ENGINEERING DATA SHEET

THERMOPLASTIC

SEMI-CRYSTALLINE GROUP

Definition:

It is the long chained molecules that define the character of this group. When moulded, this highly ordered molecular structure is anisotropic: shrinking less in the direction of flow vs. transverse to flow. Other features of this aligned structure include a high degree of component flexibility, good chemical & ESC (Environmental Stress Cracking) resistance.

Semi-crystalline materials have a distinctive (known) melting temperature, they do not gradually soften when exposed to increases in temperature, instead they remain solid until a given quantity of heat is absorbed then rapidly change into a low viscous (watery) melt.

Typical Features:

- Chemical & ESC resistant.
- Fatigue resistant & flexible
- Good for bearing & wear.
- Resistant to bonding with solvents & adhesives.
- Distinctive (known) melting temperature.

Reinforcements & fillers:

Benefits, if available:-

Glass fibre **reinforcement** by weight (eg: 30%) alters Mechanical Properties:-

- Increases stiffness
- Becomes more brittle.
- Reduces moulding shrinkage.
- Improvements to Heat Distortion Temp (HDT).

Additional **fillers** can improve:-

- Flame-retardance.
- Electrical properties:-

  Carbon increases conductivity

  Stainless steel improves dissipative behaviour.

DSM 4.3.3

POLYPROPYLENE _GREEN – RAL 6018

General:

Polypropylene (**PP**) is the most versatile & cost effective of the polyolefin (wax-like feel) family.

Benefits:

- Resistant to fatigue, flexible with moderate strength.
- It has good impact strength, surface hardness, dimensional stability and excellent abrasion resistance.
- Polypropylene does not present stress cracking problems & is resistant to a wide variety of acids, alkalis and solvents.
- Conductive grade. Surface Resistivity 10^3 ohms/sq at 2,5mm thick
- PP doesn't melt below 160°C.

Limitations: (unmodified)

- Degraded by UV.
- Flammable.
- Attacked by chlorinated solvents (carbon tetrachloride) & aromatics (Benzene)
- Difficult to bond & paint.

ASM (DEK) Applications:

- Spatulas

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

MECHANICAL PROPERTIES					
	HARDNESS Shore A	TENSILE STRENGTH:	YOUNGS MODULUS:	POISSONS RATIO:	DENSITY:
>PP<	---	**23** MPa	**1.45** GPa	**0.36**	**930** Kg/m^3

GRADE	SUPPLIER	UL No.	RECYCLE CODE
TATREN IM 55 80 + Universal Master Batch (Green – RAL 6018 or similar)	**MOL Group Chemicals**	**----**	**>PP<**

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