

## Nyco NYAD® M100 Wollastonite

Category : Ceramic , Oxide , Silicon Oxide , Other Engineering Material , Additive/Filler for Polymer

### Material Notes:

Wollastonite is a naturally occurring white mineral with an acicular (needle-shaped) particle structure. This distinctive particle morphology makes wollastonite an ideal performance mineral for a broad range of industrial and consumer applications, including polymer reinforcement; coatings; construction/architecture reinforcement; enhancing friction stability in discs, lings, and brakes; and metallurgy. Information provided by NYCO Minerals.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Nyco-NYAD-M100-Wollastonite.php](http://www.lookpolymers.com/polymer_Nyco-NYAD-M100-Wollastonite.php)

| Physical Properties   | Metric                 | English                   | Comments          |
|-----------------------|------------------------|---------------------------|-------------------|
| Bulk Density          | 1.10 g/cc              | 0.0397 lb/in <sup>3</sup> | Loose             |
|                       | 1.66 g/cc              | 0.0600 lb/in <sup>3</sup> | Tapped            |
| Density               | 2.90 g/cc              | 0.105 lb/in <sup>3</sup>  |                   |
| Brightness            | 79 %                   | 79 %                      | G.E. Brightness   |
| Oil Absorption        | 20 %                   | 20 %                      |                   |
| Solubility in Water   | 0.0095 %               | 0.0095 %                  |                   |
| Moisture Absorption   | 0.0500 %               | 0.0500 %                  |                   |
| Particle Size         | >= 10 µm               | >= 10 µm                  | 10% smaller than  |
|                       | 55 µm                  | 55 µm                     | median; Microtrac |
|                       | <= 230 µm              | <= 230 µm                 | 90% smaller than  |
| pH                    | 9.9                    | 9.9                       | 10% Slurry        |
| Specific Surface Area | 0.60 m <sup>2</sup> /g | 0.60 m <sup>2</sup> /g    | BET               |
| Molecular Weight      | 116 g/mol              | 116 g/mol                 |                   |

| Mechanical Properties | Metric                       | English                         | Comments       |
|-----------------------|------------------------------|---------------------------------|----------------|
| Hardness, Mohs        | 4.5                          | 4.5                             |                |
| Tensile Strength      | 2700 - 4100 MPa              | 392000 - 595000 psi             | Fiber Strength |
|                       | @Diameter 0.00300 - 0.150 mm | @Diameter 0.000118 - 0.00591 in |                |
| Modulus of Elasticity | 303 - 530 GPa                | 43900 - 76900 ksi               | Fiber Modulus  |
|                       | @Diameter 0.00300 - 0.150 mm | @Diameter 0.000118 - 0.00591 in |                |

| Mechanical Properties | Metric   | English  | Comments    |
|-----------------------|--|--|-------------|
| CTE, linear           | 6.50 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ | 3.61 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$         |             |
| Thermal Conductivity  | 2.63 - 2.77 W/m-K                                | 18.3 - 19.2 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$ |             |
| Melting Point         | 1410 $^{\circ}\text{C}$                          | 2570 $^{\circ}\text{F}$                                    | ASTM D1857  |
|                       | 1540 $^{\circ}\text{C}$                          | 2800 $^{\circ}\text{F}$                                    | theoretical |

| Optical Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
| Refractive Index   | 1.63   | 1.63    |          |

| Component Elements Properties | Metric  | English | Comments |
|-------------------------------|---------|---------|----------|
| Al2O3                         | 0.30 %  | 0.30 %  |          |
| CaO                           | 44.94 % | 44.94 % |          |
| Fe2O3                         | 0.28 %  | 0.28 %  |          |
| K2O                           | 0.23 %  | 0.23 %  |          |
| Loss on Ignition(%)           | 0.47 %  | 0.47 %  |          |
| MgO                           | 0.75 %  | 0.75 %  |          |
| MnO                           | 0.040 % | 0.040 % |          |
| SiO2                          | 52.94 % | 52.94 % |          |
| TiO2                          | 0.050 % | 0.050 % |          |

| Electrical Properties  | Metric                | English               | Comments          |
|------------------------|-----------------------|-----------------------|-------------------|
| Electrical Resistivity | 1.30e+13 ohm-cm       | 1.30e+13 ohm-cm       | pure wollastonite |
| Dielectric Constant    | 6.8                   | 6.8                   |                   |
|                        | @Frequency 10000 Hz   | @Frequency 10000 Hz   |                   |
|                        | 6.8                   | 6.8                   |                   |
|                        | @Frequency 100000 Hz  | @Frequency 100000 Hz  |                   |
|                        | 6.9                   | 6.9                   |                   |
|                        | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                   |
|                        | 6.9                   | 6.9                   |                   |

| Electrical Properties | Metric                | English               | Comments |
|-----------------------|-----------------------|-----------------------|----------|
| Dissipation Factor    | 0.00152               | 0.00152               |          |
|                       | @Frequency 1000 Hz    | @Frequency 1000 Hz    |          |
|                       | 0.0046                | 0.0046                |          |
|                       | @Frequency 10000 Hz   | @Frequency 10000 Hz   |          |
|                       | 0.0046                | 0.0046                |          |
|                       | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |          |
|                       | 0.0078                | 0.0078                |          |
|                       | @Frequency 100000 Hz  | @Frequency 100000 Hz  |          |

| Descriptive Properties         | Value    | Comments |
|--------------------------------|----------|----------|
| Appearance                     | White    |          |
| Bulking Value (gal./lbs.)      | 0.0413   |          |
| Minus 100 U.S. Mesh Screen (%) | 90       |          |
| Morphology                     | Acicular |          |

## Contact Songhan Plastic Technology Co.,Ltd.

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