BUREAU OF INDIAN STANDARDS

Indian Standard IS 3401:1992– Specification for Silica Gel

When choosing a moisture-absorbing agent for packaging and storage, reliability, efficiency, and chemical safety are key concerns. You want a desiccant that effectively protects products from **moisture**, **preventing degradation**, **mold**, or **corrosion**. Silica gel meets these demands, as it is highly effective at absorbing moisture without reacting chemically with nearby materials, making it suitable for various uses from electronics to food packaging.

Indian Standard IS 3401:1992, developed by BIS, specifies the essential quality and performance requirements for silica gel used as a desiccant. This standard ensures that silica gel has the necessary moisture absorption capacity to protect sensitive items under different humidity conditions. Testing for absorption capacity at multiple humidity levels ensures that the silica gel performs reliably, regardless of environmental conditions.

IS 3401 also defines critical parameters such as **granule size**, **purity**, and **pH stability**. Proper granule size and minimal impurities are essential to maximize the surface area available for moisture absorption, while chemical stability ensures the silica gel remains safe for use with sensitive products. Furthermore, the standard addresses the packaging of silica gel, mandating moisture-proof, contamination-resistant containers. This packaging maintains the product's integrity, ensuring it performs as expected until it is ready for use.

Color indicators, when present, are an added convenience, visually signaling when the gel has reached full moisture absorption capacity.

In summary, IS 3401:1992 assures consumers that the silica gel they use meets high standards for moisture control and safety. Look for the BIS mark to ensure compliance, which guarantees the silica gel is high quality, effective, and safe for your applications.