

Elastollan® S90A55N

Technical Bulletin

Polyester Type

Elastollan® S90A55N is a polyester-based thermoplastic polyurethane (TPU). It exhibits excellent abrasion resistance and toughness, good heat, oil, fuel, and solvent resistance. As with all TPU products, Elastollan® S90A55N must be dried before processing. The drying step is required to both dry the granules and also 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® S90A55N 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
Mechanical				
Tensile Strength (Ultimate)	psi / MPa	ASTM D-412	5600 psi	38.6 MPa
Tensile Stress	@100%	ASTM D-412	1550 psi	10.7 MPa
Tensile Stress	@300%	ASTM D-412	2900 psi	20.0 Mpa
Elongation at Break	%	ASTM D-412	540%	540%
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	7100 psi	49.0 MPa
Flexural Modulus	psi / MPa	ASTM D-790	7800 psi	53.8 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	270 °F	130 °C
Glass Transition Temperature	°F/°C	DSC	15 °F	-10 °C
Processing Conditions, Extrusion		°F/°C	370 - 410 °F	
Processing Conditions, Inj. Molding		°F/°C	380 - 420 °F	
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, CO₂, 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.

