ABS
Acrylonitrile butadiene styrene

Description
A hard tough material with high gloss finish and good impact resistance even at low temperatures. Normally available in transparent, natural and colours with high gloss finish. Suitable for Injection Moulding and Extrusion.

Typical Applications
Automotive, e.g. radiator grilles, mirror housings, wheel covers. Toys, vacuum cleaners, computer housings, telephones. Pipes and pipe fittings Excellent for electro plating and painting.

Types of grade available
General Purpose Moulding
High Impact Moulding/Extrusion
High Gloss/High Rigidity
Electro Plating
Flame Retardant

Recycling
Users can add regrind at 15% to virgin material.
Waste material needs to be segregated in order to avoid cross contamination. Re-ground material will absorb moisture quicker than virgin, therefore always dry before use.
Excellent quality reprocessed available in Black and white limited supplies of natural.

Note
Can promote plasticiser migration from PVC/P if in contact
Poor weather resistance

General Processing	
Drying Time	2 to 4 hours
Drying Temperature	80 Deg C
Type of Drier	Hot Air
Purging	PS, PMMA
Moisture Absorption	0.2% to 0.35% in 24 hours at room temperature
Other Considerations	Can promote plasticiser migration from PVC/P if in contact

Processing Injection Moulding	
Barrel Settings	210 to 260 C
Injection speed	Moderate to Fast

Injection Pressure	First stage High, Second stage Low
Back Pressure	Low
Screw Speed	50 – 90 rpm
Tool Temperature	25 to 70 C
Melt Temperature	250 Deg C
Processing Stability	Barrel residence time no more than 5 minutes, flame retardant grades can degrade in the event of machine stoppage
Gate Considerations	Tab gates minimise jetting, blush or gate strain
Sprue & Runner Considerations	Full round or trapezoidal preferred
Processing Extrusion	
Barrel Settings	200 to 245 C
Screw Speed	Dependent on line speed required
Screen Packs	20, 60, 80, 20 Create greater back pressure for mixing
Cooling	Water bath chilled 10c
Calibration die	Suitable for use with a vacuum calibrator or sizing plates.
Mechanical Properties	
Shrinkages	0.4% to 0.7%
Flexural Strength	65 MPa
Tensile strength at Yield	45 MPa
Physical Properties	
Density	1.04
Cold Bend	N/A
Cold Flex	N/A
Elongation at Break	10%
Flexural Modulus	23 GPa
General Impact Strength	Good to High
Material Finish	High Gloss
Thermal Properties	
Vicat Softening Temperature	96 C
Heat Deflection Temperature	98 C
Flammability	
Flammability Rating	Standard grades are HB but Flame Retardant grades available V0 at 1.6 mm
Weatherability	
Suitability for outdoor use	Poor prone to environmental stress cracking

Fillers & Additives	Flame Retardant, Glass Fibre, High Heat
Chemical Resistance	
Resistant to	Glycerine, Inorganic Salts, Alkalis, Many Acids, Alcohols & Hydrocarbons
Not resistant to	Strong Acids, Solvents, Ketones, Esters and some Chlorinated Hydrocarbons
Food Contact Status	Suitable for food contact
Colouring	Used extensively in natural and coloured with Masterbatch. Historically ABS has been prone to varying base colour though this is less evident with modern production process. Different manufactures grades may offer a variation in base colour some are yellowier in colour than others. This could affect masterbatch shades.
WEEE & ROHS Compliance	Contains no hazardous substances
Bonding	Adhesive and solvent bonding are suitable for ABS.
Welding	ABS can be ultrasonically welded, Hot plate welded and Friction welded

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.