels.

Hazardous Material Information System (U.S.A.)

Health	*	1
Flammability		0
Physical hazards		0
Personal protection		E

*** Chronic Potential**

National Fire Protection Association (U.S.A.)



The customer is responsible for determining the PPE code for this material.

Date of printing: 12/21/2012.

Date of issue: 1/1/2013.

Date of previous issue: No previous validation.

Information contact: **Corporate Risk Management**
1-203-295-2143

Indicates information that has changed from previously issued version.

Visit www.vanderbiltminerals.com for more information.

Notice to reader

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