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VANDERBILT

Technical Data

NYTAL[®] Talc Replacement Guide

NYTAL[®] industrial talc products are a natural blend of hard/durable prismatic and acicular particles (tremolite/anthophyllite), soft platy particles (talc) and very fine clay-like particles (antigorite/lizardite). The properties of the **NYTAL** products can be reasonably approximated by combinations of readily available minerals from R.T. Vanderbilt Company, Inc. and Specialty Minerals, Inc. that mimic the morphology and functionality of the constituents of **NYTAL**: **VANSIL[®]** wollastonite is similar to the tremolite/anthophyllite component, there is a platy talc component, and **McNAMEE[®]** Clay is similar to the antigorite/lizardite component. We believe that a practical approach to replacing **NYTAL** in most coatings is to use a combination of **VANSIL** and platy talc of the required fineness of grind. The wollastonite contributes durability, weatherability, film reinforcement and abrasion resistance. The platy talc contributes film reinforcement, barrier properties, flattening, and resistance to blistering and corrosion. The following photomicrographs compare the morphologies of the **NYTAL**, **VANSIL** and platy talc.



NYTAL Industrial Talc: acicular, prismatic/nodular, platy



VANSIL Wollastonite: acicular,
prismatic/nodular



Platy Talc: platy

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ABT[®] 1000, ABT 2500 or Talcron[®] MP 25-38 from Specialty Minerals, Inc. are suitable for combinations with **VANSIL[®] W-50** wollastonite when a high Hegman, high brightness talc is preferred. Coarser platy talc products listed below also provide additional options for grind and color when combined with **VANSIL W-20**, **VANSIL W-30**, and **VANSIL W-40**.

Typical Properties	GE Brightness	<325 mesh,%	Median P.S.D., μm *	Hegman Fineness	Oil Absorption	pH
<i>Industrial Talc</i>						
NYTAL[®] 200	90	97.5	12.6	0-1	23	9.4
NYTAL 300	90	99.9	6.9	4	29	9.4
NYTAL 400	91	99.9	4.6	5	39	9.4
<i>Platy Talc</i>						
Talcron 25 LOA	80	98.8 ^B	18.9	0	26	9.4
Talcron MP 70-22	87	93.3	9.8	0	36	9.4
Talcron 35 LOA	84	99.75	8.5	4	38	9.4
Min-flex [®] 325	87	99.9	7.8	3¼	36	9.4
Talcron MP 40-27	83	99.9	6.7	3½	42	9.4
Talcron 40 LOA	83	trace	4.2	5	44	9.4
Microtalc [®] MP 30-36	85	99.9	3.6	5	52	9.4
ABT 1000	91	trace	1.0	6+	55	9.4
ABT 2500	89	trace	3.9	5	42	9.4
Talcron MP 25-38	90	trace	2.5	5 ½	48	9.4
<i>Wollastonite</i>						
VANSIL[®] W-20	87	98.0	12.0	0-1	20	10
VANSIL W-30	87	99.9	10.0	4	21	10
VANSIL W-40	87	99.97	5.6	5	26	10
VANSIL W-50	87	100	2.8	6+	28	10

* Particle Size Distribution by SediGraph

We recommend starting with the following ratios of wollastonite to talc of 1:3, 1:1 and 3:1 and the following combinations:

To replace:	Use: Wollastonite plus Platy Talc	
NYTAL 200	VANSIL W-20	Talcron 25 LOA or Talcron MP 70-22
NYTAL 300	VANSIL W-30	Talcron 35 LOA, Min-flex [®] 325 or Talcron MP 40-27
NYTAL 400	VANSIL W-40 or VANSIL W-50	Talcron 40 LOA or Microtalc MP 30-36

While a **NYTAL** product conveniently provides the composite properties of a multi-mineral blend, using **VANSIL** and platy talc in combination may allow for better tailoring of the properties important to a specific coating by fine-tuning the ratio of hard acicular and prismatic particles to soft platy particles.

Because **NYTAL**[®] talc products provide both high brightness and relatively low oil absorption, R.T. Vanderbilt Company has evaluated a number of **VANSIL**[®]/platy talc combinations for these properties, using the wollastonite to talc ratios 1:3, 1:1 and 3:1. The results in the following table may provide some guidance according to the specific requirements of a coating.

Please note, the abbreviations **W-20**, **W-30** and so forth correspond to equivalent **VANSIL** grades, while MP and LOA designate the grade of platy talc from Specialty Minerals, Inc.

	Oil Absorption	Dry		In Oil	
		GE Brightness	L	GE Brightness	L
NYTAL 200	23	90	95	43	72
NYTAL 300	30	90	96	42	70
NYTAL 400	37	91	97	50	74
VANSIL W-20	28	87	94	40	70
VANSIL W-30	25	87	95	51	74
VANSIL W-40	31	87	95	44	71
VANSIL W-50	26	100	97	59	78
Talcron [®] 25 LOA	36	87	94	28	56
Talcron MP 70-22	26	80	90	32	59
Talcron 35 LOA	42	83	93	36	63
Min-flex [®] 325	36	87	94	30	59
Talcron MP 40-27	38	84	92	34	60
Talcron 40 LOA	52	85	93	32	58
Microtalc [®] MP 30-36	44	83	92	34	61
1:3 W-20 / MP 70-22	31	85	93	35	63
1:1 W-20 / MP 70-22	31	84	93	38	65
3:1 W-20 / MP 70-22	30	84	93	39	67
1:3 W-20 / 25 LOA	24	83	92	37	63
1:1 W-20 / 25 LOA	25	85	93	41	66
3:1 W-20 / 25 LOA	27	87	94	47	70
1:3 W-30 / MP 40-27	35	88	94	45	69
1:1 W-30 / MP 40-27	33	89	95	47	71
3:1 W-30 / MP 40-27	30	89	95	48	72
1:3 W-30 / Min-flex 325	34	84	93	38	65
1:1 W-30 / Min-flex 325	31	86	94	42	68
3:1 W-30 / Min-flex 325	28	87	94	47	71
1:3 W-30 /35 LOA	35	85	93	39	64
1:1 W-30 /35 LOA	36	86	93	43	68
3:1 W-30 /35 LOA	33	88	94	47	70

Table continues on the next page

	Oil Absorption	Dry		In Oil	
		GE Brightness	L	GE Brightness	L
1:3 W-40 / MP 30-36	48	85	92	39	65
1:1 W-40 / MP 30-36	44	87	94	41	67
3:1 W-40 / MP 30-36	41	87	94	43	69
1:3 W-40 /40 LOA	39	85	92	37	63
1:1 W-40 /40 LOA	42	86	93	40	66
3:1 W-40 /40 LOA	40	87	94	43	68
1:3 W-50 / MP 30-36	45	88	94	43	67
1:1 W-50 / MP 30-36	40	87	94	45	68
3:1 W-50 / MP 30-36	35	90	95	52	73
1:3 W-50 /40 LOA	39	86	93	52	73
1:1 W-50 /40 LOA	39	87	94	43	68
3:1 W-50 /40 LOA	35	90	95	43	67

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