Indian Standard IS 17077 (Part 1) : 2022 *Acrylonitrile-Butadienestyrene* (ABS) — Specification

ABS is a thermoplastic polymer known for its strength, toughness, and impact resistance, which makes it a popular choice for manufacturing durable plastic products. It combines acrylonitrile for chemical resistance, butadiene for toughness, and styrene for ease of processing, creating a material that is easy to mould and extrude.

This standard focuses on categorizing **ABS** materials by their properties to guide **manufacturers** and **consumers** in selecting suitable grades for specific applications. ABS materials are classified based on several properties, including Vicat softening temperature, melt mass-flow rate, Charpy notched impact strength, and tensile modulus. These factors affect performance under heat, processing conditions, and impact loads. The document outlines a six-block designation system to ensure ABS materials are clearly identified, with each block providing information on the material's composition, fillers, processing methods, and critical mechanical properties. This system aids in determining suitable ABS grades for applications such as automotive components, electronics casings, and household appliances.

The properties of ABS make it widely used in **consumer products**, including electronics, appliances, and automotive parts. However, the document also emphasizes **safety**, especially for materials intended for contact with **food, pharmaceuticals and drinking water**. ABS materials used for food packaging or medical devices must comply with additional **safety** requirements to avoid contamination. This includes controlling pigment types, migration limits, and ensuring materials are free from contaminants that could compromise hygiene. Proper labelling, including batch numbers and certification markings, is required to ensure traceability and quality compliance.

In conclusion, **IS 17077 (Part 1): 2022** provides a comprehensive framework for the quality and application of ABS materials, ensuring their safe and effective use in various industrial and **consumer** products. The detailed classification and designation system assists **manufacturers** and **consumers** in selecting the appropriate ABS grade for various industrial and **consumer** applications, including automotive components, electronics, and food packaging. The standardized designation system helps streamline selection, maintain product quality, and safeguard **consumer health**.