



**MATERIAL
WIZARD™**

MAGIC SOLUTIONS REAL RESULTS

Exaflex® TPU 90A

Technical Data Sheet | Supplied by Material Wizard



Technical DataSheet

Exaflex® TPU 90A

Exaflex TPU 90A is a thermoplastic polyurethane elastomer (TPU) recognized for its remarkable abrasion resistance, flexibility, and dynamic load-bearing capabilities. This elastomer exhibits outstanding performance in both low and high-temperature environments. A distinguishing trait of Exaflex TPU 90A is its inherent resistance to hydrolysis, microbial growth, and many mineral-based oils. In addition, this polyurethane elastomer demonstrates excellent melt flow properties, promoting ease of processing and efficient recyclability of well-segregated production waste. Thermoplastic polyurethane offers a unique balance of flexibility, durability, and resilience. Its Shore hardness denotes a relatively high rigidity while still maintaining a degree of flexibility, making it suitable for various applications

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Product Type

TPU > TPU-ARES

Applications/ Recommended for

Injection Molding >

Footwear
Seals and Gaskets
Sporting Goods
Consumer Electronics
Agriculture

Extrusion >

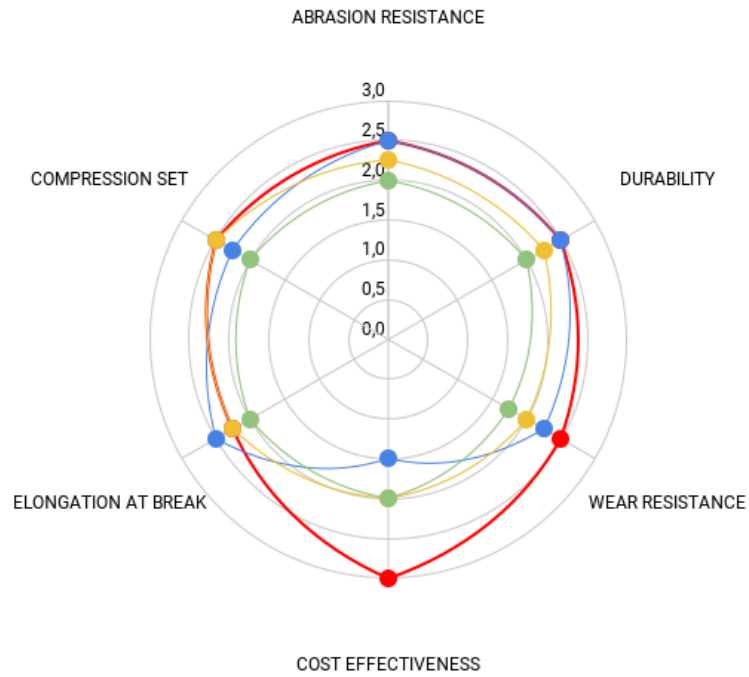
Automotive Components
Industrial Hoses and Tubes
Medical Devices
Conveyor Belts
Wire and Cable Sheathing
Specialty Adhesives and Films

Key Features

Superior durability and wear resistance
High tensile and tear strength
Flexibility across a broad temperature range
Excellent resistance to oils, greases, and various chemicals
Hydrolysis-resistant
Outstanding abrasion resistance
Recyclable and environmentally friendly

Comparative Material Analysis

- **Exaflex TPU 90A**
- **Elastollan 1190A**
- **Desmopan 1090A**
- **Pellethane 2103-90AE**



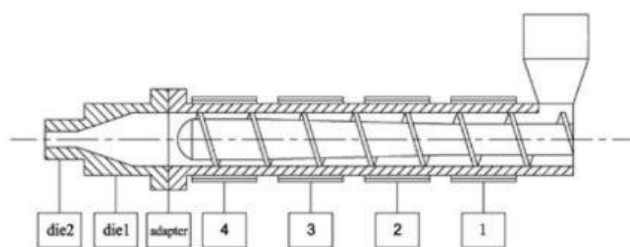
Exaflex® TPU 90A Typical Properties

Physical	Value & Unit	Test Condition	Test Method
Hardness	92	Shore A	ASTM D2240
Specific Gravity	1.23 g/cm ³	At 23°C	ASTM D792
Melt Volume-Flow Rate (MVR)	50 cm ³ /10min	200°C/5kg	ASTM D3418
Hydrolysis Resistance	77%	80°C, 95%RH	

Mechanical	Value & Unit	Test Condition	Test Method
Elongation At Break	648%		ASTM D412
Tensile Strength at Break	37 MPa		ASTM D412
Tensile Stress at 100%	9 MPa		ASTM D412
Tear Strength	131 kN/m	(Die C)	ASTM D624
Abrasion	36 mm ³	(Method A: non-rotate)	ASTM D5963

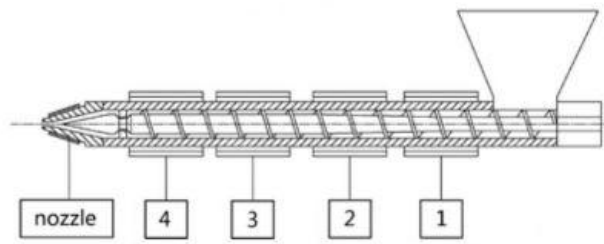
Processing Recommendations

Processing Conditions > Injection Molding:



	Zone1	Zone2	Zone3	Zone4	Adaptor	Die1	Die2
°C	175	180	185	190	195	195	190

Processing Conditions > Extrusion:



	Zone1	Zone2	Zone3	Zone4	nozzle
°C	180	185	190	195	190

Processing Recommendations > Drying:

Our materials are supplied pre-dried in moisture-guarded bags. However, dry materials will rapidly absorb moisture when exposed to the atmosphere. For recyclable products, it must be dried before processing. Drying the material at 90-100 °C for 3-4 h in a circulating air or dehumidified air dryer is recommended. The moisture content must be lower than 0.02% before and during processing.

Processing Recommendations > Troubleshooting:

This TPU90A can be both extruded and injection-molded. Typical processing conditions are listed in the following tables and figures. You can contact us for further inquiries about products or troubleshooting.

Disclaimer

Standard Disclaimer

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and are subject to change without notice. It is expressly understood and agreed that you assume and hereby release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Typical Properties data is provided as general information only. Property values are approximate and are not part of the product specifications.

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