# Plexiglas® Resist zk20

#### Polymethyl Methacrylate Acrylic

#### **Evonik Industries AG**

#### Message:

Product Profile:

PLEXIGLAS® Resist zk20 is an amorphous thermoplastic molding compound that is slightly impact-modified (PMMA-I).

Typical properties of standard PLEXIGLAS® molding compounds are:

excellent light transmission

good mechanical properties.

Special properties of PLEXIGLAS® Resist zk20 are:

increased break resistance to avoid demolding fractures during injection molding

improved resistance to stress cracking

AMECA listing.

Application:

Used for injection molding. Profile extrusion or coextrusion are also possible.

xamples:

Density

lighting fixtures, writing and drawing utensils, domestic appliances and sanitaryware

1.17

| General Information |   |                 |  |  |
|---------------------|---|-----------------|--|--|
| Additive            | Impact Modifier                             | Impact Modifier |  |  |
| Features            | High ESCR (Stress Crack Resist.)            |                 |  |  |
|                     | High Impact Resistance                      |                 |  |  |
|                     |   |                 |  |  |
| Uses                | Appliances                                  |                 |  |  |
|                     | Lighting Fixtures                           |                 |  |  |
|                     | Medical Devices                             |                 |  |  |
|                     | Profiles                                    |                 |  |  |
|                     | Sanitary Products                           |                 |  |  |
|                     | Writing Instruments                         |                 |  |  |
|                     |   |                 |  |  |
| Forms               | Pellets                                     |                 |  |  |
| Processing Method   | Extrusion                                   |                 |  |  |
|                     | Injection Molding                           |                 |  |  |
|                     |   |                 |  |  |
| Multi-Point Data    | Creep Modulus vs. Time (ISO 11403-1)        |                 |  |  |
|                     | Isochronous Stress vs. Strain (ISO 11403-1) |                 |  |  |
|                     | Isothermal Stress vs. Strain (ISO 11403-1)  |                 |  |  |
|                     | Secant Modulus vs. Strain (ISO 11403-1)     |                 |  |  |
|                     | Shear Modulus vs. Temperature (ISO 11403-1) |                 |  |  |
|                     | Viscosity vs. Shear Rate (ISO 11403-2)      |                 |  |  |
|                     |   |                 |  |  |
| Physical            | Nominal Value Unit                          | Test Method     |  |  |

g/cm<sup>3</sup>

ISO 1183

| Melt Volume-Flow Rate (MVR) (230°C/3.8 kg) | 2.00          | cm³/10min | ISO 1133     |
|--|---------------|-----------|--------------|
| Water Absorption (Equilibrium, 23°C, 50%   |               |           |              |
| RH)  | 0.30          | %         | ISO 62       |
| Mechanical                                 | Nominal Value | Unit      | Test Method  |
| Tensile Modulus                            | 2400          | MPa       | ISO 527-2/1  |
| Tensile Stress (Yield)                     | 62.0          | MPa       | ISO 527-2/50 |
| Tensile Strain (Yield)                     | 4.5           | %         | ISO 527-2/50 |
| Nominal Tensile Strain at Break            | 22            | %         | ISO 527-2    |
| Impact                                     | Nominal Value | Unit      | Test Method  |
| Charpy Unnotched Impact Strength (23°C)    | 25            | kJ/m²     | ISO 179/1eU  |
| Thermal                                    | Nominal Value | Unit      | Test Method  |
| Heat Deflection Temperature                |               |           |              |
| 0.45 MPa, Unannealed                       | 100           | °C        | ISO 75-2/B   |
| 1.8 MPa, Unannealed                        | 96.0          | °C        | ISO 75-2/A   |
| Glass Transition Temperature               | 112           | °C        | ISO 11357-2  |
| Vicat Softening Temperature                | 102           | °C        | ISO 306/B50  |
| CLTE - Flow (0 to 50°C)                    | 1.0E-4        | cm/cm/°C  | ISO 11359-2  |
| Flammability                               | Nominal Value |           | Test Method  |
| Flame Rating (1.60 mm)                     | НВ            |           | UL 94        |
| Optical                                    | Nominal Value | Unit      | Test Method  |
| Refractive Index                           | 1.490         |           | ISO 489      |
| Transmittance <sup>1</sup>                 | 91.0          | %         | ISO 13468-2  |
| Injection                                  | Nominal Value | Unit      |              |
| Drying Temperature                         | < 90.0        | °C        |              |
| Drying Time                                | 2.0 to 3.0    | hr        |              |
| Processing (Melt) Temp                     | 230 to 240    | °C        |              |
| Mold Temperature                           | 50.0 to 70.0  | °C        |              |
| NOTE                                       |               |           |              |
| 1.   | D65           |           |              |

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## Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519 Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

