

February 5, 1973

Mr. Frank S. Bilton
Director of Purchases
Foseco, Inc.
P. O. Box 8728
Cleveland, Ohio 44135

Dear Mr. Bilton:

Thank you for your letter of February 2, 1973 requesting information on Wollastonite. Studies by our insurance carrier and the Department of Industrial Hygiene indicate that there is less than 1% free silica in Wollastonite. Attached is the completed Material Safety and Health Data sheet that you requested. If we can be of further help, please contact us.

Very truly yours,

INTERFACE CORPORATION
Wollastonite Division

[Signature]
R. C. Roderhiser
Plant Manager

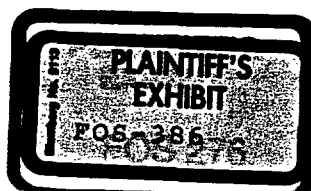
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Enc.

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FOS-00-000000255:



MATERIAL SAFETY & HEALTH DATA SHEET

Definition of a Hazardous Material

A hazardous material has one or more of the following characteristics: (1) has a flashpoint below 100° F., closed cup, or subject to spontaneous heating; (2) has a threshold limit value below 500 ppm for gases and vapors, below 500 mg/m³ for fumes, and below 25 mg/m³ for dusts; (3) a single dose oral LD₅₀ below 500 mg/kg; (4) is subject to polymerization with the release of large amounts of energy; (5) is a strong oxidizing or reducing agent; (6) causes first degree burns to skin in short time exposure, or is systematically toxic by skin contact; or (7) in the course of normal operation, may produce dusts, gases, fumes, vapors, mists, or smokes which have one or more of the above characteristics.

SECTION I

MANUFACTURER'S NAME	INTERSTATE CORPORATION	EMERGENCY TELEPHONE NO.	512-432-4262
ADDRESS (Street, Rural, City, State, and ZIP Code)	PO BOX 1000, WILSON, NEW YORK 12206		
CHEMICAL NAME AND SYNONYMS	TRIMETHYL AND DIMETHYL SILSESQUOXIDE		
CHEMICAL FAMILY	SILSESQUOXIDE	FORMULA	CSi ₂ O ₂

SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	TLV (ppm)	ALLOY AND METALLIC COATINGS	TLV (ppm)
PIGMENTS		BASE METAL	
CATALYST		ALLOYS	
VEHICLE		METALLIC COATINGS	
SOLVENTS		FILLER METAL	
ADDITIVES		PLATE COATING OR CORE FLUX	
OTHERS		STRAKES	
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES			TLV (ppm)
NONE			

SECTION III PHYSICAL DATA

BOILING POINT (°F.)	2300	SPECIFIC GRAVITY (H ₂ O = 1)	2.90
VAPOR PRESSURE (mm Hg.)		PERCENT VOLATILE BY VOLUME (%)	0.90
VAPOR DENSITY (AIR = 1)		EVAPORATION RATE	
SOLUBILITY IN WATER	0.0005 gm/100cc		
APPEARANCE AND COLOR	White powder, colorless		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLAMMABLE LIMITS (LFL - UFL)		FLAMMABLE LIMITS	LFL	UFL
EXTINGUISHING MEDIA				
SPECIAL FIRE FIGHTING PROCEDURES				
SPECIAL TOXIC AND EXPLOSION PRECAUTIONS				

SECTION V HEALTH HAZARD DATA

HAZARDOUS INGREDIENT NAME 50 mg/ml
 DUE TO ACICULARITY OF CRYSTAL, PROLONGED PHYSICAL CONTACT MAY CAUSE SKIN IRRITATION. NEEDLES CAUSE A PRICKLY SENSATION ON SOME PEOPLE'S SKIN.
 FIRST AID PROCEDURES Wash with warm soapy water. Use of gloves or barrier cream recommended for those subject to irritation.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE	CONDITIONS TO AVOID
	STABLE	X

INCORPATABILITY (Materials to avoid)

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS DECOMPOSITION	MAY OCCUR	CONDITIONS TO AVOID
S	WILL NOT OCCUR	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Insert dry powder - may be swept or shovelled

WASTE DISPOSAL METHOD
Stable - may be thrown on waste dumps, buried or spread on ground. Excellent soil additive.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE CLOVES <u>See section IV</u>		EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OTHER SPECIAL NOTES

Complete and return promptly to:

PO-800, INC.
 2000 Sheldon Rd.
 Lakewood, Ohio 44142

Signature

Plant Manager

1445

Title

2/5/77

Date

FOS-00-0000002553



INDUSTRIAL MINERALS INFORMATION

DATA SHEET INTERPACE WOLLASTONITE

offers the following advantages to manufacturers of Ceramics, Paints, Plastics, and other Products:

LOW OIL AND WATER ABSORPTION • GOOD ELECTRICAL PROPERTIES • VERSATILITY OF APPLICATION
UNIFORMITY • ACICULAR STRUCTURE • BRILLIANT WHITENESS • LARGE, AVAILABLE RESERVES

GENERAL DESCRIPTION OF WOLLASTONITE

Wollastonite, a natural occurring calcium silicate, is theoretically almost pure, and has a remarkable chemical and physical uniformity. Reserves at the INTERPACE deposit are conservatively estimated at 15 million tons. INTERPACE is currently producing six grades of Wollastonite at its plant in Willsboro, New York. Thorough quality control procedures at the plant insure uniform production of all grades.

PROPERTIES OF WOLLASTONITE

Chemical Formula	CaSiO ₃
Molecular Weight	116
Crystalline Structure	acicular
Specific Gravity	2.9
Coefficient of Expansion (mm/°C)	6.5×10^{-6}
Refractive Index	1.63
Transition Point (to pseudo-Wollastonite, °C)	1200
Melting point (°C)	1540
Solubility in H ₂ O (gm/100 cc)	0.0085
Hardness (Mohs' scale)	4.5
Color	Brilliant White
Weight (lbs./solid gallon)	24.2
Bulking Value (gal./lb.)	0.0413
pH (10% slurry)	9.9
Moisture Content (per cent)	0.5

CHEMICAL ANALYSIS

SiO ₂	50.90 %
CaO	46.90
FeO	.56
Al ₂ O ₃	.25
MnO	.10
MgO	.10
TiO ₂	.06
Loss on Ignition	.90
	99.75 %

WHERE TO USE WOLLASTONITE

Wollastonite CaSiO₃ is a natural calcium silicate used in many industries. Among these uses are:

CERAMICS naturally fritted source of lime and silica for glazes and tile bodies
PAINTS fibrous extender to improve leveling and cut oil costs, control pH, and lower glass
WELDING FLUX in welding rod coating and machine welding
PLASTICS reinforcement fiber and extending agent
CEMENTS fibrous extender
WALLBOARD fibrous extender
GLASS volatile-free calcium and silica source
SOIL CONDITIONERS fibrous alkaline material

FIBER GRADE OF WOLLASTONITE



Wollastonite is the only pure white mineral available commercially which is wholly fibrous. Fiber lengths average 13 to 15 times the diameter, which are produced to take special

1446

F05-00-0000022554

Wollastonite file

INTERPACE
U.S. Price List
Wollastonite

JANUARY 15, 1971

Prices subject to change without notice

What is Wollastonite? It is calcium metasilicate, a glazing white mineral ore. The main body of INTERPACE Wollastonite ore is located near Willsboro, New York and is believed to be the largest deposit in the United States. Geological surveys confirm a deposit of at least 15 million tons. When processed, Wollastonite cleaves into needle-shaped particles.

Technical questions. INTERPACE maintains a technical service laboratory and engineering personnel qualified to answer questions regarding applications of Wollastonite. INTERPACE's sales representatives are also technically trained, but do spend a major portion of their time in the field. If your local sales representative is out, or when urgent questions or problems

related to unusual applications arise, please feel free to call Wollastonite Product Sales Manager, Willsboro, New York, telephone: Area Code 518-963-1262.

For complete information about Wollastonite we invite you to write, INTERPACE CORPORATION, Willsboro, New York 12996.

How to order. Wollastonite is available in 50 lb. kraft paper bags or bulk rail carload. Six different grades are manufactured. It can be shipped directly from the Willsboro, New York plant in carload or truckload lots. Lesser quantities are usually less expensive if ordered from an agency as listed below:

D.H. Litter Company, Inc.
30 Lowell Junction Road
Bedfordville, Massachusetts 01810

D.H. Litter Company, Inc.
116 E. Sixteenth Street
New York, New York 10035

Harwick Standard Chemical Co.
1758 Monroe Drive, N.E. Box 17535
Atlanta, Georgia 30324

Harwick Standard Chemical Co.
60 South Seiberling Street
Akron, Ohio 44300

Harwick Standard Chemical Company
800 Estes Avenue
Elk Grove Village, Illinois 60007

Harwick Standard Chemical Company
Industrial Drive, P.O. Box 5053
Trenton, New Jersey 08638

Harwick Standard Chemical Company
7225 Paramount Blvd.
Pico Rivera, California 90660

Harwick Standard Chemical Company
1485 Bayshore Blvd.
San Francisco, California 94124

Van Waters and Rogers, Inc.
P.O. Box 34749
Dallas, Texas 75234

Van Waters and Rogers, Inc.
P.O. Box 14500
Houston, Texas 77021

GRADES OF WOLLASTONITE (cost per ton)
(c.o.b. Willsboro Plant)

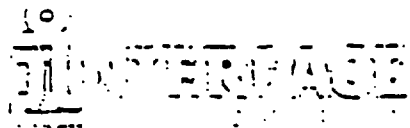
By volume	P-1 Med. Paint Fine Ceramic	P-4 Fine Paint	F-1 Medium Fiber	C-1 Medium Ceramic	C-6 Coarse Ceramic	C-101 General All Purpose
Bulk Carload	\$29.00	\$39.80	\$36.20	\$27.00	\$26.00	\$24.50
Carload or truckload, bagged	\$33.00	\$43.80	\$40.20	\$31.00	\$30.00	\$28.50
10,000 lb. - min. T/L	\$37.00	\$47.80	\$44.20	\$35.00	\$34.00	\$32.50
2,000 lb. - 9950 lb.	\$47.00min.	\$57.80min.	\$54.20min.	\$45.00min.	\$44.00min.	\$42.50min.

Terms: net 30 days

Packing: 50 Pound bags

Add \$2.00/ton for special bag marks
if more than one stencil line is
required.

Pallet prices: Pallets (cardboard) disposable \$.75 ea.
Disposable wood (single face) \$3.00 ea.
Reusable wood (double face) \$4.75 ea.
Styrofoam \$2.00 ea.



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PROPERTIES OF WOLLASTONITE

Chemical Formula	CaSiO_3
Molecular Weight	118
Crystalline Structure	acicular
Specific Gravity	2.9
Coefficient of Expansion (mm/°C)	6.5×10^{-6}
Refractive Index	1.63
Transition Point	
to pseudo-Wollastonite, °C	1200
Melting point, °C	1540
Solubility in H_2O (gm/100 cc)	0.0025
Hardness (Mohs' scale)	4.5
Color	Brilliant White
Weight (lbs./solid gallon)	24.2
Bulking Factor (gal./lb.)	0.0413
pH (10% slurry)	9.9
Moisture Content (per cent)	0.5

CHEMICAL ANALYSIS

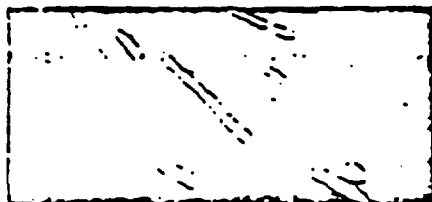
SiO_2	50.90 %
CaO	46.90
FeO	.55
Al_2O_3	.25
MnO	.10
H_2O	.10
TiO_2	.05
Loss on Ignition	.30
	99.75 %

WHERE TO USE WOLLASTONITE

Wollastonite CaSiO_3 is a natural calcium silicate used in many industries. Among these uses are:

CERAMICS naturally fritted source of lime and silica for glazes and tile bodies
PAINTS fibrous extender to improve leveling and cut oil costs, control pH, and lower glass
WELDING FLUX in welding rod coating and machine welding
PLASTICS reinforcement fiber and extending agent
CEMENTS fibrous extender
WALBOARD fibrous extender
GLASS volatile-free calcium and silica source
SOIL CONDITIONERS fibrous alkaline material

FIBER GRADE OF WOLLASTONITE



Wollastonite is the only pure white mineral available commercially which is wholly fibrous. Fiber lengths average 13 to 15 times the diameter, which are produced to take full advantage of the natural acicularity of Wollastonite.

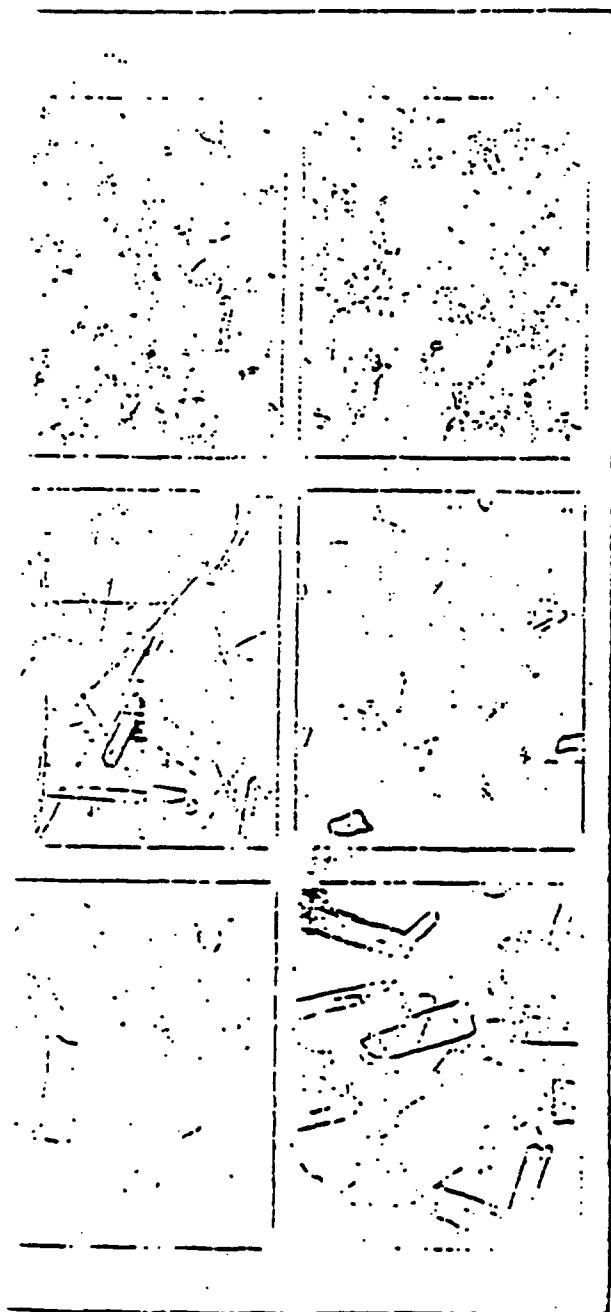
TYPICAL VALUES OF WOLLASTONITE BY GRADE

GRADE	P-4	P-1	C-1	C-6	C-101	F-1
Average Particle Size by Fisher Sub-Sieve Sizer	3.0	4.0	5.7	8.0	-	8.2
Particle Size Distribution by Sieve Analysis*						
Per Cent Minus 20 Mesh (840 Microns)					77.4	
Per Cent Minus 35 Mesh (500 Microns)					48.5	
Per Cent Minus 45 Mesh (350 Microns)					31.0	
Per Cent Minus 70 Mesh (210 Microns)					15.0	
Per Cent Minus 100 Mesh (149 Microns)					8.6	
Per Cent Minus 200 Mesh (74 Microns)				97.7	1.5	72.2
Per Cent Minus 325 Mesh (44 Microns)	99.9	99.8	96.5	-	-	-
By Sedimentation						
Cumulative Per Cent Minus 20 Microns	97	92	70	60	-	45
Cumulative Per Cent Minus 10 Microns	74	60	42	33	-	22
Cumulative Per Cent Minus 5 Microns	48	34	24	20	-	13
Cumulative Per Cent Minus 3 Microns	35	24	17	15	-	9
Cumulative Per Cent Minus 1 Micron	17	12	11	10	-	7
50% Median Size (Microns)	5.5	9.9	13	16	-	22
Bulk Density (lbs./cu. ft.)						
Loose	45	45	53	57	80	27
Tapped	71	74	80	92	93	52
Oil Absorption (Rub-Out, lbs./100 lbs.)	23.5	25	24.5	22.5	-	45.5
Brightness (G.E.)	93.0	92.7	91.9	90.6	-	84.4

*C-101 by Dry-Sieve—All others by Wet-Sieve

PACKAGING AND SHIPPING

All grades of Wollastonite are packed in multi-wall 50 pound bags. At request, bags are printed with customer identifications. Rapid and efficient delivery of Wollastonite shipments is made at all times.



What

WOLLASTONITE is

Wollastonite is a natural mineral identified chemically as calcium metasilicate CaSiO_3 . It is extremely white, and has acicular shaped particles. High strength imparted to finished products results from uniform fibers with length for some grades averaging 13 to 15 times diameter. It has a high melting point of 2830°F. which contributes to its versatility and diversified uses.

Properties

of WOLLASTONITE

PHYSICAL

Chemical formula	CaSiO_3
Molecular weight	116
Crystalline shape	Acicular
Specific gravity	2.9
Coefficient of expansion (mm/°C)	6.5×10^{-5}
Refractive index	1.63
Transition point (to pseudo WOLLASTONITE, °C)	1200
Melting point (°C)	1540
Solubility in water (gm/100 cc)	0.0095
Hardness (Mohs' scale)	4.5
Color	Brilliant White
Weight (lbs./solid gallon)	24.2
Bulking value (gal./1 lb.)	0.0413
pH (10% slurry)	9.9

CHEMICAL ANALYSIS

SiO_2	50.90%
CaO	45.50%
FeO	0.55%
Al_2O_3	0.25%
MnO	0.10%
MgO	0.10%
TiO_2	0.05%
Loss on ignition	0.90%
	99.75%