

## Dow SiLK™ I 820 Semiconductor Dielectric Resin

Category : Polymer

### Material Notes:

SiLK™ I 820 is designed for easy integration and extendibility, and its formulations offer a robust feature set. High thermal stability and fracture toughness means SiLK™ I 820 is compatible with standard IC processing tools in today's fabrications. SiLK™ I 820 is fluorine-free, thus is compatible with Ti and Ta barrier materials. Information provided by Dow

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Dow-SiLK-I-820-Semiconductor-Dielectric-Resin.php](http://www.lookpolymers.com/polymer_Dow-SiLK-I-820-Semiconductor-Dielectric-Resin.php)

| Physical Properties | Metric               | English             | Comments      |
|---------------------|----------------------|---------------------|---------------|
| Water Absorption    | 0.24 %               | 0.24 %              | 80% R.H.      |
| Thickness           | 0.820 microns        | 0.0323 mil          | 3000 rpm      |
|                     | 0.720 - 1.02 microns | 0.0283 - 0.0402 mil | 2000-4000 rpm |

| Mechanical Properties      | Metric   | English   | Comments |
|----------------------------|----------|-----------|----------|
| Tensile Strength, Ultimate | 89.0 MPa | 12900 psi |          |
| Tensile Strength, Yield    | 60.0 MPa | 8700 psi  |          |
| Tensile Modulus            | 2.45 GPa | 355 ksi   |          |

| Thermal Properties        | Metric                                                                              | English                                                                                    | Comments                |
|---------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------|
| CTE, linear               | 62.0 $\mu\text{m/m-}^{\circ}\text{C}$<br>@Temperature 50.0 - 150 $^{\circ}\text{C}$ | 34.4 $\mu\text{in/in-}^{\circ}\text{F}$<br>@Temperature 122 - 302 $^{\circ}\text{F}$       |                         |
| Thermal Conductivity      | 0.190 W/m-K                                                                         | 1.32 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$                                        |                         |
|                           | 0.230 W/m-K<br>@Temperature 125 $^{\circ}\text{C}$                                  | 1.60 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$<br>@Temperature 257 $^{\circ}\text{F}$ |                         |
| Glass Transition Temp, Tg | $\geq 490^{\circ}\text{C}$                                                          | $\geq 914^{\circ}\text{F}$                                                                 |                         |
| Decomposition Temperature | 450 $^{\circ}\text{C}$                                                              | 842 $^{\circ}\text{F}$                                                                     | 1% weight loss per hour |

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

| Electrical Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
|                       | 2.6    | 2.6     |          |

| Dielectric Constant<br>Electrical Properties | Metric<br>@ Frequency 100000 Hz | English<br>@ Frequency 100000 Hz | Comments |
|----------------------------------------------|---------------------------------|----------------------------------|----------|
| Dielectric Strength                          | >= 400 kV/mm                    | >= 10200 kV/in                   |          |

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China