

IS 12029: 2023

Acid Oil- Specification

Acid oil is a by-product obtained from the treatment of soap stock with a mineral acid solution, primarily during the alkali refining of oils. It consists mainly of a mixture of fatty acids and neutral oil. The process involves using excess mineral acid along with heat and agitation to ensure complete splitting of all soaps in the soap stock, followed by washing to remove residual acidity. The settled organic layer is then stored in mild steel containers. Acid oil is mainly used for the production of distilled fatty acids and low-grade soaps.

A good quality acid oil should have a high total fatty matter (TFM) content, minimal moisture and volatile matter, and a low percentage of free mineral acids. The presence of oxidized fatty acids, unsaponifiable matter, iron, and ash should be minimal to maintain quality and usability in industrial applications.

IS 12029: 2023 prescribes the quality parameters and testing methods to ensure acid oil meets industry standards. It mandates a minimum **TFM content of 95%**, ensuring that the oil retains its essential fatty acid composition. The **moisture and volatile matter content must not exceed 3.0% to maintain stability and prevent degradation**. **Free fatty acids should be at least 50% by mass to ensure effectiveness** in downstream applications. The standard also sets **a limit of 0.02% for free mineral acid**, preventing excessive acidity that could affect processing. Additionally, **unsaponifiable matter should not exceed 5%**, and **oxidized fatty acids must remain within 5% to ensure purity**. The **maximum permissible iron content is 500 ppm**, while the **ash content is restricted to 0.25%** to prevent contamination.

For safe handling and distribution, acid oil must be packed in appropriate containers or transported in tankers, ensuring that packaging materials do not affect product quality. Marking requirements include details such as batch number, date of manufacture, expiry date, and compliance with the Legal Metrology (Packaged Commodities) Rules.