

## LG Chemical ALPHALAC SF510 HIPS

Category : Polymer , Thermoplastic , Polystyrene (PS) , Polystyrene, Impact Grade, Glass Filled

### Material Notes:

Super flow, High gloss and high impact equivalent to ABS, Excellent mechanical properties compare with general HIPS, Meet requirements for cost and quality, Applications include TV cabinets, thin part, and high speed injection molding CAS No. 9003-55-8 Information provided by LG Chemical

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_LG-Chemical-ALPHALAC-SF510-HIPS.php](http://www.lookpolymers.com/polymer_LG-Chemical-ALPHALAC-SF510-HIPS.php)

| Physical Properties      | Metric                                | English                               | Comments          |
|--------------------------|---------------------------------------|---------------------------------------|-------------------|
| Specific Gravity         | 1.04 g/cc                             | 1.04 g/cc                             | ASTM D792         |
| Maximum Moisture Content | 0.010                                 | 0.010                                 | Injection Molding |
| Melt Flow                | 12 g/10 min                           | 12 g/10 min                           | ASTM D1238(G)     |
|                          | @Load 5.00 kg,<br>Temperature 200 Â°C | @Load 11.0 lb,<br>Temperature 392 Â°F |                   |
|                          | 34 g/10 min                           | 34 g/10 min                           | ASTM D1238(I)     |
|                          | @Load 3.80 kg,<br>Temperature 230 Â°C | @Load 8.38 lb,<br>Temperature 446 Â°F |                   |
|                          | 137 g/10 min                          | 137 g/10 min                          | ASTM D1238(G)     |
|                          | @Load 10.0 kg,<br>Temperature 220 Â°C | @Load 22.0 lb,<br>Temperature 428 Â°F |                   |

| Mechanical Properties   | Metric             | English             | Comments            |
|-------------------------|--------------------|---------------------|---------------------|
| Hardness, Rockwell R    | 101                | 101                 | ASTM D785           |
| Tensile Strength, Yield | 26.5 MPa           | 3840 psi            | 50mm/min; ASTM D638 |
|                         | @Thickness 3.20 mm | @Thickness 0.126 in |                     |
| Elongation at Break     | 51 %               | 51 %                | 50mm/min; ASTM D638 |
|                         | @Thickness 3.20 mm | @Thickness 0.126 in |                     |
| Elongation at Yield     | 5.0 %              | 5.0 %               | 50mm/min; ASTM D638 |
|                         | @Thickness 3.20 mm | @Thickness 0.126 in |                     |
| Tensile Modulus         | 2.11 GPa           | 306 ksi             | 1mm/min; ASTM D638  |
|                         | @Thickness 3.20 mm | @Thickness 0.126 in |                     |
| Flexural Yield Strength | 42.2 MPa           | 6120 psi            | 15mm/min; ASTM D790 |
|                         | @Thickness 3.20 mm | @Thickness 0.126 in |                     |

| Mechanical Properties | 2.30 GPa<br>Metric                           | 334 ksi<br>English                            | Comments  |
|-----------------------|----------------------------------------------|-----------------------------------------------|-----------|
|                       | @Thickness 3.20 mm                           | @Thickness 0.126 in                           |           |
| Izod Impact, Notched  | 0.490 J/cm                                   | 0.918 ft-lb/in                                | ASTM D256 |
|                       | @Thickness 6.50 mm,<br>Temperature -30.0 Â°C | @Thickness 0.256 in,<br>Temperature -22.0 Â°F |           |
|                       | 0.686 J/cm                                   | 1.29 ft-lb/in                                 | ASTM D256 |
|                       | @Thickness 3.20 mm,<br>Temperature -30.0 Â°C | @Thickness 0.126 in,<br>Temperature -22.0 Â°F |           |
|                       | 0.981 J/cm                                   | 1.84 ft-lb/in                                 | ASTM D256 |
|                       | @Thickness 6.50 mm,<br>Temperature 23.0 Â°C  | @Thickness 0.256 in,<br>Temperature 73.4 Â°F  |           |
|                       | 1.37 J/cm                                    | 2.57 ft-lb/in                                 | ASTM D256 |
|                       | @Thickness 3.20 mm,<br>Temperature 23.0 Â°C  | @Thickness 0.126 in,<br>Temperature 73.4 Â°F  |           |

| Thermal Properties                             | Metric               | English                   | Comments              |
|------------------------------------------------|----------------------|---------------------------|-----------------------|
| Deflection Temperature at 0.46 MPa<br>(66 psi) | 89.0 Â°C             | 192 Â°F                   | Unannealed; ASTM D648 |
|                                                | @Thickness 6.40 mm   | @Thickness 0.252 in       |                       |
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 80.0 Â°C             | 176 Â°F                   | Unannealed; ASTM D648 |
|                                                | @Thickness 6.40 mm   | @Thickness 0.252 in       |                       |
| Vicat Softening Point                          | 88.0 Â°C             | 190 Â°F                   | 50Â°C/h; ASTM D1525   |
|                                                | @Load 5.00 kg        | @Load 11.0 lb             |                       |
| UL RTI, Electrical                             | 50.0 Â°C             | 122 Â°F                   |                       |
|                                                | @Thickness >=1.50 mm | @Thickness >=0.0591<br>in |                       |
|                                                | 50.0 Â°C             | 122 Â°F                   |                       |
|                                                | @Thickness >=3.00 mm | @Thickness >=0.118 in     |                       |
| UL RTI, Mechanical with Impact                 | 50.0 Â°C             | 122 Â°F                   |                       |
|                                                | @Thickness >=1.50 mm | @Thickness >=0.0591<br>in |                       |
|                                                | 50.0 Â°C             | 122 Â°F                   |                       |
|                                                | @Thickness >=3.00 mm | @Thickness >=0.118 in     |                       |
| UL RTI, Mechanical without Impact              | 50.0 Â°C             | 122 Â°F                   |                       |
|                                                | @Thickness >=1.50 mm | @Thickness >=0.0591<br>in |                       |

| Thermal Properties | 50.0 Â°C<br>Metric   | 122 Â°F<br>English     | Comments |
|--------------------|----------------------|------------------------|----------|
|                    | @Thickness >=3.00 mm | @Thickness >=0.118 in  |          |
| Flammability, UL94 | HB                   | HB                     |          |
|                    | @Thickness >=1.50 mm | @Thickness >=0.0591 in |          |
|                    | HB                   | HB                     |          |
|                    | @Thickness >=3.00 mm | @Thickness >=0.118 in  |          |

| Electrical Properties      | Metric               | English                | Comments  |
|----------------------------|----------------------|------------------------|-----------|
| Arc Resistance             | 60 - 120 sec         | 60 - 120 sec           | ASTM D495 |
| Comparative Tracking Index | 400 - 600 V          | 400 - 600 V            |           |
| Hot Wire Ignition, HWI     | 7.0 - 15 sec         | 7.0 - 15 sec           |           |
|                            | @Thickness >=1.50 mm | @Thickness >=0.0591 in |           |
|                            | 15 - 30 sec          | 15 - 30 sec            |           |
|                            | @Thickness >=3.00 mm | @Thickness >=0.118 in  |           |
| High Amp Arc Ignition, HAI | 60 - 120 arcs        | 60 - 120 arcs          |           |
|                            | @Thickness 1.50 mm   | @Thickness 0.0591 in   |           |
|                            | 60 - 120 arcs        | 60 - 120 arcs          |           |
|                            | @Thickness 3.00 mm   | @Thickness 0.118 in    |           |

| Processing Properties     | Metric           | English          | Comments          |
|---------------------------|------------------|------------------|-------------------|
| Rear Barrel Temperature   | 170 - 190 Â°C    | 338 - 374 Â°F    | Injection Molding |
| Middle Barrel Temperature | 180 - 200 Â°C    | 356 - 392 Â°F    | Injection Molding |
| Front Barrel Temperature  | 190 - 210 Â°C    | 374 - 410 Â°F    | Injection Molding |
| Nozzle Temperature        | 190 - 220 Â°C    | 374 - 428 Â°F    | Injection Molding |
| Melt Temperature          | 190 - 220 Â°C    | 374 - 428 Â°F    | Injection Molding |
| Mold Temperature          | 40.0 - 70.0 Â°C  | 104 - 158 Â°F    | Injection Molding |
| Drying Temperature        | 80.0 Â°C         | 176 Â°F          | Injection Molding |
| Dry Time                  | 2.00 - 4.00 hour | 2.00 - 4.00 hour | Injection Molding |
| Back Pressure             | 29.4 - 58.8 MPa  | 4260 - 8530 psi  | Injection Molding |
| Screw Speed               | 30 - 60 rpm      | 30 - 60 rpm      | Injection Molding |

| Processing Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
|-----------------------|--------|---------|----------|

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