

ABS

INTRODUCTION

ABS is an ideal material wherever superlative surface quality, colorfastness and luster are required. ABS is a two phase polymer blend. A continuous phase of styrene-acrylonitrile copolymer 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

GRADES AVAILABLE

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/m2
Thermal Coefficient of expansion	70 - 90	x 10 ⁻⁶
Max Cont Use Temp	80 - 95	oC
Density	1.0 - 1.05	g/cm ³

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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APPLICATIONS

Because of its good balance of properties, toughness/strength/temperature resistance coupled with its ease of moulding and high quality surface finish, ABS has a very wide range of applications. These include domestic appliances; telephone handsets computer and other office equipment housings, lawn mower covers, safety helmets, luggage shells, pipes and fittings. Because of the ability to tailor grades to the property requirements of the application and the availability of electroplatable grades ABS is often found as automotive interior and exterior trim components

HISTORY OF ABS

Styrene Acrylonitrile copolymers have been available since the 1940's and while its increased toughness over styrene made it suitable for many applications, its limitations led to the introduction of a rubber (butadiene) as a third monomer and hence was born the range of materials popularly referred to as ABS plastics. These became available in the 1950's and the variability of these copolymers and ease of processing has led to ABS becoming the most popular of the engineering polymers.

Terluran® is the ABS from BASF : special Terluran® grades and Terluran® Standard are ideal materials wherever superlative surface quality, colorfastness and luster are required. Terluran's properties are superior to those generally expected from an ABS, even where comparable products require costly modification. Terluran® is an extremely cost-effective material for components with stringent service requirements, or where there is weight-saving potential.