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VANDERBILT

Technical Data

VANSIL[®] W

Calcium Metasilicate - Wollastonite

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VANSIL® W

Calcium Metasilicate - Wollastonite

Paint Department

Description:

VANSIL W is wollastonite, a calcium metasilicate mineral, available in five grades of fineness to meet the requirements of the coatings industry. Each grade exhibits a lower viscosity in paint than is indicated by its oil absorption value. The low oil absorption characteristic of **VANSIL W** enables the formulator to reduce raw material cost by replacement of the vehicle. The relatively high pH (10-11) of **VANSIL W** is particularly useful in maintaining the desired alkaline pH level of latex paints and preventing the early rusting of latex maintenance coatings. **VANSIL W** is an excellent extender pigment for powder coatings as well as solvent-thinned and latex paints.

Grades:

VANSIL W10 is a coarse grade with 2.7% retained on a 200 mesh sieve. It is useful as an extender in high-build coatings such as block fillers and texture paints where pigment fineness is not a prerequisite.

VANSIL W20 is a relatively coarse grade with 1.5% retained on a 325 mesh sieve. It will disperse to a 0 to 1 Hegman fineness at three pounds per gallon, thereby providing some degree of film roughness where desired.

VANSIL W30 disperses to a 4 Hegman fineness at three pounds per gallon. This grade provides smooth paint films and is a general purpose extender.

VANSIL W40 disperses to a 5 Hegman fineness at three pounds per gallon, providing good film smoothness.

VANSIL W50 disperses to a 6 to 7 Hegman fineness at three pounds per gallon. This grade is suitable for liquid industrial and corrosion resistant coatings, powder coatings, and semigloss architectural coatings. In powder coatings, this grade is desirable for smoother films and improved gloss.

Typical chemical analysis (calculated as oxides):

Calcium oxide (CaO)	44.0%
Silicon dioxide (SiO ₂) (by difference)	50.0%
Aluminum oxide (Al ₂ O ₃)	1.8%
Magnesium oxide (MgO)	1.5%
Iron oxide (Fe ₂ O ₃)	0.3%
Sodium oxide (Na ₂ O)	0.2%
Manganese oxide (MnO)	<0.1%
Ignition loss (1000°C)	2.2%

Storage Note - Due to the agglomeration of **VANSIL W** during prolonged storage, more than 6 months' inventory is not recommended.

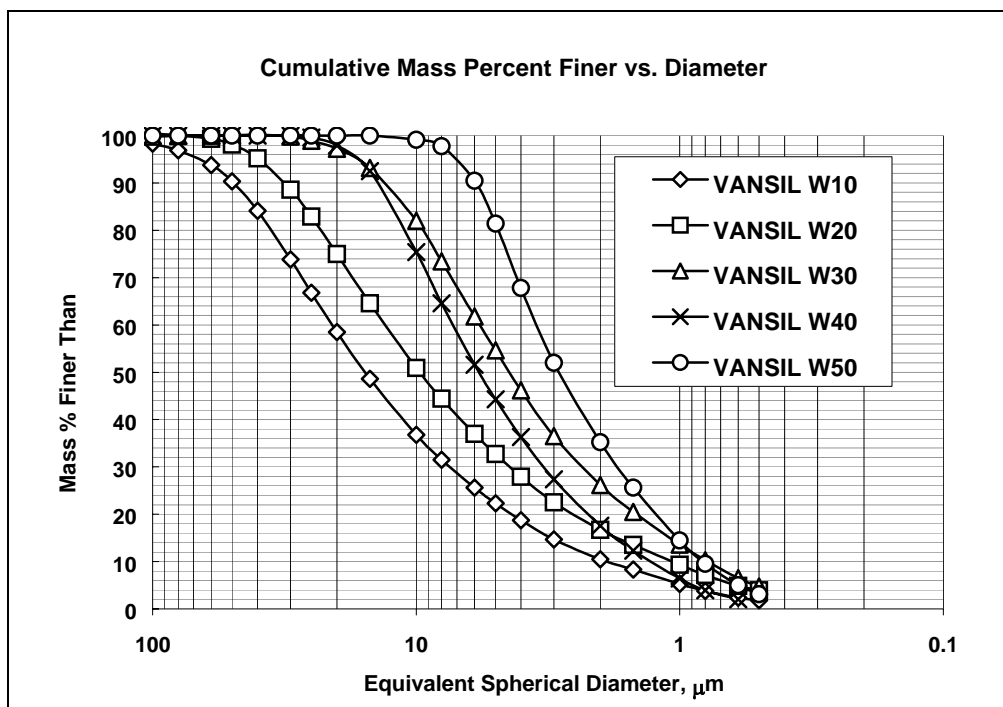
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VANSIL

Typical properties by grade:	W10	W20	W30	W40	W50
Density, g/cm ³	2.9	2.9	2.9	2.9	2.9
Weight (lbs/solid gallon)	24.2	24.2	24.2	24.2	24.2
pH, 10% slurry (ASTM D 1208)	10-11	10-11	10-11	10-11	10-11
GE Brightness (TAPPI T-646)	87	87	87	87	87
Oil absorption, rub out (ASTM D 281)	19	20	21	26	30
Hegman fineness, 3 lbs/gal (T-1042)	0	0 to 1	4	5	6+
Screen analysis:					
Plus 200 mesh, % (75μm)	2.7	---	---	---	---
Plus 325 mesh, % (45μm)	---	1.5	0.06	0.03	---
Plus 400 mesh, % (32μm)	---	---	---	---	0.001
Median Diameter (μm) - SediGraph	15.6	9.7	4.5	5.6	2.8
Surface Area N ₂ B.E.T. (m ² /g)	1.6	2.4	3.7	2.7	4.2

Particle size distribution - SediGraph 5100:

<u>Diameter (μm)</u>	<u>% Finer than Indicated Size</u>				
	W10	W20	W30	W40	W50
20	59	75	97	98	100
15	49	65	93	93	100
10	37	51	82	75	99
5	22	33	55	44	81
2	11	17	26	18	35
1	5	9	14	6	15
Median Diameter (μm)	15.6	9.7	4.5	5.6	2.8



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