



MOCOM

❖ Tedur® IM Tough PPS

Thanks to its outstanding properties, Tedur® PPS compounds offer a wide range of applications, particularly in the automotive and electronics industries. PPS is characterized by its excellent chemical resistance, high continuous service temperatures of up to 240°C and its exceptional dimensional stability. It also has a very low creep tendency, which makes it ideal for demanding environments.

Traditionally, polyphthalamide (PPA) is often used in applications where increased toughness is required. However, PPA has some disadvantages, such as a high water absorption, lower maximum service temperatures and a lower chemical resistance compared to polyphenylene sulfide (PPS).

Tedur® PPS is now also available as an impact modified version (IM). This combines the advantages of a glass fiber reinforced PPS with those of PPA:

The glass fiber reinforcement significantly increases the stiffness and dimensional stability of the material, making it ideal for structural applications under high mechanical loads. In addition, the impact

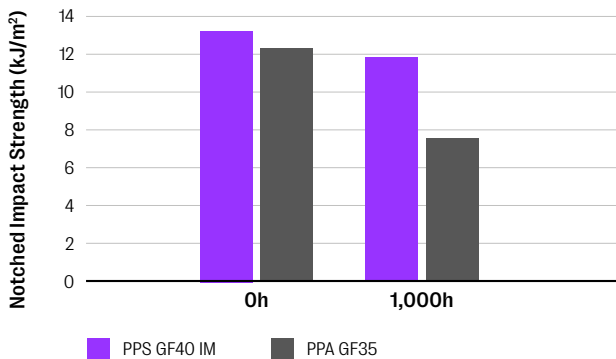
modification ensures improved impact and shock resistance, which is particularly advantageous in applications with dynamic or shock loads. This material modification makes the PPS more robust and versatile without compromising its excellent properties such as high temperature resistance and chemical resistance.

Tedur® IM: advantages at a glance

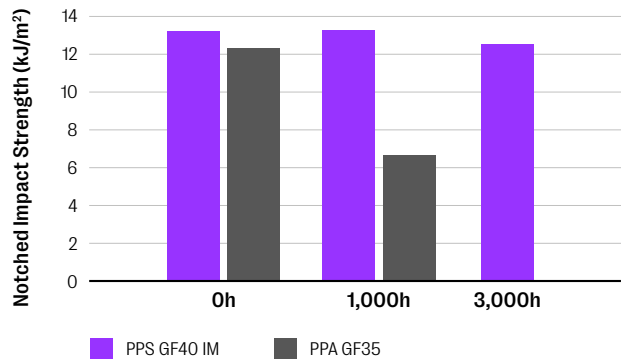
- Improved toughness even after storage under different conditions
- Very high continuous service temperature
- Excellent resistance to hydrolysis and chemicals
- Very low water absorption
- Low creep tendency even at elevated temperatures

Property	Unit	Reference Tedur® L 9510-1U	Tedur® L PPS 2040 IM BK178-22	Competitors	
		PPS GF40	PPS IM GF40	PPA GF35 (6T/6) dry/conditioned	PPA GF35 (9T) dry/conditioned
Tensile modulus	MPa	15,000	11,000	10,900 / 11,200	11,500 / 11,500
Tensile strength	MPa	155	120	186 / 164	215 / 200
Tensile elongation @ break	%	1.4	2.5	3 / 2.7	2.6 / 2.5
Impact strength	kJ/m ²	30	52	85 / 75	85 / -
Notched impact strength	kJ/m ²	7	15	12 / 11	9 / -
Flammability UL 94	1.5 mm	V0	HB	HB	HB

Heat storage 1,000h @200°C Notched Impact Strength

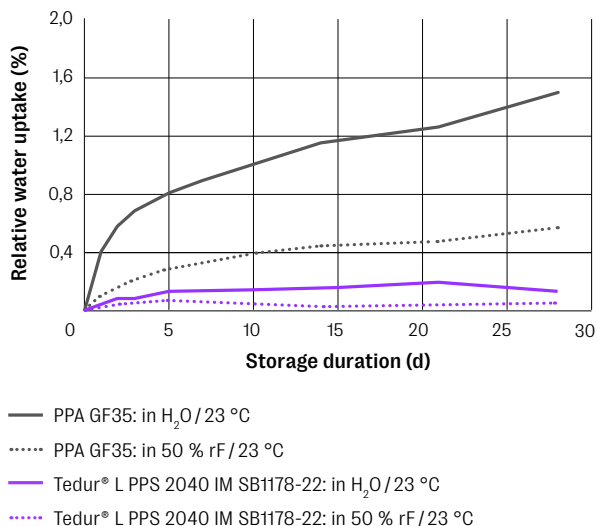


Oil storage 3,000h @160°C Notched Impact Strength



The low water absorption compared to PPA makes Tedur® IM particularly interesting for applications in humid environments.

Water uptake (ISO 62) at different conditions



Storage in oil (3,000h @160°C) confirms the good chemical resistance of Tedur® PPS GF40 IM. The compound retains an impact strength of 13 kJ/m² even after 3,000h in oil at 160°C. Whereas the notched impact strength of PPA GF35 has halved to 6 kJ/m² after 1,000 hours. A similar behavior can be observed after heat storage for 1,000h at 200°C. The notched impact strength and also the stiffness and strength remain at a high level, while there is a significant drop in the PPA.

Tedur® IM can be processed in the same way as conventional PPS. Its mechanical properties remain stable even at low processing temperatures.

In addition to the Tedur® L PPS 2040 IM BK178-22, the Tedur® L PPS 2030 IM BK177-22 with 30% glass fiber is included in the portfolio.

Please contact us for more technical information.

MOCOM Compounds GmbH & Co. KG

Mühlenhagen 35 | 20539 Hamburg

T +49 40 999960-399 | sales@mocom.eu

T +49 40 999960-398 | technical@mocom.eu

mocom.eu

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