# Elastollan® 688A50N

**Technical Bulletin**    **Polyester Type**

Elastollan® 688A50N is part of a new series of film grade polyester-based thermoplastic polyurethanes (TPU). These products are formulated for high transparency, relative ease of processing, and low yellowness index. It exhibits excellent abrasion resistance, toughness and transparency. With respect to processing it is generally easy to process and has a very wide processing window; in some cases as high as 25 to 30°F. Along with these attributes, it also conforms to FDA food contact as described in book 21, section 177.2600 and 177.1680, for both wet and dry food contact applications respectively. As with all TPU products, Elastollan® 688A50N must be dried before processing. 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® 688A50N 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 | 1.21 | 1.21 |
| Hardness | Shore A/D | ASTM D-2240 | 88A | 88A |
| | | | | |
| **Mechanical** | | | | |
| Tensile Strength (Ultimate) | psi / MPa | ASTM D-412 | 4535 psi | 31 MPa |
| Tensile Stress | @100% Elong. | ASTM D-412 | 920 psi | 6.3 MPa |
| Tensile Stress | @300% Elong. | ASTM D-412 | 1865 psi | 12.8 MPa |
| Elongation at Break | % | ASTM D-412 | 650% | 650% |
| 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 | 2300 psi | 16 MPa |
| Tear Strength | lb./in.  N/mm | ASTM D-624, Die C | 535 lb./in. | 90 N/mm |
| Taber Abrasion Resistance / mg loss | 1000 gr./H-18 | ASTM D-1044 | 25 | 25 |
| | | | | |
| **Thermal** | | | | |
| Vicat Softening Point | °F/$^o$C | ASTM D-1525 | 167 °F | 75 $^o$C |
| | | | | |
| **Processing Conditions, Extrusion** | °F/$^o$C | | 350 - 385 °F | 175 – 195 $^o$C |
| **Processing Conditions, Inj. Molding** | °F/$^o$C | | 350 - 430 °F | 175 – 220 $^o$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*

**BASF**