

## Beetle<sup>®</sup> MD82

### Product Description

MD82 is a UL recognised, V-0 rated halogen & phosphorus free flame retarded, heat stabilised, unreinforced injection moulding grade of nylon 6.

### Technical Data

Property	Test Procedure	Units	Dry	Conditioned
<b>General Properties</b>				
Specific gravity	ISO 1183	g/cm <sup>3</sup>	1.18	-
<b>Thermal Properties</b>				
Mould shrinkage (See Notes)	CP Ltd	%	1.1 - 1.5 *	-
Linear thermal expansion	(TMA)	10 <sup>-5</sup> /K	6.0	-
Thermal conductivity	BS874	W/mK	0.34	-
Deflection temperature @ 1.8 MPa	ISO 75	°C	80	75
<b>Flammability</b>				
Oxygen index	ISO 4589	%	36	
Underwriters Laboratory (UL)	UL 94		V0 @ 0.63mm	
Glow-wire rating (UL)	IEC695-2-12 IEC695-2-13	°C	GWFI:960/1.0/1.5 GWIT:960/1.0/1.5	
<b>Mechanical Properties</b>				
Tensile strength	ISO 527	MPa	70 <sup>B</sup>	50 <sup>B</sup>
Tensile modulus	ISO 527	GPa	2.9	2.3
Elongation @ break	ISO 527	%	4 <sup>B</sup>	8 <sup>B</sup>
Flexural strength	ISO 178	MPa	85 <sup>CD</sup>	35 <sup>CD</sup>
Flexural modulus	ISO 178	GPa	3.1	1.5
Charpy impact strength - notched	ISO 179	kJ/m <sup>2</sup>	9	45
Charpy impact strength - unnotched	ISO 179	kJ/m <sup>2</sup>	>100	>100
Izod impact strength - notched	ISO 180	kJ/m <sup>2</sup>	3	-
Izod impact strength - unnotched	ISO 180	kJ/m <sup>2</sup>	DNB	-
<b>Electrical Properties</b>				
Relative permittivity @ 1MHz	IEC 250		4.0	4.7
Volume resistivity	IEC 93	log ohm cm	14	12
Surface resistivity	IEC 93	log ohm	14	11
Loss tangent @ 1MHz	IEC 250		0.02	0.08
Electric strength ( 3mm )	IEC 243	kV/mm	15	12
Comparative tracking index	IEC 112	V	>600	>600

<sup>B</sup> At break

<sup>CD</sup> At conventional deflection

<sup>DNB</sup> Did not break

\* Chem Polymer result . (see comments regarding mould shrinkage)



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### Processing conditions

Recommended moulding conditions for optimum appearance and properties are as follows:

Barrel temperature	240 - 260°C
Mould temperature	60 - 80°C
Melt temperature	<300°C
Screw speed	50 -200 revs/minute
Back pressure	Low
Injection speed	Fast
Injection pressure	High

The material is supplied dry and ready to mould in sealed, moisture proof sacks. No drying is necessary unless the material has been exposed to air for longer than three hours. The appearance of splash marks on the surface of mouldings indicates excessive moisture is present. Should drying become necessary, two hours at 80°C in a dehumidifying drier is recommended. The use of air circulating driers is not generally recommended, as longer drying times are often required, with greater potential for product oxidation and yellowing. Drying temperatures should not exceed 80°C.

### Mould shrinkage

Mould shrinkage is significantly influenced by many factors including wall thickness, gating, moulding shape and processing conditions. The range values given are determined from specimen bar mouldings of 1.5mm to 4mm wall thickness. They are provided as a guide for comparison purposes only and no guarantee should be inferred from their inclusion. (Specimens measured in the dry state, 24 hours after moulding).

### Packaging and storage

Standard pack:	25 kg moisture proof sack
Standard pallet:	40 x 25 kg (1000 kg )
Storage:	Keep in dry, well ventilated storage areas away from sources of heat

### Health and safety

A safety data sheet on this product is available on request.

*This data is typical information for a natural material and does not constitute an agreed sales specification.*