Ultra High Molecular Weight Polyethylene Fiber from ISHI

UHMWPE fiber combines excellent mechanical properties with low density, resulting in high performance-on-weight basis.

The UHMWPE fiber from ISHI New Materials is a gel-spun, multi-filament fiber produced from ultra high molecular weight polyethylene, with main characteristics: high strength, low weight, low elongation at break, and resistance to most chemicals. To stimulate developments, this sheet provides an overview of properties measured on UHMWPE fibers from ISHI New Materials.

Fiber range

UHMWPE fibers from ISHI New Materials are produced in three strength ranges and several linear densities with a characteristic very low filament diameter. The tensile properties are correlated with the fiber linear density. Detailed information per fiber type is available on request, as Product Data Sheets, Product Specification Sheets, Material Safety Data Sheets and Fact Sheets.

The disclosed data has been generated from test results of UHMWPE fibers from ISHI New Materials and can not be considered valid for other fibers from other UHMWPE suppliers.

Application

UHMWPE Synthetic Rope

UHMWPE UD fabric

UHMWPE Fiber Type For Rope

Type	Linear density (Denier)	Strength			Tensile Modulus			Break elongation(%)
		cN/dtex	g/den	Gpa	cN/dtex	g/den	Gpa	
IS-62	1600D	32	36	3.1	⩾1200	⩾1350	⩾115	⩽ 4
IS-78	1600D Low creep	31.5	35.5	3.0	⩾1100	⩾1240	⩾106	⩽ 3.5

UHMWPE Fiber Type For UD Fabrics

Type	Linear density (Denier)	Strength			Tensile Modulus			Break elongation(%)
		cN/dtex	g/den	Gpa	cN/dtex	g/den	Gpa	
IS-60	800D	34	38	3.2	⩾1300	⩾1470	⩾126	⩽ 4
IS-75	800D	37	41.5	3.5	⩾1450	⩾1640	⩾140	⩽ 4
IS-90	800D	40	45	3.8	⩾1580	⩾1780	⩾152	⩽ 4

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