Whitepaper

Envalior
Imagine the Future

MANUFACTURING *SOFT TOUCH COMPONENTS* WITH ARNITEL®

The demand for soft touch components used in consumer facing applications has increased significantly in recent years.

Users are increasingly engaged with their smart phones, smart watches, and other personal devices—wherever they are—exposing soft touch components to prolonged use, weather damage, and increased exposure to everyday chemicals such as cosmetics and sunscreen.

Product designers and manufacturers increasingly rely on thermoplastic elastomer (TPE) material solutions to produce and deliver highly durable and high-quality soft touch parts. Compared to the thermoplastic polyurethane (TPU) materials traditionally used for soft-touch manufacturing, TPEs offer better resistance to warpage and fatigue, as well as better protection against UV, chemical, and oil exposure. They're also more effective for producing end products that retain a long-lasting smooth and silky feel—despite increased usage both indoors and out.

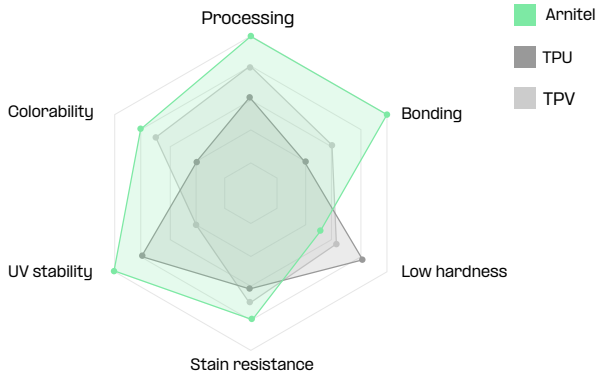
Envalior's Arnitel® is an industry-leading TPE material that offers exceptional durability, strength, comfort, and design flexibility. With more than 30 years' use in consumer electronics manufacturing, it provides best-in-class processing capabilities, and excellent elastic behavior.

Arnitel offers:

- Broad tactile properties with superior touch and feel
- Broadest operating temperature range from −45°C to 150°C
- High tear and abrasion resistance
- High fatigue endurance after 255 compression cycles
- Excellent over-molding capabilities to metal, polycarbonate (PC), polybutylene terephthalate (PBT), and acrylonitrile butadiene styrene (ABS)
- Easy processing during injection molding
- An eco-friendly grade, Arnitel Eco, made from 50% renewable sources

ENGINEERED FOR *BEST-IN-CLASS DESIGN CAPABILITIES*

Arnitel offers superior processing capabilities and reduced cycle times through its simple, high-strength structure that combines elastomer and thermoplastic links. The material demonstrates best-in-class resistance to stains, chemicals and UV exposure; excellent overmolding capabilities, and superior color stability compared to competing thermoplastic vulcanizates (TPV) and TPU.



Properties of select Arnitel grades

	Grade	Hardness Shore	Modulus Mpa	Tear Strength kN/m	Melt temp °C	Melt Flow Index cm³/10min@230C	Bio Content %
Arnitel® Care L140E	Eco L400	34D	50	75	160	45	52
	Eco L460	45D	85	113	180	39	43
	EE8479	22D/78A	20	68	180	32	–
	EL250	25D/85A	25	68	180	45	–
	EM400	33D	40	82	195	33	–
	EM460	40D	85	120	190	46	–
Akulon® Care K1U	Eco L700	65D	340	172	210	50	22
	EL740	70D	800	215	220	18	–

About the technology

Envalior's Arnitel is a high-performance TPE that offers a smooth touch combined with excellent processing capabilities, design flexibility, and chemical and UV resistance. Electronic and automotive parts manufacturers worldwide rely on a broad range of material grades from Envalior.

To learn more, contact us via Envalior.com.

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