ABS (acrylonitrile butadiene styrene)
Technical Datasheet

Low Cost Mechanical Plastic — Service. Quality. Value.

Typical Applications

- Prototyping
- Housings
- Appliances
- Control panels
- Medical knobs and housings

Product Description

ABS (acrylonitrile butadiene styrene) is a low cost mechanical plastic that is easy to machine and fabricate.

This product is an ideal material for use in prototyping because of its excellent dimensional stability and it is easy to paint or glue. ABS is well suited for structural applications where impact resistance, strength and stiffness are required. ABS comes in Natural (beige) and Black.

ABS is one of the more common engineering polymers due to its ease of processing outstanding material qualities.

Key features

- High dimensional stability
- High rigidity
- Outstanding electro-platability
- Stress - crack resistant
- Good impact resistance, even at low temperature
- Good sound dampening characteristics
- Continuous use temperature of 170°F
- Good thermoformability and weldability

Recycling

ABS is typically expensive, and therefore the recycling of the material is an attractive economic proposition. ABS can be blended with other materials to produce high quality products at lower cost.

Processing

By injection moulding or extrusion technique.

Typical Properties of Stock Shapes

Property	Units	Test Method	Natural & Black
Specific Gravity	-	ASTM D 792	1.04
Water Absorption 24 hrs	%	ASTM D 570	0.45
Water Absorption Saturation	%	ASTM D 570	0.7
Flammability	-	UL 94	HB
Tensile Strength	psi	ASTM D 638	6,100
Elongation	%	ASTM D 638	40
Modulus	psi	ASTM D 638	310,000
Flexural Strength	psi	ASTM D 790	10,500
Modulus	psi	STM D 790	340,000
Notched Izod	ft-lb/in	ASTM D 256	4.03
Rockwell Hardness	-	ASTM D 785	R102
HDT @ 264 psi	°F	ASTM D 648	203
Coefficient Linear thermal expansion	in/in/oF	ASTM D 696	4.89 x 10-5
Dielectric Strength	V / mil	ASTM D 149	450
Volume Resistivity	ohm-cm	ASTM D 257	1016
Dielectric Constant	-	ASTM D 150	3.2

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast	02895 908 897	Smiths Leeds	0113 307 5167
Smiths Biggleswade	01767 604 704	Smiths Manchester	0161 794 8650
Smiths Birmingham	0121 728 4940	Smiths Norwich	01603 789 878
Smiths Bristol	0117 971 2800	Smiths Nottingham	0115 925 4801
Smiths Chelmsford	01245 466 664	Smiths Redruth	01209 315 512
Smiths Gateshead	0191 469 5428	Smiths Verwood	01202 824 347
Smiths Horsham	01403 261 981	Main Office	0845 527 3331

Quality & Testing:

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www.smithmetal.com info@smithmetal.com