

# Acrylonitrile Butadiene Styrene (ABS) and Other Specialist Styrenics

## Introduction

ABS is an ideal material wherever superlative surface quality, colourfastness and lustre are required. ABS is a two phase polymer blend. A continuous phase of styrene-acrylonitrile copolymer (SAN) gives the materials rigidity, hardness and heat resistance. The toughness of ABS is the result of submicroscopically fine polybutadiene rubber particles uniformly distributed in the SAN matrix.

## Properties

ABS standard grades have been developed specifically to meet the requirements of major customers. ABS is readily modified both by the addition of additives and by variation of the ratio of the three monomers Acrylonitrile, Butadiene and Styrene: hence grades available include high and medium impact, high heat resistance, and electroplatable. Fibre reinforcement can be incorporated to increase stiffness and dimensional stability. ABS is readily blended or alloyed with other polymers further increasing the range of properties available. Fire retardancy may be obtained either by the inclusion of fire retardant additives or by blending with PVC. The natural material is an opaque ivory colour and is readily coloured with pigments or dyes. Transparent grades are also available.

A variety of grades are available for different applications, the material is typically injection moulded or extruded.

### PHYSICAL PROPERTIES

Tensile Strength	40-50	Mpa
Notched Impact Strength	10 - 20	Kj/m <sup>2</sup>
Thermal Coefficient of expansion	70 - 90	x 10 <sup>-6</sup>
Max Cont Use Temp	80 - 95	°C
Density	1.0 - 1.05	g/cm <sup>3</sup>

### RESISTANCE TO CHEMICALS

Dilute Acid	****
Dilute Alkalis	****
Oils and Greases	****
Aliphatic Hydrocarbons	**
Aromatic Hydrocarbons	*
Halogenated Hydrocarbons	*
Alcohols	* (variable)

### KEY

*	poor	**	moderate	***	good	****	very good
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