QUALITY REINFORCES.

Product information
Milled Fiber

Envalior
Imagine the Future

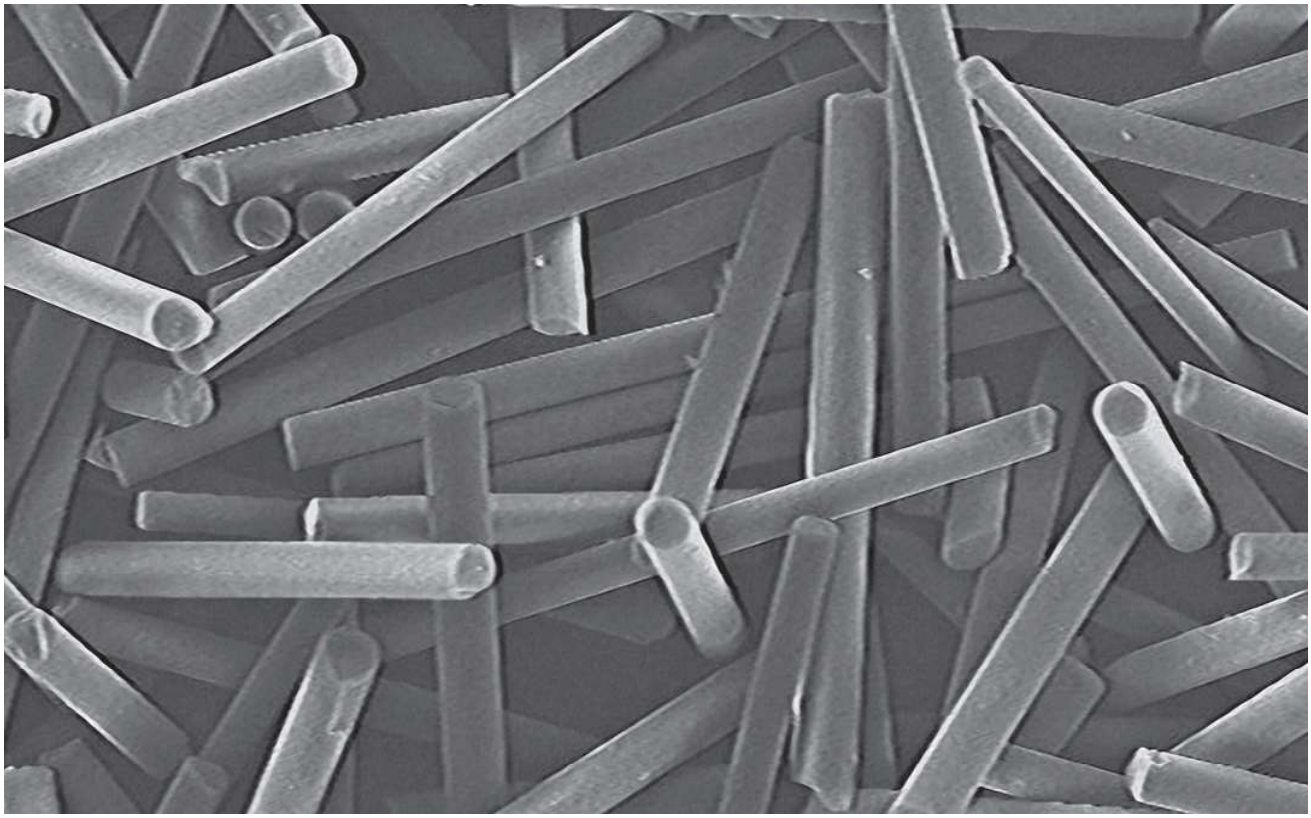
ENVALIOR *MILLED FIBER*

Use of ENVALIOR Milled Fiber
Our Milled Fibers are compatible with various types of materials, typically these are thermoset materials (e.g. polyurethane, polyester, epoxy, phenolic, melamine), thermoplastic resins and other materials such as ceramics. They are used in different application fields, such as automotive components, electrical connectors, friction products, coatings, adhesives and compounds as a filler with reinforcing properties. Milled Fibers enhance dimensional stability and stiffness, while minimising the effects of warpage and distortion.

ENVALIOR MF 7980 without surface treatment is excellent for reinforcing integral skin polyurethane foams produced with the RRIM method (Reinforced Reaction Injection Moulding). Milled Fiber is usually mixed into the polyol during processing and can be easily and totally dispersed despite a low viscosity system. The low temperature impact strength is superior with Milled Fiber, compared to the other fillers. This type is also being used for polycarbonate (PC) compounds as reinforcing agent and/or for creating a translucent effect. Also honeycomb catalysts are made using the Milled Fiber to improve stiffness of these ceramic compounds.

ENVALIOR MF 7982 is a Milled Fiber with a silane–based surface treatment, suitable for different polymeric systems. This fiber provides, for example, a reinforcing effect and supports the flame resistance of Nylon (PA) FR grade compounds. This type is also used in polypropylene (PP) compounds.

ENVALIOR MF 7904 is an ultra–short Milled Fiber without surface treatment or any organic sizing. This type can be used for polytetrafluoroethylene (PTFE) compounds, coatings and other high temperature polymers.



Milled Fiber under microscope

APPLICATION *AREAS*

Elastomeric seals:
For sealing applications in the chemical industry, Milled Fiber in elastomeric seals and gaskets offers, with its reinforcing properties, a high level of flexibility and improved chemical properties.

Polyamide compounding
The classic application for Milled Fiber is polyamide compounding for the automotive and household goods industry. Apart from the reinforcing properties of Milled Fiber, the short fiber lengths also result in outstanding surfaces of the molded part and has a positive influence on flame retardance.

PTFE compounding:
PTFE compounds are used to manufacture various vehicle components such as gear assemblies, seals and bearings. Milled Fiber can help to optimize the heat resistance of the components and meet the stringent demands on friction and wear resistance.

PUR–RIM
In the reinforced reaction injection molding process, plastics parts such as bumpers, fenders, side members and spoilers are made of polyurethane (PU). To improve the mechanical properties, Milled Fibers are added to the PU systems. Owing to their short and narrow length distribution, Milled Fibers provide an ideal means of minimizing shrinkage behavior.


Media box of Durethan® from ENVALIOR, reinforced with Milled Fiber


PTFE sealing ring reinforced with Milled Fiber

Opel spoiler, produced by Wayand with polyurethane reinforced with Milled Fibers

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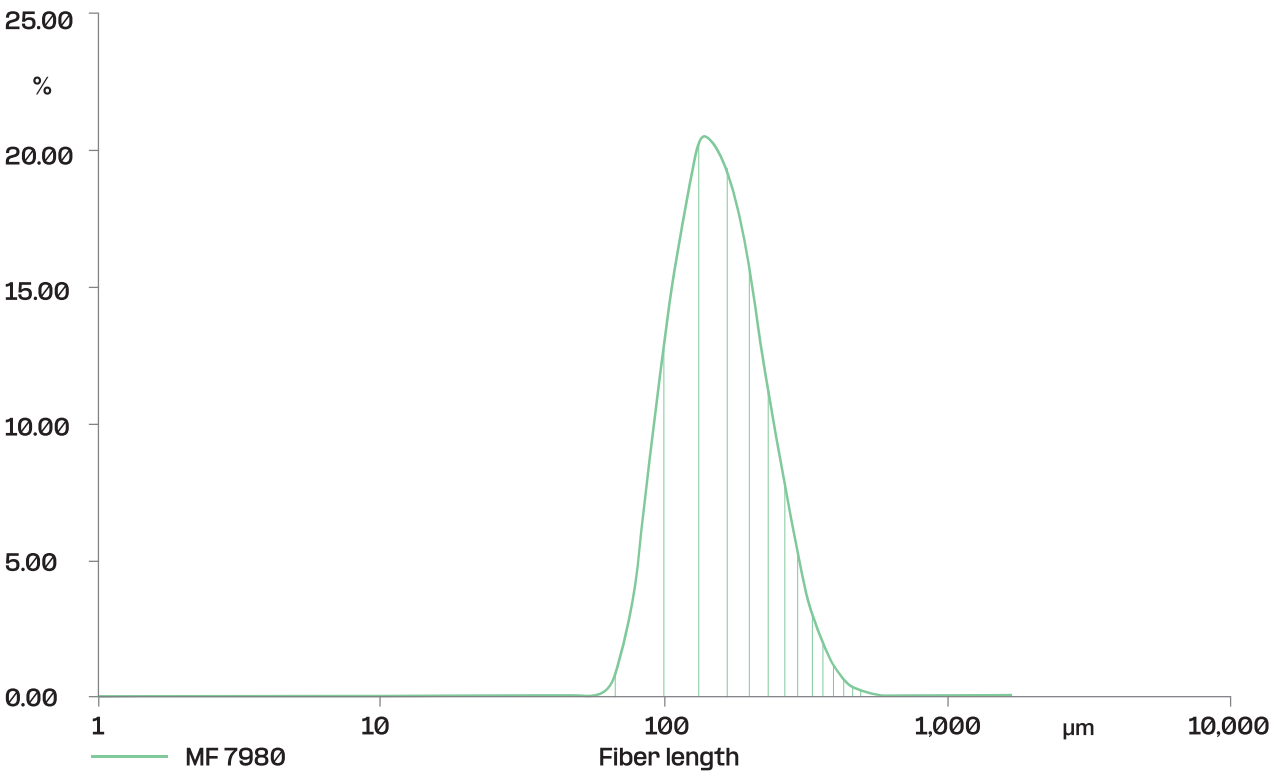
Product description
ENVALIOR Milled Fibers consists of short E–glass fila–ments and is available with well–defined average Fiber lengths between 50 to 220 microns. They are used in a wide range of applications where the reinforcing prop–erties of a high quality glass fiber are required in com–bination with a process which needs a short initial fiber length and excellent flowability.

Production
High quality chopped strands of a defined diameter, with optional surface treatment, are subjected to addi–tional milling operations to achieve a consistent defined average fiber length and bulk density.

Beneficial characteristics of ENVALIOR Milled Fiber

- Narrow fiber length distribution
- Uniform diameter
- White and constant colour, no impurities
- Consistent sizing (if any) and glass type E, no mixtures
- Low moisture content below 0.05% by weight
- Many years of experience in production and application
- Available on a global basis

Typical fiber length distribution



PRODUCT *PORTFOLIO*

Available products	Average fiber length (nominal) µm	Fiber diameter µm	Typical bulk density g/cm³	Surface treatment	Use
MF 7904	50	14	0.9	no	PTFE, coatings
MF 7980	190	14	0.6	no	PUR, PC, others
MF 7982	210	14	0.5	silane based	PA, PP, others
MF 7982 (19/346)	150	14	0.75	silane based	PA, PP, others
MF 7986	220	16	0.5	silane based	PA, PP, others

All products:
- Moisture content < 0.05% weight
- Glass type E–glass

Special products available on request

Available packagings
ENVALIOR Milled Fibers are packed in recyclable bulk bags (800 kg or 1,000 kg), small bags of 20 kg, or cardboard boxes of 25 kg.

- Bulk bags

- Small bags

- Cardboard boxes

Order No.: ENV-HPM-048EN

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