

IS 14781:2000 - Specification for Sodium Thiosulphate

Sodium thiosulphate, commonly known as "hypo", is widely used in photography, water treatment, and analytical chemistry. It is available in three grades: technical, pure, and analytical, each suited for specific applications.

IS 14781: 2000 covers only the technical, pure and analytical reagent grade of the material. The photographic grade material has been covered under a separate standard, IS 246: 1986 'Sodium thiosulphate, crystalline, photographic grade (Fourth revision)'.

IS 14781: 2000 defines quality requirements, testing methods, and sampling guidelines for sodium thiosulphate in its crystalline form.

Key Quality Parameters and Their Importance

Purity Levels: Sodium thiosulphate content must range from 97 to 101% for technical grade and 99.0 to 101.0% for pure and analytical reagent grades, ensuring reliability for industrial, laboratory, and high-precision applications.

Solution Clarity: A 40 g/100 ml aqueous solution should be clear and sediment-free, confirming the absence of impurities that could affect reactivity and stability.

pH Range (10% Solution): pH must be within 6.0–8.5 for technical grade and 6.0–7.5 for higher grades, ensuring compatibility with various applications.

Insoluble Matter: No insoluble substances should be present, maintaining solution clarity and preventing reactions with impurities.

Sodium Sulphide: Limited to 0.05% in technical grade to avoid unwanted chemical reactions.

Heavy Metals and Iron: Strict limits on heavy metals (e.g., lead) and iron ensure safety and purity, especially in analytical-grade use.

Calcium and Sulphate: Controlled to prevent interference in photographic and analytical applications.

Handling and Hazard Information

The material should be stored in a cool, dry and well-ventilated area away from moisture as it is highly hygroscopic and absorbs water from the air. It should be stored in tightly sealed containers to prevent degradation.

Appropriate Personal Protective Equipment (PPE), such as gloves, safety goggles, and lab coats should be used to avoid contact with skin and eyes.

In summary, the standard covers all safety and quality related parameters which are available in technical literature for safe and efficient use of the product for its intended applications. Compliance to this standard gives you the best assurance of quality and safety.