

# QUADRANT EPP PRODUCT DATA SHEET

## PSU 1000

May 1999

### Polysulphone (PSU)

An amorphous translucent material distinguished by its chemical resistance, low moisture absorption and FDA compliance. As such, it is ideal for applications in contact with food and drugs. PSU 1000 can operate continuously at up to 150°C, and can withstand repeated autoclaving.

- Excellent hydrolysis resistance
- Very good resistance to high energy radiation
- Good electrical insulating properties
- High mechanical strength / stiffness
- Continuous temperature 150°C (max. 180°C)
- Very good dimensional stability
- Physiologically inert and FDA compliant

Common applications: Electrical industry components; Process equipment components; Food processing and medical industry components.

### Delivery Programme

|                       |          |           |  |
|-----------------------|----------|-----------|--|
| Rod 1m long           |          |           |  |
| Diameter (mm):        | 5 (Min)  | 150 (Max) |  |
| Rod 3m long           |          |           |  |
| Diameter (mm):        | 5 (Min)  | 60 (Max)  |  |
| Plate 500mm & 1m long |          |           |  |
| Thickness (mm):       | 10 (Min) | 50 (Max)  |  |
| Width (mm):           | 625      |           |  |
| Plate 3m long         |          |           |  |
| Thickness (mm):       | 10 (Min) | 25 (Max)  |  |
| Width (mm):           | 625      |           |  |

### Distributor

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### Technical Specification

| Property                                    | ISO Methods | Units                              | PSU 1000             |
|---|-------------|------------------------------------|----------------------|
| Colour                                      | -           | -                                  | Yellow               |
| Specific gravity                            | 1183        | g/cm <sup>3</sup>                  | 1.24                 |
| Water absorption                            |             |                                    |                      |
| Saturation in air (23°C / 50% RH)           | -           | %                                  | 0.40                 |
| Saturation in water (23°C)                  | -           | %                                  | 0.85                 |
| Tensile strength* <sup>1</sup>              | 527         | N/mm <sup>2</sup>                  | 80                   |
| Tensile modulus of elasticity* <sup>1</sup> | 527         | N/mm <sup>2</sup>                  | 2700                 |
| Elongation at break* <sup>1</sup>           | 527         | %                                  | 10                   |
| Impact - Charpy* <sup>1</sup>               | 179/1eU     | kJ/m <sup>2</sup>                  | no break             |
| Impact - Charpy notched* <sup>1</sup>       | 179/1eA     | kJ/m <sup>2</sup>                  | 4                    |
| Hardness                                    |             |                                    |                      |
|   | Rockwell    | -                                  | M91                  |
|   | Shore D     | -                                  | -                    |
| Melt Point                                  | -           | °C                                 | T <sub>G</sub> = 190 |
| Max allowable service temp in air           |             |                                    |                      |
| for short periods                           | -           | °C                                 | 180                  |
| continuously for 20000hrs                   | -           | °C                                 | 150                  |
| Linear thermal expansion coefficient        | -           | K <sup>-1</sup> x 10 <sup>-5</sup> | 6.0                  |
| Thermal Conductivity                        | -           | W/(K.m)                            | 0.26                 |
| Flammability* <sup>2</sup> (3mm thickness)  | -           | -                                  | HB                   |
| Volume Resistivity* <sup>1</sup>            | IEC93       | Ohm.cm                             | 10 <sup>17</sup>     |
| Dielectric Strength* <sup>1</sup>           | IEC243      | kV/mm                              | 30                   |
| Outside applications - UV resistance        | -           | -                                  | B                    |
| Acids - Strong (pH < 3)                     | -           | -                                  | B                    |
| Alkalis - Strong (pH > 11)                  | -           | -                                  | A/B                  |
| Chlorinated Hydrocarbons                    | -           | -                                  | B/C                  |
| Hot Water                                   | -           | -                                  | A                    |

'A' - Acceptable service; 'B' - Limited service; 'C' - Unacceptable.

\*<sup>1</sup> Measured on dry test specimens (where applicable)

\*<sup>2</sup> Tests completed by Quadrant EPP, using UL test methods

Not all material sizes shown within the delivery programme section of this data sheet are available as standard. Please contact Quadrant Engineering Plastic Products UK for further details.

The data shown are typical values and are not intended to represent specifications. Their aim is to guide the user toward a material choice.