

# Halar 300 ECTFE

Medium Viscosity - Extrusion

Halar®

## Typical Physical Properties

| Typical Properties                        | Test Method                        | US Unit            | SI Unit  |                   |          |
|---|------------------------------------|--------------------|----------|-------------------|----------|
| <b>Physical Properties</b>                |                                    |                    |          |                   |          |
| Density @ 23°C/73°F                       | ASTM D792                          | lb/ft <sup>3</sup> | 105      | g/cm <sup>3</sup> | 1.68     |
| Water Absorption                          | ASTM D570                          | %                  | <0.1     |                   |          |
| Melt Flow Index @ 275°C, 2.16 kg          | ASTM D1238                         | g/10 min           | 2        |                   |          |
| <b>Mechanical Properties</b>              |                                    |                    |          |                   |          |
| <b>Tensile</b>                            | ASTM D638                          |                    |          |                   |          |
| Tensile Yield Strength                    | 23°C/73°F<br>2in/min (50mm/min)    | psi                | 4300     | MPa               | 30       |
| Tensile Break Strength                    |                                    | psi                | 7800     | MPa               | 54       |
| Elongation at Yield                       |                                    | %                  | 5        |                   |          |
| Elongation at Break                       |                                    | %                  | 250      |                   |          |
| Tensile Modulus                           |                                    | psi                | 240,000  | MPa               | 1655     |
| <b>Flexural</b>                           | ASTM D790                          |                    |          |                   |          |
| Flexural Strength                         | 23°C/73°F<br>0.1in/min (2.5mm/min) | psi                | 6800     | MPa               | 47       |
| Flexural Modulus                          |                                    | psi                | 245,000  | MPa               | 1690     |
| <b>Impact</b>                             | ASTM D256                          |                    |          |                   |          |
| Notched Izod Strength, 23°C/73°F          | 0.125 in (3.2 mm)                  | ft.lbf/in          | No Break | J/m               | No Break |
| Notched Izod Strength, -40°C/-40°F        |                                    | ft.lbf/in          | 2.0      | J/m               | 207      |
| <b>Hardness, Shore D</b>                  | ASTM D2240                         |                    | 75       |                   |          |
| <b>Hardness, Rockwell R</b>               | ASTM D785                          |                    | 90       |                   |          |
| <b>Abrasion Resistance, CS 17 (0.5kg)</b> | Taber                              |                    |          | mg/1000 rev       | 5        |
| <b>Friction Coefficient</b>               | ASTM D1894                         |                    |          |                   |          |
| Static                                    |                                    |                    | 0.2      |                   |          |
| Dynamic                                   |                                    |                    | 0.2      |                   |          |
| <b>Thermal Properties</b>                 |                                    |                    |          |                   |          |
| Melting Point                             | DSC                                | °F                 | 468      | °C                | 242      |
| Heat of Fusion                            |                                    | BTU/lb             | 18       | J/g               | 42       |
| Crystallization Point                     |                                    | °F                 | 432      | °C                | 222      |
| Crystallization Heat                      |                                    | BTU/lb             | 17       | J/g               | 40       |
| Specific Heat @ 23°C/73°F                 |                                    | BTU/lb-°F          | 0.23     | J/g.K             | 0.95     |

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H A L A R<sup>®</sup>

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| Typical Properties                                    | Test Method | US Unit                       |                        | SI Unit             |                        |
|---|-------------|-------------------------------|------------------------|---------------------|------------------------|
| <b>Thermal Properties (cont'd)</b>                    |             |                               |                        |                     |                        |
| DTUL, 66 psi (0.46 MPa)                               | ASTM D648   | °F                            | 195                    | °C                  | 90                     |
| DTUL, 264 psi (1.82 MPa)                              | ASTM D648   | °F                            | 150                    | °C                  | 65                     |
| Glass Transition Temperature (T <sub>g</sub> )        | DMA         | °F                            | 185                    | °C                  | 85                     |
| Brittleness Temperature                               | ASTM D746A  | °F                            | <-105                  | °C                  | <-76                   |
| Mold Shrinkage  | ASTM 955    | %                             | 2.5                    |                     |                        |
| Thermal Stability, 1% Mass Loss, N <sub>2</sub>       | TGA         | °F                            | 760                    | °C                  | 405                    |
| Linear Thermal Exp. Coefficient                       | ASTM D696   | 10 <sup>-6</sup> /°F          | 56                     | 10 <sup>-6</sup> /K | 100                    |
| Thermal Conductivity @ 40°C/104°F                     | ASTM C177   | BTU- in/h-ft <sup>2</sup> -°F | 1.05                   | W/m.K               | 0.15                   |
| <b>Electrical Properties</b>                          |             |                               |                        |                     |                        |
| Volume Resistivity @ 23°C, 50% RH                     | ASTM D257   | ohm- in.                      | 1.4 x 10 <sup>16</sup> | ohm.cm              | 5.5 x 10 <sup>16</sup> |
| Dielectric Strength @ 23°C/73°F<br>@ 3.2 mm thickness | ASTM D149   | V/mil                         | 350                    | kV/mm               | 14                     |
| Dielectric Constant, 23°C @ 10 <sup>6</sup> Hz        |             |                               | 2.57                   |                     |                        |
| <b>Fire Resistance</b>                                |             |                               |                        |                     |                        |
| UL-94 Flammability Test                               | UL-94       | Class                         | V-0                    |                     |                        |
| Limiting Oxygen Index                                 | ASTM D2863  | %                             | 52                     |                     |                        |

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