

A Material Difference

Mediprene® A

TPEs for Medical Multi-Component Applications

2K



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Introduction

Overmoulding is a technique that allows the production of finished parts in soft and hard material combinations without trimming or assembly. It offers many design and product advantages, allowing designers to differentiate products while meeting important user and patient demands, including soft-touch and cushioning for greater comfort and non-slip surfaces with improved grip for safety. Mediprene TPE materials are PVC, silicone and latex free, making them allergen free and a viable alternative to PVC based compounds.

The right TPE formulation is the key to a safe and successful medical product. When a standard formulation does not meet the needs of a unique application, we will apply our expertise in formulating a custom solution. In this guide we show typical properties for our most common grades, these tables do not list all available properties and materials.

Please use this guide as an introduction to the Mediprene A TPEs and _____ to discuss your specific requirements.

Adhesion to a Variety of Substrates

The standard Mediprene 500M range bonds very well to polyolefins like polyethylene (PE) and polypropylene (PP).

However, in several medical applications transparent engineering plastics such as ABS, PC, PETG and SMMA (and their blends) are used.

The Mediprene A2 series has been developed to address demands for medical grade TPEs that bond well to these substrates.



Special Features

- Adhesion to substrates such as ABS, PC, PETG and SMMA
- Opaque
- PVC, silicone and latex free
- Hardness from 35 to 65 Shore A
- Medically approved raw materials
- Production site accredited to ISO 13485
- Following the VDI 2017 guideline on Medical Grade Plastics
- Sterilizable with gamma, EtO and steam
- Flexibility over broad temperature range
- Easy to colour
- Resistant to many fluids used in the healthcare environment
- Short cycle times

Regulatory Compliance

All Mediprene A series TPEs fulfil a strict raw material selection policy. The raw materials are food contact compliant (FDA 21 CFR and Commission Regulation (EU) No 10/2011) and have a proven level of biocompatibility:

- The styrenic block copolymer has passed USP Class VI
- The paraffinic oil is a medicinal white oil, complying with the European Pharmacopoeia for liquid paraffin and USP for mineral oils
- The plastic component has passed the USP Class VI tests

Note: Mediprene grades are not to be used in any devices or materials intended for implantation in the human body.

[Further Information on Raw Material Policy + Change Control >](#)

Typical Applications

Mediprene thermoplastic elastomers can be used in various applications such as seals, membranes, closures, gaskets, grips + handles, soft-touch features and medical packaging.

We are continuously working with our customers to develop new applications for Mediprene compounds.



Typical Mediprene A2 TPE Grades

Adhesion to ABS, PC, PETG and SMMA

Grade	Hardness ¹ ASTM D2240 (4mm) Shore A	Colour	Density ASTM D792 g/cm ³	Tensile Strength ASTM D638 MPa	Stress at 100% Strain ASTM D638 MPa	Stress at 300% Strain ASTM D638 MPa	Elongation at Break ASTM D638 %	Tear Strength ASTM D624 N/mm	MFR ASTM D1238 g/10 mm	Peel Force ¹ ASTM D903 N/mm
Mediprene A2 500350M-04	35	Natural	0.94	3	1.0	2.0	450	15	20	2.5
Mediprene A2 500450M-04	45	Natural	0.96	4	1.3	2.4	600	18	12	Cohesive ²
Mediprene A2 500550M-04	55	Natural	0.96	4	1.9	3.3	500	26	10	5
Mediprene A2 500650M-04	65	Natural	0.98	5	2.6	4.2	500	30	10	Cohesive ²

¹) 90° peel tests conducted at 100 mm/min with Mediprene A2 grade (2.5 mm thickness, 25 mm width) overmoulded onto ABS (Terlux 2802HD)

²) Cohesive means that bonding strength is greater than tensile strength

Processing

The material has excellent processing characteristics and can be processed using standard thermoplastic fabricating methods, including injection moulding and extrusion.

Processing Temperatures

Barrel Temperatures °C

Mould Temperatures °C

Injection Moulding

210 to 250

30 to 60

Extrusion

210 to 250

Service Temperature Range -50 to +125°C (unstressed material)

To achieve optimal bonding, it is important that the correct processing temperatures are used. The recommended melt temperature for the Mediprene A2 series is 220 to 250°C. A steep temperature profile, starting with 180°C at the hopper should be applied. The surface temperature of the engineering plastic should be approximately 60°C.

[Further TPE Processing + Problem Solving Guides >](#)

More Mediprene TPE Ranges

Click for more information

Mediprene® 500M

Standard Series



Mediprene® 500M

Transparent Series



Mediprene® 500M

Plunger Seal Series



Mediprene® BM



Mediprene®



Mediprene® OF



Mediprene®

Solvent Bondable



Mass Balance



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