

## LATISHIELD 85-08A G/20

EMI shielding product based on Polyether Sulphone (PES).  
Steel fibers. Glass fibers.

| PHYSICAL PROPERTIES                  | STANDARD    | VALUE MEASURE UNITS         |
|--------------------------------------|-------------|-----------------------------|
| Density                              | ISO 1183    | 1.59 g/cm <sup>3</sup>      |
| Linear shrinkage at moulding         |             |                             |
| Longitudinal (0.078in/8,700psi)      | ISO 294-4   | 0.004 ÷ 0.005 in/in         |
| Transversal (0.078in/8,700psi)       | ISO 294-4   | 0.004 ÷ 0.005 in/in         |
| Dimensional stability                | ---         | 78                          |
| MECHANICAL PROPERTIES                | STANDARD    | VALUE MEASURE UNITS         |
| CHARPY impact strength               |             |                             |
| Unnotched, at +73°F                  | ISO 179-1eU | 21.03 ft.lb/in <sup>2</sup> |
| Notched, at +73°F                    | ISO 179-1eA | 2.57 ft.lb/in <sup>2</sup>  |
| Tensile elongation                   |             |                             |
| At break (0.196 in/min), 73°F        | ISO 527 (1) | 2.0 %                       |
| Tensile strength                     |             |                             |
| At break (0.196 in/min), 73°F        | ISO 527 (1) | 16000 psi                   |
| Elastic modulus                      |             |                             |
| Tensile (speed 0.04 in/min), at 73°F | ISO 527 (1) | 1020 kpsi                   |

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| THERMAL PROPERTIES                       | STANDARD   | VALUE MEASURE UNITS |
|--|------------|---------------------|
| <b>VICAT - Softening point</b>           |            |                     |
| 11 lb (heating rate 122°F/h)             | ISO 306    | 410 °F              |
| <b>HDT - Heat Deflection Temperature</b> |            |                     |
| 66 psi                                   | ISO 75     | 419 °F              |
| 264 psi                                  | ISO 75     | 401 °F              |
| FLAMMABILITY                             | STANDARD   | VALUE MEASURE UNITS |
| <b>Flammability rating</b>               |            |                     |
| 0.118 in thickness                       | UL 94      | V-0                 |
| 0.059 in thickness                       | UL 94      | V-0                 |
| 0.029 in thickness                       | UL 94      | V-0                 |
| ELECTRICAL PROPERTIES                    | STANDARD   | VALUE MEASURE UNITS |
| <b>Electrical resistivity</b>            |            |                     |
| Surface                                  | ASTM D 257 | 1E1 ohm             |
| <b>Electromagnetic reflection</b>        |            |                     |
| (Bekiscan - CP)                          | ---        | 90 %                |

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### MATERIAL - STORAGE

Sealed, undamaged packages has to be kept in dry storage facilities, providing they are also able to protect them from weather and accidental damages.

### HANDLING AND SAFETY

Detailed information about a safe treatment of the material are indicated in the "Material Safety Data Sheet" (MSDS) furnished with the first material supply. The MSDS may be also sent again in case of loss.

### PREDRYING CONDITIONS

Predrying not necessary

. Particularly wet material may need a longer drying time.

### ACTUAL MELT TEMPERATURE

572 ÷ 644°F

The injection molding machine settings needed to obtain the suggested melt temperature will depend greatly on shot size and machine capacity, as well as other molding parameters such as: injection speed, screw RPM, back pressure, etc. On small machines, running short cycles, it is possible to use higher melt temperatures to improve plastification, fluidity and surface appearance, paying attention to any indication of material degradation.

### MOLD TEMPERATURE

212 ÷ 266°F

The mold temperature suggested above is the actual tool steel temperature. This can be significantly different from the tool settings, due to the cooling system efficiency and the accuracy of the temperature control on the tool. The best results can be obtained keeping the tool temperature in the upper range.

### INJECTION SPEED

Medium to high

The advisable injection speed greatly depends on cavity geometry and injection molding machine size. The use of high injection speed should be avoided as it can cause excessive shear stress on the steel fibres, reducing their EMI shielding effectiveness.

### REGRIND USAGE

The use of regrind is possible, but should be assessed on the basis of the project, moulding parameters, and type of grinding used. The effect of using regrind on material properties must be evaluated by the customer on its specific project and process, especially when high shielding is required. High percentages of regrind may cause a reduction in viscosity and fibre length, reducing mechanical properties and EMI shielding effectiveness. The use of regrind shall be avoided when the shielding requirements for the application are close to the maximum attainable with the product.

### HOT RUNNER MOLDS AND SUB GATES

Hot runner molds and/or small injection gates are not recommended and their use should be evaluated with the support of LATI technical service. To avoid the risk of clogging small pin and submarine gates, as well as hot drops, it is necessary to start every molding session by molding a few parts with a standard, glass reinforced, . LATISHIELD must be added to the standard material in the hopper without purging the barrel and keeping high back pressure until a few parts are molded showing good dispersion of the steel fibres. The specific procedure should be set up with the help if LATI technical service. It must be noted that pin and submarine gates cause high shear stress and can negatively affect the shielding properties of the material..

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### MATERIAL HANDLING

Pneumatic conveyor systems shall be avoided to prevent the separation of the steel bundles from the base resin.

### TO AVOID

Shut-off nozzles and internally heated hot runners have to be avoided. In order to prevent any material degradation, over-dimensioned machines should be avoided.

### NOTES

**The products mentioned herein are not suitable for applications in contact with foodstuff or for potable water transportation, or for toy manufacturing. The products mentioned herein are not suitable for applications in the pharmaceutical, medical or dental sector.**

### CONTACTS

**LATI Industria Termoplastici S.p.A.**