# Elastollan® S90A10

**Technical Bulletin**

## Polyester Type

Elastollan® S90A10 is a polyester-based thermoplastic polyurethane (TPU). It exhibits excellent abrasion resistance and toughness, good hydrolytic stability, good heat, oil, fuel, and solvent resistance. As with all TPU products, Elastollan® S90A10 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 @ 175º-195ºF (80º-90ºC). Elastollan® S90A10 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** |
| **Physical** | | | | |
| Specific Gravity | gr./cm$^3$ | ASTM D-792 | 1.23 | 1.23 |
| Hardness | Shore A | ASTM D-2240 | 92A | 92A |
| MFI, g/10 min | 200ºC/21,6 kg | ASTM D-1238 | 20 | 20 |
| LOI | % | | | |
| | | | | |
| **Mechanical** | | | | |
| Tensile Strength (Ultimate) | psi / MPa | ASTM D-412 | 5600 psi | 38.6 MPa |
| Tensile Stress | @100% Elong. | ASTM D-412 | 1550 psi | 10.7 MPa |
| Tensile Stress | @300% Elong. | ASTM D-412 | 2900 psi | 20.0 Mpa |
| Elongation at Break | % | ASTM D-412 | 540% | 540% |
| Compression Set, % | 22 hrs@ 23ºC | ASTM D-395 (B) | 25% | 25% |
| Compression Set, % | 22 hrs@ 70ºC | ASTM D-395 (B) | 45% | 45% |
| E-Modulus | psi / MPa | ASTM D-412 | 6000 psi | 41.4 MPa |
| Flex Modulus | psi / MPa | ASTM D-790 | 7100 psi | 49.0 MPa |
| Tear Strength | lb./in. N/mm | ASTM D-624, Die C | 730 lb./in | 128.5 N/mm |
| Taber Abrasion Resistance / mg loss | 1000 gr./H-18 | ASTM D-1044 | 25 mg | 25 mg |
| | | | | |
| **Thermal** | | | | |
| Vicat Softening Point | °F/°C | ASTM D-1525 | 240 °F | 115 °C |
| Glass Transition Temperature | °F/°C | DSC | 15 °F | -10 °C |
| | | | | |
| **Processing Conditions, Extrusion** | °F/°C | | 370 - 410 °F | 190 - 210 °C |
| **Processing Conditions, Inj. Molding** | °F/°C | | 370 - 410 °F | 190 - 210 °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 ºC 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 (170-230ºC), 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, $CO_2$, 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 CHEMTREC 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.