HDPE
High Density Polyethylene

Description High rigidity polymer with excellent chemical and stress cracking resistance.	
Typical Applications Films, blow moulded bottles, fuel tanks, pipes, household articles, stacking crates	
Types of grade available Extrusion Injection moulding Blow Moulding	
General Processing	
Drying Time	N/A
Drying Temperature	N/A
Type of Drier	N/A
Purging	DYNAPURGE D2 OR F
Moisture Absorption	Less than 0.1% water in 24 hours at room temperature
Other Considerations	Can be prone o after shrinkage and is affected by Phtholocynanine blue and green pigments
Processing Injection Moulding	
Barrel Settings	160C to 280C
Injection speed	Fast
Injection Pressure	Medium
Back Pressure	Low
Screw Speed	Medium
Tool Temperature	20C
Melt Temperature	110 – 135c
Processing Stability	Maximum barrel residence time 5 to 6 minutes
Gate Considerations	All types of gate used
Sprue & Runner Considerations	Keep runner lengths as short as possible, position ejectors at runner junctions to ensure feed system removed from mould without difficulty
Processing Extrusion	
Barrel Settings	180C to 240C
Screw Speed	Set at point to achieve clear melt of HDPE
Screen Packs	80 mm recommended
Haul-off / Cooling	Water batch 5 -10c
Calibration	Air or vacuum calibrator sizing plate

Mechanical Properties	
Shrinkages	2% to 3%
Flexural Strength	14-25 MPa
Tensile strength at Yield	2.4 – 31 MPa
Physical Properties	
Density	0.96
Cold Bend	-60
Cold Flex	N/A
Elongation at Break	600%
Modulus of Elasticity	
General Impact Strength	High
Material Finish	Milky white base colour good gloss
Thermal Properties	
Vicat Softening Temperature	125C
Heat Deflection Temperature	60 – 105c
Flammability	
Flammability Rating	Horizontal Burn
Weatherability	
Suitability for outdoor use	Material has good environmental stress cracking properties and satisfactory UV properties
Fillers & Additives	Carbon black for very long term weatherability
Chemical Resistance	
Resistant to	No known solvent at room temperature
Not resistant to	Chloroform, xylene , paraffin
Food Contact Status	Suitable for food contact
Colouring	As the natural colour is off-white then a wide colour range is possible; this does not include transparent colours. Can be coloured by techniques such as masterbatch, dry colouring and liquid colouring. When dry colouring, adhesion promoters such as paraffin can be used.

REACH & ROHS Compliance	**Contains no hazardous substances**
Bonding	The material may not be joined to itself using solvents, as there is no solvent at room temperature. Because of its inert, "non-stick" surface it also cannot be very successfully bonded using adhesives; limited success with contact or hot melts adhesives. Improvements made using primers and surface treatments achieving 95% bond
Welding	Welding methods such as hot plate or shoe are often preferred. When welding HDPE it is usual to coat or cover the hot plates with PTFE so as to prevent the material sticking to the surfaces of the hot plate

This information has been provided as a general guide and we suggest that you carry out your own specific tests to be sure that this material is suitable for your application.