

Summary of IS 4956:2020 Synthetic Detergents for Industrial Purposes

Synthetic detergents for **industrial** purposes are specially formulated **cleaning** agents designed for applications in various **industries**, such as **manufacturing, hospitality, healthcare, and food processing**. Unlike household detergents, industrial detergents are tailored to tackle **heavy-duty** cleaning needs.

Industrial detergents are expected to meet a range of quality parameters to handle the rigorous demands of **industrial cleaning**. These detergents should effectively remove stubborn **stains**, heavy soil, oils, grease, and residues commonly found in industrial settings, while also being formulated to prevent **corrosion** or damage to **machinery, pipes**, and other surfaces.

The Bureau of Indian Standards (BIS) has formulated IS 4956:2020, which details the requirements, sampling methods, and testing procedures for synthetic **anionic detergents** intended for industrial applications. This standard prescribes quality parameters to ensure that detergent should meet consumer expectations for industrial use. IS 4956:2020 classifies detergents into three types based on their physical form and active ingredient concentration. Type 1 includes **powders** or **flakes** with the highest concentration of active ingredients, followed by Type 2 (**paste**) and Type 3 (**liquid**). The standard also specifies parameters such as detergency, ash build-up, and pH for each type. The parameters like active ingredient concentration and detergency ensure its suitability for **heavy duty** cleaning. Highly **acidic** or highly **alkaline** detergents can corrode certain surfaces and materials in industries. By prescribing an appropriate pH range in the standard, the risk of damaging equipment and surfaces has been reduced. Additionally, IS 4956 mandates that detergents undergo **skin irritation** tests to assess potential hazards related to skin exposure.

A key parameter in the standard is the restriction on phosphate content, as excess phosphorus in water bodies can lead to eutrophication and harmful algal blooms that threaten aquatic ecosystems. Phosphorus-based compounds, commonly used as builders in detergents, contribute to this environmental issue. To address this, the standard sets a maximum limit for phosphates and encourages the use of eco-friendly alternatives such as zeolite and tri-sodium citrate.

The stringent testing requirements prescribed in IS 4956 for safety and performance underscores the importance of maintaining high standards in industrial cleaning agents. Implementation of this standard will ensure that industrial detergents are effective, **safe, non-corroding** and **sustainable**, supporting the needs of diverse industries while safeguarding ecological health.