

UHMWPE

Ultra-high molecular weight polyethylene (UHMW-PE) is a polyolefin powder that can be classed as a specialty engineering plastic. It has extremely long chains, with molecular weight numbering in the millions, usually between 3 and 10 million. UHMW-PE has an outstanding combination of mechanical properties, particularly toughness and abrasion wear resistance, combined with the excellent chemical properties.

UHMWPE Properties

- High resistant to abrasion
- Highest impact strength of any thermoplastic presently made
- Very low coefficient of friction, is self-lubricating
- High resistant to corrosive chemicals
- Extremely low moisture absorption

IRPC UHMWPE Applications

- Semi-finished product, Rod/ Sheet/ Profiles
- Lead-acid battery separators
- Microporous membranes as Lithium ion batteries
- Filtration
- Functional additives
- Pipe
- Fibers

IRPC UHMW-PE Product Portfolio



Physical Properties	METHOD	UNIT	U310	U311	U321	U511	U521	*U511H	U310T	*H610B	U210B	U510B	U320FW
Appearance	-	-	Powder	Powder	Powder	Powder	Powder	Powder	Powder	Powder	Powder	Powder	Powder
Avg. Molecular Weight	Margolies's Equation	X106 g/mol	3.7	3.7	3.7	5.5	5.5	5.5	3.7	5.5	1.7	5.5	3.7
Avg. Particle Size, X50	Laser Scattering	μm	150	150	240	150	240	150	150	150	125	125	300
Density	ISO 1183	g/cm ³	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Bulk Density	ISO 60	g/cm ³	≥ 0.40	≥ 0.40	≥ 0.40	≥ 0.40	≥ 0.40	≥ 0.40	≥ 0.40	≥ 0.40	≥ 0.38	≥ 0.38	≥ 0.38
Intrinsic Viscosity	ISO 1628-3	ml/g	1765	1765	2300	2300	2300	2300	1765	2300	1000	2300	1765
Melting Temperature (10°C/min)	ASTM D3418	°C	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135
Uses			Functional additive	Ram Extrusion Compression Molding Pipe	Ram Extrusion Compression Molding	Ram Extrusion Compression Molding Pipe	Ram Extrusion Compression Molding Pipe	Ram Extrusion Compression Molding Pipe	Skiving Film	Microporous membranes	Microporous membranes	Lead-acid battery separators	Filtration
Technical Data & Certificate			TDS SDS FDA REACH RoSH	TDS SDS FDA REACH RoSH	TDS SDS FDA REACH RoSH	TDS SDS FDA REACH RoSH	TDS SDS FDA REACH RoSH	TDS SDS FDA REACH	TDS SDS REACH	TDS SDS REACH	TDS SDS REACH RoSH	TDS SDS REACH RoSH	TDS SDS FDA REACH

Remark :

Above data, as representative values, are for a guidance purpose only, and not for sales specifications.

*For U511H, it is high impact grade with Charpy Impact Strength (Double Notched) > 150 kJ/m² following method ISO 11542-2

Contact Us

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