

A Material Difference

Mediprene Mass Balance TPE

Medical TPE Materials with Bio-Attributed Content
According to the Mass Balance Principle.



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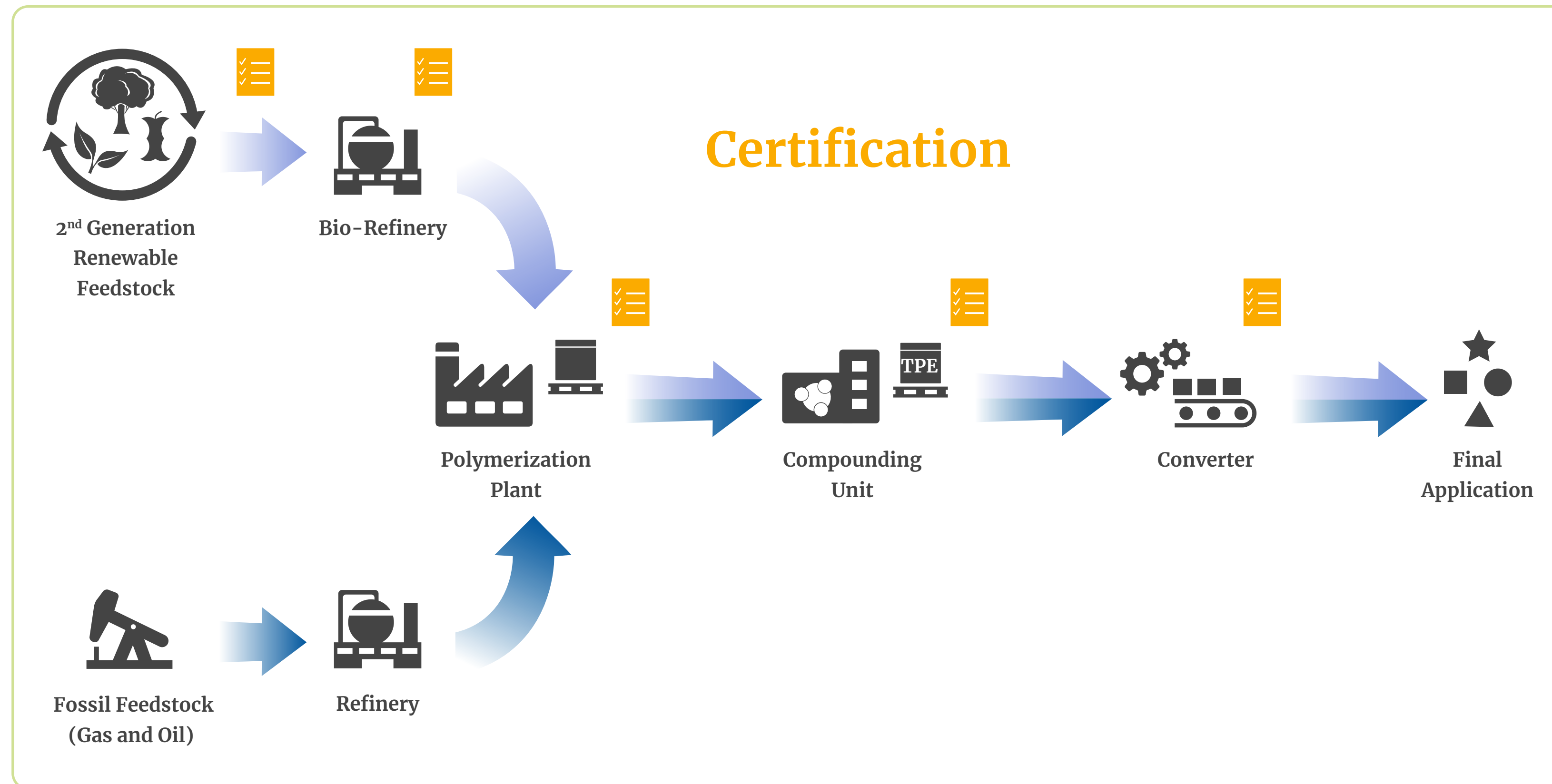
Introduction

Mediprene Mass Balance Thermoplastic Elastomers are medical TPE materials with bio-attributed content according to the mass balance principle. They were developed to enable the shift away from fossil resources and support the reduction of greenhouse gas emissions, while ensuring the quality, properties and regulatory status remain the same.

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 Mass Balance TPEs and [contact us](#) to discuss your specific requirements.

What is Mass Balance?



Mass balance allows for a gradual increase of the bio share using existing infrastructure with the target to reduce the use of fossil resources step by step.

It is an approach to account for materials entering and leaving a system.

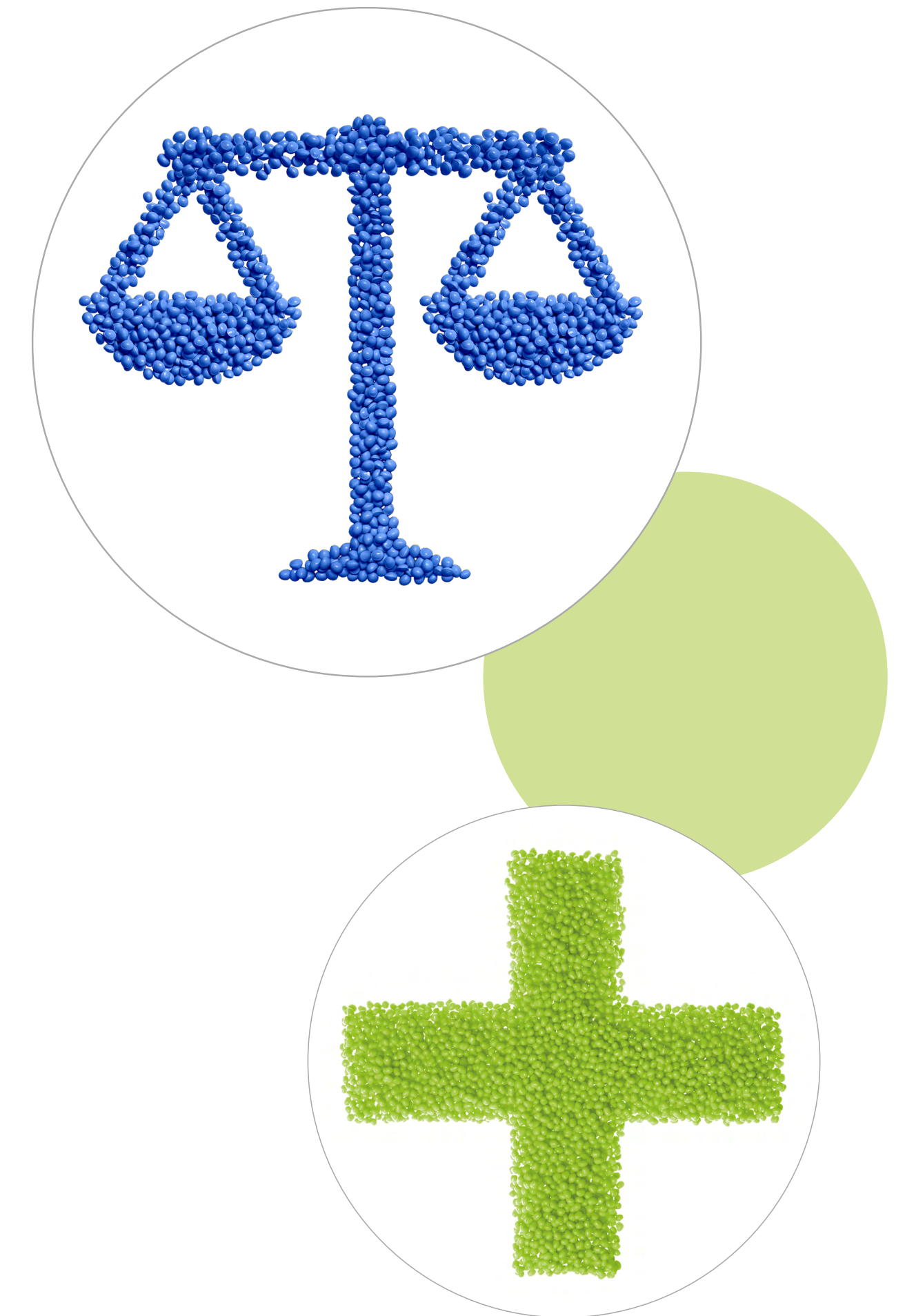
Each company along the supply chain needs to be certified, and sustainability declarations follow the material.

Why Mass Balance ?

- Enabling a gradual shift from virgin and fossil feedstocks.
- No need for investments in new equipment and processes since it is a drop-in solution.
- ISCC Plus certification through the value chain guarantees transparency and accuracy.
- Allows for the use of 2nd generation feedstocks for high quality polymers.

Why Mass Balance for Medical?

- It will be a drop in solution.
- The technical properties, chemical composition and regulatory status of the compound will be the same as for the corresponding fossil grade.
- With this approach a contribution can be made towards a more sustainable medical device.



Product Carbon Footprint (PCF)

A Product Carbon Footprint (PCF) is a method for determining the climate impact of a product.

It is the sum of greenhouse gas (GHG) emissions and removals in a product system, expressed as carbon dioxide equivalents (CO₂e) using the single impact category of climate change.

We can provide cradle-to-gate Product Carbon Footprints. Our PCF methodology is built upon the principles of ISO 14067:2018 for the carbon footprint of products, which is associated with the principles and requirements of ISO standards 14040:2006 and 14044:2006 for life cycle assessment.

The PCF provides CO₂ equivalent data per kg of TPE, calculated from raw materials and their transportation, product manufacturing and packaging.



Certification

Third-party verification is required to audit the mass balance allocation and allow for correct product labelling.

Our Swedish site was among the first TPE compounders to achieve the International Sustainability and Carbon Certification (ISCC PLUS).

ISCC PLUS is a global certification scheme providing traceability along the supply chain and guarantees correct and transparent use of the mass balance approach.

Certified companies must meet specific environmental and social standards, creating a chain of custody.



[Find out more about ISCC PLUS >](#)

Typical Applications

Mass balance versions of our Mediprene 500M standard TPE series are available, as well as customised grades.

Typical applications include airway management, face masks, resealable membranes, IV systems, seals and connectors.



Typical Mediprene Mass Balance Grades

Grade	Hardness ¹ ASTM D2240 Shore A or D	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
Mediprene X 500050M	5 A	Translucent	0.89	2	0.1	0.2	1000	14	3 ²
Mediprene X 500120M	12 A	Translucent	0.89	4	0.2	0.5	900	23	30 ³
Mediprene X 500200M-03	20 A	Translucent	0.89	4	0.3	0.8	800	12	3 ⁴
Mediprene X 500250M-03	25 A	Translucent	0.89	2	0.4	0.9	550	12	5 ⁴
Mediprene X 500300M-03	30 A	Translucent	0.89	5	0.7	1.3	700	15	20 ⁴
Mediprene X 500350M-03	35 A	Translucent	0.89	6	0.8	1.5	800	16	0.5 ³
Mediprene X 500400M-03	40 A	Translucent	0.89	6	1.0	1.8	700	20	10 ⁴
Mediprene X 500450M-03	45 A	Translucent	0.89	6	1.1	2.1	650	21	1 ⁴
Mediprene X 500520M-03	52 A	Translucent	0.89	7	1.4	2.6	600	24	0.5 ⁴
Mediprene X 500600M-03	60 A	Translucent	0.89	10	1.8	3.1	700	30	1.5 ⁶
Mediprene X 500650M-03	65 A	Translucent	0.89	10	2.2	3.6	700	37	2.5 ⁴
Mediprene X 500700M-03	70 A	Translucent	0.89	13	2.5	3.7	700	36	5 ⁴
Mediprene X 500750M-03	75 A	Translucent	0.89	15	3.1	4.5	700	42	2 ⁴
Mediprene X 500800M-03	80 A	Translucent	0.89	15	3.7	5.2	700	45	6 ⁴
Mediprene X 500850M-03	85A	Translucent	0.89	20	4.9	6.5	700	60	1 ³
Mediprene X 500900M-03	90 A	Translucent	0.89	19	5.4	7.0	700	63	1 ³
Mediprene X 520350M-03	35 D	Translucent	0.89	24	6.6	8.0	700	70	6 ⁴
Mediprene X 520400M-03	40 D	Translucent	0.89	25	7.9	9.2	700	85	10 ⁴
Mediprene X 520450M-03	45 D	Translucent	0.89	33	9.9	12	700	128	8 ⁴
Mediprene X 520580M-03	58 D	Translucent	0.89	36	16	16	750	175	6 ⁴

¹ 4mm, after 15 seconds ² 190°C/0.325kg ³ 190°C/2.16kg ⁴ 190°C/5kg ⁵ 150°C/2.16kg ⁶ 230°C/5kg

Processing

Mediprene Mass Balance TPEs can be processed using conventional thermoplastic equipment for injection moulding, extrusion etc. Processing temperatures normally range from 180°C to 210°C. The materials in the standard series are not hygroscopic and do not need predrying.

SERVICE TEMPERATURE RANGE : From -50 to max +125°C (depending on hardness)

COLOURING RECOMMENDATIONS : For Mediprene compounds, polyolefin based masterbatch is recommended for colouring. Not to violate the high medical status of the Mediprene compound, the colour masterbatch should have passed USP Class VI or comparable tests.


WASTE DISPOSAL : All Mediprene TPEs are recyclable in closed loop systems and, where possible, reprocessable during manufacturing.

[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® A

2K

Mediprene®



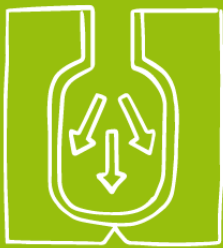
Mediprene® OF



Mediprene®
Solvent Bondable



Mediprene® BM



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T/P.A. CAPACITY

Across our Sweden, UK, German, China & North America operations. [Our companies](#)

50+
YEARS HISTORY

We've a proud history in flexible polymer compounding & were among the **1st to produce TPEs** in Europe. [About us](#)

34,795+
FORMULATIONS

A comprehensive portfolio in TPE, TPS, TPO, TPU, TPV, soft PVC & Biobased technologies. Learn more about [Our products](#)

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