

INNOVATIVE SOLUTION FOR FOOTWEAR

APILON[™] 52 LIGHT

Expanded TPU



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APILON™ 52 LIGHT is a novel thermoplastic material that offers an outstanding combination of performance, aesthetics and mostly lightness.

APILON™ 52 LIGHT is suitable for microcellular outsoles and midsoles with a density range between 0.45 and 0.65 g/cm³ depending on the amount of blowing agent and the design of the mold.

Characteristics

- Softness
- Lightness
- Good abrasion resistance
- Flexibility
- Millability
- Silky hand
- Ability to reproduce the finest detail and surface textures (high aesthetic results)
- Colorability
- Long-term bond reliability to upper materials
- Chemical adhesion on TPU outsoles
- Recyclability

Information for Processing

APILON™ 52 LIGHT comprises a system of components that can be mixed, dried and fed to the common injection-molding unit:

- Basic TPU (APILON™ 52 Light)
- Blowing agent masterbatch DP0997/3 (see table below for usage percentage, 6% recommended to maximize cost, properties, lightness)
- APICOLOR™ Color Masterbatches designed for expanded TPU (B/E grades)

Quantity of colorant or additive could affect processing and/or properties.

Essential molding machine requirements:

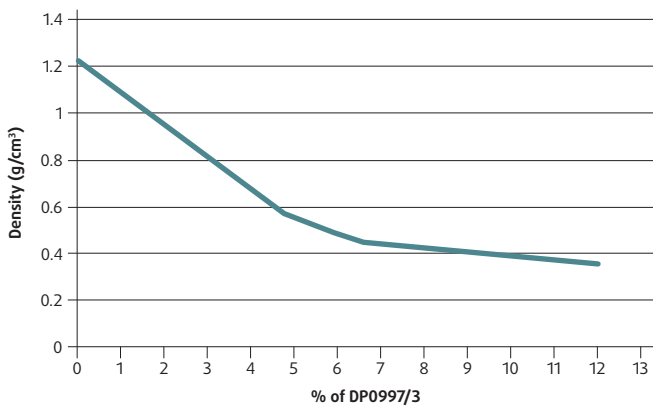
- Accurate temperature control
- Non-return valve
- Shut-off nozzle
- Machine pressure >150 bar
- Mold temperature control
- High injection speed capacity

Correct mold design will guarantee success, optimum performance and cost saving.

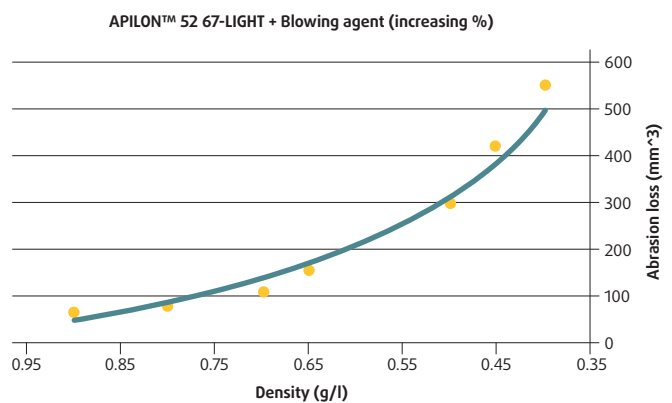
APILON™ 52 LIGHT Product Portfolio

	METHOD	UNIT	67-LIGHT + BLOWING AGENT	63-LIGHT + BLOWING AGENT	58-LIGHT + BLOWING AGENT	53-LIGHT + BLOWING AGENT
Hardness	ASTM D2240	Shore A	50	45	40	37
Density	ASTM D792	g/cm ³	0.6	0.6	0.6	0.6
Tensile strength	ASTM D638	MPa	6	5	4.5	2.9
Elongation at break	ASTM D638	%	>650	>650	>650	>650
Abrasion resistance	ISO 4649	mmc	<250	<250	<250	<300

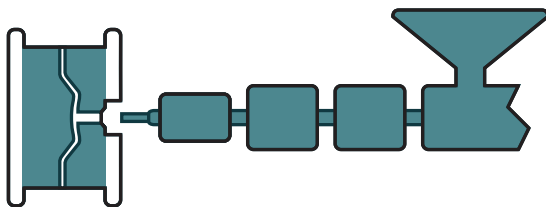
Density in Dependence of Amount of Blowing Agent DP0997/3



Abrasion in Dependence of Final Density



Processing Parameters



MIN °C	28	150	145	140	130
MAX °C	35	170	165	160	150

The processing details shown above are intended only as a guide. Actual conditions will vary considerably from machine to machine and will very much depend on the moldings being produced.

Recyclability

APILON™ 52 LIGHT can be recycled even after foaming and expansion. This contributes to the high sustainability of this product. The maximum recommended level of regrind is 20%. Regrind drying is required prior to use.

Storage

We recommend storing the product in a cool, dry and ventilated place. Exposure to high temperatures, humidity, open flames or any other heat source has to be avoided. The product is hygroscopic, therefore, when the original packaging is opened, an adequate drying treatment is required. The product is stable at 23°C for 12 months.

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