

Mediprene® A

TPEs for medical multi-component applications

2K

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INTRODUCTION

Overmoulding is a powerful 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.

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 our Mediprene A series and [contact us](#) to discuss your specific requirements.

KEY PROPERTIES

- 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
- Sterilizable with gamma, EtO and steam
- Flexibility over broad temperature range
- Easy to colour
- Resistant to many fluids used in the health care environment
- Short cycle times

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 like ABS, PC, PETG and SMMA (and their blends) are utilised. The Mediprene A2 series has been developed to address demands for medical grade TPEs that bond well to these substrates.

REGULATORY COMPLIANCE

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

- The styrenic block copolymer is selected from a series of rubbers where representative grades have passed USP Class VI
- The paraffinic oil is a medicinal white oil complying with the EP for liquid paraffin and USP 24 for mineral oils
- The plastic component fulfils the requirements of USP Class VI

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

TYPICAL APPLICATIONS

- Seals
- Membranes
- Closures
- Gaskets
- Grips and handles
- Soft-touch features
- Medical packaging

TYPICAL MEDIPRENE A2 GRADES

ADHESION ONTO ABS, PC, PETG & SMMA

Material	Hardness 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 230°C/2.16kg ASTM D1238 g/10 min	Peel Force ¹ ASTM D903 N/mm
Mediprene A2 500350M	35	Natural	0.94	3	1.0	2.0	450	15	20	2.5
Mediprene A2 500450M	45	Natural	0.96	4	1.3	2.4	600	18	12	Cohesive ²
Mediprene A2 500550M	55	Natural	0.96	4	1.9	3.3	500	26	10	5
Mediprene A2 500650M	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 conventional thermoplastic fabricating methods, including injection moulding and extrusion.

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

Processing Temperatures	Injection Moulding	Extrusion
Barrel Temperatures °C	210 - 250	210 - 250
Mould Temperatures °C	30 - 60	

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 - 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 information is available to download from our website →](#)

WANT TO LEARN MORE?

Email the medical team at
mediprene@hexpolTPE.com

or visit www.mediprene.com

[Other Mediprene Product Series →](#)

[Mediprene 500M : Standard Series](#)

[Mediprene 500M : Transparent Series](#)

[Mediprene Oil Free Series](#)

[Mediprene Sterilization Guide](#)

[Mediprene 2 Year Supply Guarantee](#)

ABOUT HEXPOL TPE



HEXPOL TPE is a global compounding group specialising in Thermoplastic Elastomers (TPE) for key industries such as consumer, medical, packaging, automotive and construction. We have a core belief in being the easiest company to do business with. That's why we invest in our operations, teams and technologies to offer our customers the most reliable, relevant and cost-effective TPE compounds, backed by highly responsive support, technical know-how and application expertise. Our teams work together, across boundaries, applying the knowledge, experience and talents we have all around the world to meet the needs of our customers.

All the information about chemical and physical properties consists of values measured in tests on injection moulded test specimens. We provide written and illustrated advice in good faith. This should only be regarded as being advisory and does not absolve the customers from doing their own full-scale tests to determine the suitability of the material for the intended applications. You assume all risk and liability arising from your use of the information and/or use or handling of any product. Figures are indicative and can vary depending on the specific grade selected and the production site. HEXPOL TPE makes no representations, guarantees, or warranties of any kind with respect to the information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. We retain the right to make changes without prior notice. HEXPOL TPE makes no warranties or guarantees, express or implied, respecting suitability of HEXPOL TPE's products for your process or end-use application. Mediprene® is a registered trademark, property of the HEXPOL TPE group of companies.