

IS 4989:2018 - Foam Concentrate for Producing Mechanical Foam for Fire Fighting

IS 4989:2018 specifies foam concentrate for producing mechanical foam is a specialized fire-fighting product designed to be mixed with water to create foam used for extinguishing fires. The foam generated is typically used in fighting flammable liquid fires, such as those involving oil or chemicals. It works by forming a barrier that smothers the fire, preventing oxygen from fueling the flames. The foam concentrate is usually made of surfactants, stabilizers, and solvents, and it is diluted in a specified ratio with water to form the mechanical foam.

Consumers expect foam concentrates to possess certain quality attributes to ensure effective fire suppression. The standard specifies the type, specification, packaging, storage and marking of the product. Key physical and chemical parameters include freezing and thawing, pH, specific gravity, **miscibility with distilled water**, viscosity, surface tension, **fire test on polar solvent**, **fire test on hydrocarbon**, etc.

IS 4989:2018 addresses these consumer expectations by setting comprehensive specifications for foam concentrates. It defines the required characteristics of foam concentrate, such as **minimum expansion ratio**, optimal drainage time, and **required fire extinguishing performance** through standard testing methods. The standard also ensures the foam concentrate's stability over a range of temperatures and provides guidelines for compatibility with standard fire-fighting equipment. Furthermore, IS 4989:2018 includes provisions for **environmental safety**, ensuring that foam concentrates meet eco-friendly and non-toxic standards. By specifying these parameters, the standard ensures consistent product quality and reliability, providing confidence in the foam's effectiveness for fire-fighting operations.