

# Elastollan® 1185A10FHF

## Technical Bulletin

## Polyether Type

Elastollan® 1185A10FHF is a polyether-based thermoplastic polyurethane (TPU) containing a non-halogenated fire retardant. It is specifically formulated for wire and cable jacketing, extruded profile, sheet and film applications. It exhibits excellent abrasion resistance, toughness, low temperature properties, hydrolytic stability and fungus resistance. Elastollan® 1185A10FHF is formulated to exhibit the flame retardancy characteristics as described in the table below. As with all TPU products, Elastollan® 1185A10FHF must be dried before processing. The drying step is required to maintain a low moisture content until the product enters the processing equipment. The water content must be less than 0.03% before and during processing. The typical drying conditions should be 2-4 hours @ 175°-195°F (80°-90°C). Elastollan® 1185A10FHF can be stored for up to 1 year in its original container. Containers should be stored in a cool and dry area.

| Properties                                 |                      | Test Method       | Typical Value             |                       |
|--|----------------------|-------------------|---------------------------|-----------------------|
|  |                      |                   | English                   | SI                    |
| <b>Physical</b>                            |                      |                   |                           |                       |
| Specific Gravity                           | gr./cm <sup>3</sup>  | ASTM D-792        | 1.23                      | 1.23                  |
| Hardness                                   | Shore A              | ASTM D-2240       | 88A                       | 88A                   |
| Flame Rating                               |                      | UL-94             | V0 - .120",<br>V2 - .060" | V0- 3mm,<br>V2- 1.5mm |
| LOI  | %                    | ASTM D-2863       | 25%                       | 25%                   |
| <b>Mechanical</b>                          |                      |                   |                           |                       |
| Tensile Strength (Ultimate)                | psi / MPa            | ASTM D-412        | 5300 psi                  | 36 MPa                |
| Tensile Stress                             | @100% Elong.         | ASTM D-412        | 1550 psi                  | 11 MPa                |
| Tensile Stress                             | @300% Elong.         | ASTM D-412        | 2600 psi                  | 18 MPa                |
| Elongation at Break                        | %                    | ASTM D-412        | 500%                      | 500%                  |
| Compression Set, %                         | 22 hrs @ 23°C        | ASTM D-395 (B)    | 25%                       | 25%                   |
| Compression Set, %                         | 22 hrs @ 70°C        | ASTM D-395 (B)    | 45%                       | 45%                   |
| E-Modulus                                  | psi / MPa            | ASTM D-412        | 3800 psi                  | 26 MPa                |
| Flexural Modulus                           | psi / MPa            | ASTM D-790        | 7000 psi                  | 48 MPa                |
| Tear Strength                              | lb./in. N/mm         | ASTM D-624, Die C | 550 lb./in.               | 96 N/mm               |
| Taber Abrasion Resistance / mg loss        | 1000 gr./H-18        | ASTM D-1044       | 100 mg                    | 100 mg                |
| DIN Abrasion Resistance                    | mm <sup>3</sup> loss | DIN 53516         | 35                        | 35                    |
| <b>Thermal</b>                             |                      |                   |                           |                       |
| Vicat Softening Point                      | °F/°C                | ASTM D-1525       | 162°F                     | 72°C                  |
| Glass Transition Temperature               | °F/°C                | DSC               | -40°F                     | -40°C                 |
| <b>Processing Conditions, Extrusion</b>    | °F/°C                |                   | 360 - 400°F               | 180 - 205°C           |
| <b>Processing Conditions, Inj. Molding</b> | °F/°C                |                   | 360 - 400°F               | - 205°C               |

The above values are shown as typical values and should not be used as specifications.

Molded plaques 0.080" thick were cured 20 hours at 100 °C before testing

**Caution:** Contact with product dusts from regrinding operations may cause temporary irritation of the eyes and the respiratory tract. Use with local exhaust. Under hot melt processing conditions (170-230°C), wear personal protective equipment to prevent thermal burns.

**First aid:** Eyes-Flush eyes with flowing water at least 15 minutes. If irritation develops, consult a physician. Skin-Skin contact with hot melt may cause thermal burns. Call a physician immediately. Inhalation-If vapors generated from the hot melt process are inhaled, move to fresh air. Aid in breathing. If breathing difficulties develop, see a physician immediately.

**In case of fire:** Use water fog, foam, CO<sub>2</sub>, or dry chemical extinguishing media. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

**Disposal:** Waste material, unused contents and empty containers must be disposed of in accordance with applicable local, state or federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

**In case of chemical emergency:** Call CHEMTRAC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents.

**Attention:** This product is sold solely for use by industrial institutions. Refer to our Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

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