

Summary of IS 12795:2020 Linear Alkyl Benzene

Linear Alkyl Benzene (LAB) is a key **raw material** used in the production of **surfactants** for **synthetic detergents**. It is a **biodegradable** material and is, therefore, finding greater acceptability since it has been found that effluent water containing detergents based on non-biodegradable raw materials could not be rendered harmless even after rigorous water treatment. LAB itself isn't a surfactant, but when sulphonated to become **Linear Alkylbenzene Sulphonate (LAS)**, it effectively helps to emulsify oils and suspend dirt in water, making it useful for cleaning applications.

The primary consumers of LAB are manufacturers of detergent and cleaning products. Since, the quality of LAB directly impacts the performance, stability, and environmental profile of the final detergent product, the detergent manufacturers expect LAB to be of **high purity, biodegradable, compatible** with other detergent ingredients and readily **sulphonable** to ensure efficient production and optimal **cleaning efficacy**.

IS 12795:2020, developed by the Bureau of Indian Standards (BIS), outlines the specifications for Linear alkyl benzene (LAB). IS 12795:2020 defines requirements, sampling methods and test procedures for LAB. This standard prescribes over 15 quality parameters to ensure LAB meets the stringent demands of detergent manufacturing and aligns with consumer expectations for detergent quality. To guarantee that only high-purity LAB is used, IS 12795 mandates that the LAB content must be at least 90%. Since LAB is a biodegradable material, the standard also includes requirements for testing biodegradability to support environmental safety. Compatibility with other detergent ingredients is influenced by the carbon chain length of LAB. The standard prescribes chain length distribution requirements to enhance compatibility with detergent formulations. Additionally, LAB should have a controlled **density** for accurate formulation and blending, which is addressed by specific gravity parameter. For the production of detergents, **LAB** undergoes sulphonation to create **LAS**, the active surfactant. Readily sulphonable **LAB** ensures higher yield of **LAS**, making the production process more efficient and **cost-effective**. To support this, IS 12795:2020 includes requirements for sulphonability, ensuring LAB's suitability for effective detergent production.

In nutshell, IS 12795 is a key standard that promotes environmental responsibility, supports the **detergent industry** with a high-quality raw material, and aligns product quality with safety and **sustainability** goals. It ensures that both manufacturers and consumers benefit from reliable and **eco-friendly** products.