

## Master Bond MB600S Aqueous Based Sodium Silicate System for EMI/RFI Shielding

Category : Ceramic , Other Engineering Material , Ceramic/Metallic Coating

### Material Notes:

Description: Master Bond MB600S is a silver containing aqueous based sodium silicate system used as a coating in situations where EMI shielding effectiveness is paramount. Electromagnetic interference (EMI) and radio frequency interference (RFI) are very important issues in the world of electronics. The energy emitted from various sources such as radios, appliances, etc. can interfere with other electronic devices that are made from plastics. Conductive coatings are often applied to the housings in order to protect the devices from these types of interferences. One of the ways shielding effectiveness is measured is by attenuation. Technically, it refers to the differences of an incoming intensity of the source and its diminution after it passes through the coating. The actual unit of measurement is in decibels (dB). It should be noted that this scale is logarithmic and a difference of 10 dBs indicates ten times the shielding effectiveness (e.g. 40 dBs is ten times as effective as 30 dBs). In general, an effectiveness of 10-30 dBs is considered to be low, between 60-90 dBs is high and 90-120 dBs is exceptional. With the MB600S, the test method used was based on IEEE 299, 2006. Aluminum is considered the reference for this test, which was performed at room temperature. From 100 MHz to 2 GHz, the MB600S was as effective as the aluminum reference with a range of 95-105 dBs. Above 2 GHz the shielding effectiveness of MB600S decreased to the region around 80 dBs and slightly below. Above 4 GHz the effectiveness was in the 60-70 dB region. The performance of MB600S is truly fantastic. Aside from the stunning proficiency, the handling is wonderfully simple and safe. It is easy to brush on and being water based, the system is relatively non-toxic. It should be noted that it is possible to spray this system as well, with the proper equipment. If sprayed on, the shielding effectiveness would be even greater than the values given above. MB600S will cure at room temperature in 24-48 hours or in 1-2 hours at 80°C. If curing with heat it is advisable to ramp up the temperature over a 15-30 minute interval to prevent any possible blistering of the material. MB600S can be used in a wide variety of aerospace and electronic applications where superlative shielding effectiveness is desirable. Key Features Excellent shielding effectiveness Silver conductive system Temperature resistance up to +700°F Easy application Product Advantages: Water based system, relatively non-toxic Excellent temperature resistance Excellent shielding effectiveness Bonds well to a wide variety of substrates Highly effective moisture barrier Easily applied by brushing Information provided by MasterBond®

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Master-Bond-MB600S-Aqueous-Based-Sodium-Silicate-System-for-EMIRFI-Shielding.php](http://www.lookpolymers.com/polymer_Master-Bond-MB600S-Aqueous-Based-Sodium-Silicate-System-for-EMIRFI-Shielding.php)

| Physical Properties | Metric    | English   | Comments |
|---------------------|-----------|-----------|----------|
| Specific Gravity    | 4.40 g/cc | 4.40 g/cc |          |
| Solids Content      | 90 %      | 90 %      |          |

| Thermal Properties               | Metric   | English  | Comments |
|----------------------------------|----------|----------|----------|
| Maximum Service Temperature, Air | 371 °C   | 700 °F   |          |
| Minimum Service Temperature, Air | -17.8 °C | 0.000 °F |          |

| Electrical Properties | Metric         | English        | Comments |
|-----------------------|----------------|----------------|----------|
| Surface Resistance    | <= 1.00e+6 ohm | <= 1.00e+6 ohm |          |

| Electrical Properties   | Metric <sup>dB</sup>             | English <sup>dB</sup>            | Comments |
|-------------------------|----------------------------------|----------------------------------|----------|
| Shielding Effectiveness | @Frequency 4.00e+9 - 1.80e+10 Hz | @Frequency 4.00e+9 - 1.80e+10 Hz |          |
|                         | 90 - 100 dB                      | 90 - 100 dB                      |          |
|                         | @Frequency 2.00e+9 - 3.00e+9 Hz  | @Frequency 2.00e+9 - 3.00e+9 Hz  |          |
|                         | 100 - 105 dB                     | 100 - 105 dB                     |          |
|                         | @Frequency 1.00e+9 - 2.00e+9 Hz  | @Frequency 1.00e+9 - 2.00e+9 Hz  |          |

| Processing Properties | Metric                 | English               | Comments                        |
|-----------------------|------------------------|-----------------------|---------------------------------|
| Cure Time             | 60.0 - 120 min         | 1.00 - 2.00 hour      |                                 |
|                       | @Temperature >=79.4 °C | @Temperature >=175 °F |                                 |
|                       | 1440 - 2880 min        | 24.0 - 48.0 hour      |                                 |
|                       | @Temperature 23.9 °C   | @Temperature 75.0 °F  |                                 |
| Shelf Life            | 6.00 Month             | 6.00 Month            | in original unopened containers |
|                       | @Temperature 23.9 °C   | @Temperature 75.0 °F  |                                 |

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