

Technical Data: SB (Styrene-Butadiene)

Product Description

Define and Grades

Injection-molded SB (Styrene-Butadiene) is a thermoplastic material formed from styrene and butadiene. It offers a balance of rigidity, impact resistance, and affordability, making it ideal for various consumer and industrial plastic parts through injection molding processes.

Common grades of injection molded SB (Styrene-Butadiene) used for injection molding include:

- General-Purpose SB
- High-Impact SB
- Weather-Resistant SB
- Flame-Retardant SB
- Food-Grade SB



Features and Applications

Grade	Features	Applications
General-Purpose SB	- Good balance of rigidity and impact resistance - Affordability	Consumer goods, packaging, automotive components
High-Impact SB (HIPS)	- Enhanced impact resistance - Good rigidity - Moderate cost	Toys, appliance housings, electrical enclosures
Weather-Resistant SB	- UV resistance - Outdoor durability - Moderate impact resistance	Outdoor furniture, garden equipment, automotive trim
Flame-Retardant SB	- Flame resistance - Low smoke emissions - Electrical insulating properties	Electrical enclosures, safety equipment, automotive interiors
Food-Grade SB	- Food-contact safe - Good chemical resistance - Cost-effective	Food packaging, kitchenware, beverage containers

Physical and Mechanical

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm ³)	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(°C)	(%)	(HRB)
General-Purpose SB	1.05	35	3	1.9	70	25	85	0.6	65
High-Impact SB (HIPS)	1.06	40	5	2.2	80	150	80	0.7	70
Weather-Resistant SB	1.07	30	2	1.8	60	40	70	0.5	63
Flame-Retardant SB	1.06	45	4	2.5	90	35	85	0.6	68
Food-Grade SB	1.05	30	2	1.7	65	20	80	0.5	60

Note

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Benefits of Material Grades

General-Purpose SB

Applications: General-Purpose SB offers a balanced combination of rigidity and impact resistance, making it suitable for various applications. It is commonly used in consumer goods, packaging, and automotive components.

Reasons for Popularity: Its popularity arises from its versatility and cost-effectiveness. General-Purpose SB provides satisfactory performance across various industries while being affordable.



High-Impact SB (HIPS)



Applications: High-impact SB (HIPS) is chosen for enhanced impact resistance and rigidity applications. It is commonly used in toys, appliance housings, and electrical enclosures.

Reasons for Popularity: HIPS is famous for its ability to withstand impacts and shocks while maintaining moderate cost. It offers the durability needed for products subjected to rough handling.

Weather-Resistant SB

Applications: Weather-resistant SB is preferred for outdoor applications requiring UV exposure and durability resistance. It finds uses in outdoor furniture, garden equipment, and automotive trim.

Reasons for Popularity: Its popularity stems from its ability to withstand outdoor conditions, including UV radiation, without significant degradation. This makes it suitable for products exposed to the elements.



Flame-Retardant SB



Applications: Flame-retardant SB is crucial in applications where fire safety is paramount. Due to its flame resistance, low smoke emissions, and electrical insulating properties is used in electrical enclosures, safety equipment, and automotive interiors.

Reasons for Popularity: Its popularity is driven by its ability to meet stringent fire safety standards. Flame-retardant SB enhances safety in environments where fire risks are a concern.

Food-Grade SB

Applications: Food-Grade SB is selected for applications requiring food-contact safety. It is commonly used in food packaging, kitchenware, and beverage containers. Its good chemical resistance and cost-effectiveness are essential in these applications.

Reasons for Popularity: Popularity arises from its compliance with food safety regulations and cost-effectiveness. Food-Grade SB ensures the safety of food products while being a cost-effective choice for food-related applications.



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