

ABS M30

Material Introduction

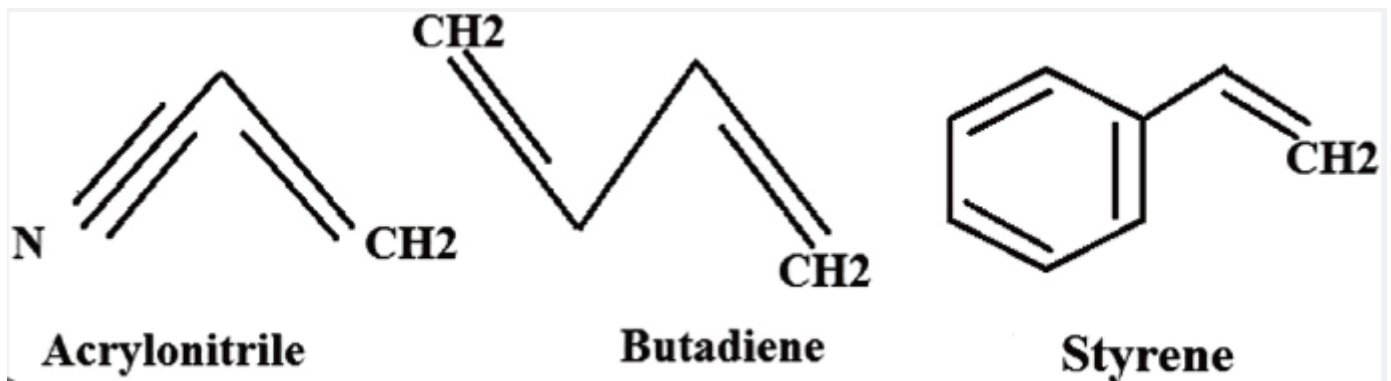


Introduction

ABS-M30 is a high-strength 3D Printing thermoplastic material widely used in engineering applications. It is a variant of Acrylonitrile Butadiene Styrene (ABS) that provides better mechanical characteristics, including strength, stiffness, and durability. ABS-M30 is commonly used for applications that require strong, stable and functional parts.



Chemical Structure



The Attribute for a 102*102*2.5mm sample

MECHANICAL PROPERTIES ¹	TEST METHOD	ENGLISH		METRIC	
		XZ AXIS	ZX AXIS	XZ AXIS	ZX AXIS
Tensile Strength, Yield(Type 1, 0.125", 0.2"/min)	ASTM D638	4,550 psi	3,750 psi	31 MPa	26 MPa
Tensile Strength, Ultimate(Type 1, 0.125", 0.2"/min)	ASTM D638	4,650 psi	4,050 psi	32 MPa	28 MPa
Tensile Modulus(Type 1, 0.125", 0.2"/min)	ASTM D638	320,000 psi	310,000 psi	2,230 MPa	2,180 MPa
Tensile Elongation at Break(Type 1, 0.125", 0.2"/min)	ASTM D638	7%	2%	7%	2%
Tensile Elongation at Yield(Type 1, 0.125", 0.2"/min)	ASTM D638	2%	1%	2%	1%
Flexural Strength(Method 1, 0.05"/min)	ASTM D790	8,700 psi	7,000 psi	60 MPa	48 MPa
Flexural Modulus(Method 1, 0.05"/min)	ASTM D790	300,00 psi	250,000 psi	2,060 MPa	1,760 MPa
Flexural Strain at Break(Method 1, 0.05"/min)	ASTM D790	4%	3.5%	4%	3.5%

Advantages

1. High strength and durability: ABS-M30 has high strength and toughness, making it ideal for functional parts that require durability.
2. Chemical resistance: ABS-M30 is resistant to oils, greases, and various chemicals, making it suitable for parts that come in contact with these substances.
3. Cost-effective: ABS-M30 is a cost-effective option as it has low material and production costs compared to other engineering-grade thermoplastics.
4. Good Surface finish: ABS-M30 produces parts with a smooth surface finish, ideal for parts that require cosmetic appeal.

Disadvantage

1. Limited temperature resistance: ABS-M30 has a limited heat resistance of up to 90°C, which may not be suitable for parts used in high-temperature environments.
2. Limited UV resistance: ABS-M30 has limited UV resistance, causing it to degrade over time when exposed to sunlight and weathering.
3. Warping and shrinkage: ABS-M30 has a higher tendency to warp and shrink during the cooling process, resulting in parts with less dimensional accuracy.

Applications

➤ Aerospace:

ABS-M30 is used to make lightweight and high-strength components for aircraft and spacecraft. It is also used in the production of jigs, fixtures, and tooling for the aerospace industry.

➤ Automotive:

ABS-M30 is an ideal material for producing automotive parts that require high durability and resistance against wear, impact, and temperature changes. It is used in the production of dashboard components, engine covers, and structural parts

➤ Manufacturing

ABS-M30 is widely used in the manufacturing industry for making production tools, molds, and fixtures. Due to its high heat resistance, it is also used in the production of parts that require high temperature sterilization.

➤ Medical

ABS-M30 is used to create prototypes and parts that are used in medical devices, surgical equipment, and prosthetics. Its bio-compatibility and resistance to chemicals make it a good material choice for this industry.