

IS 493 : PART 1 : 2019, Specification for general purpose machinery and spindle oils: Part 1 machinery oils (Second Revision)

General purpose machinery and spindle oils are specifically used for various types of non-critical (total loss) applications where the **oil retention** is for a small period of time. Machinery oil is a **general-purpose lubricant** used across various machines, providing protection and lubrication, while spindle oil is a low-viscosity lubricant designed for high-speed, precision machinery like spindles, focusing on reducing friction and ensuring smooth operation.

Machinery oil is expected to provide **effective lubrication**, reducing friction and wear. It should maintain stable viscosity across a range of temperatures and offer **corrosion protection**. The oil must resist oxidation, preventing sludge and buildup. It should be compatible with various machinery types and seals.

Indian Standard IS 493 (Part 1) prescribes the requirements and the methods of sampling and test for general purpose machinery oils for various types of non-critical (total loss) applications. The other part in this series is Part 2 Spindle oil. For more critical applications and high speed machinery anti-rust protection coupled with oxidation/thermal stability IS 11696 : 1986 may be followed.

Various physico-chemical properties including **kinematic viscosity**, **flash point**, **saponification value** and **pour point** and their test methods have been specified in the standard. These properties are critical in machinery oil for specific applications. Kinematic viscosity impacts lubrication and efficiency, flash point relates to **safety** and **thermal stability**, saponification value indicates **chemical stability** and pour point affects **cold weather performance**. Together, they help ensure optimal operation, safety, and longevity of machinery.

Implementing the specifications of IS 493 (Part 1) helps manufacturers produce high-quality machinery oils ensuring they meet necessary performance and safety criteria for various applications.

This standard does not cover oil compounded with fixed oils or soaps. This standard is not intended to cover oils containing additives but such oils are not precluded.