ENGINEERING DATA SHEET

DSM 3.6.1
POLYETHYLENE (UHMW-PE) _Cast

General:

UHMW-PE: (**U**ltra **H**igh **M**olecular **W**eight) Polyethylene is a semi-crystalline, thermoplastic of the polyolefin (wax-like feel) family. It has an extremely high melt viscosity & normally can only be processed by powder sintering methods (compression moulding or extrusion.) This combined with abrasion resistance, toughness & a low coefficient of friction provides a self-lubricating non-stick surface significantly lower than steel and most plastics. In some forms being 15 times more resistant to abrasion than carbon steel, its coefficient of friction is significantly lower than **polyamide** and **acetal** and equals PTFE with better abrasion resistance.

Benefits:

- Highest impact strength of any thermoplastic.
- High energy absorption capacity at high stress rate
- Excellent wear-resistant properties
- Low coefficient of friction
- Very high chemical resistance to acids, alkalis and corrosive gases
- Highly resistant to environmental stress cracking
- Wide service temperature range from -200°C to 90°C
- Negligible water absorption
- Fabrications can be hot air welded together.

Limitations:

- Limited (UV) weathering resistance.
- Difficult to bond. (Can be welded)
- Low flame-retardant standards (UL94: HB).

ASM (DEK) Applications:

- Wear strips; Guide Rails; Bumpers; Bearings.

Profiles:

- Plate: 8 – 40 mm thick
- Rod & Tube 50 – 95 mm Dia.

These values are representative. For critical applications, refer to data-sheet.

MECHANICAL PROPERTIES					
MATERIAL DETAILS	TENSILE STRENGTH:	YOUNGS MODULUS:	POISSONS RATIO:	DENSITY:	UL No.
UHMW-PE (GREEN)	**40** MPa	**0.55** GPa	**0.46**	**940** Kg/m^3	----

Alternatives:

Alternative polymers are allowed only with the express written permission of ASMPT. Please email details of your request to engineering_enquiries@asmpt.com

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