



IS 13921:2024
for
Chelated Zinc (Zn-EDTA) - Agricultural Grade



Chelated Zinc (Zn-EDTA) is a specialized agricultural micronutrient fertilizer where zinc is bound to EDTA (Ethylenediaminetetraacetic acid) chelating agent. This **chelation** process creates a stable complex that enhances **zinc bioavailability** for plant uptake, making it more effective than conventional zinc fertilizers. This is compatible with other fertilizers and minerals and is appropriate for use as a preventative measure before a deficiency occurs. It is extremely effective and readily accessible for boosting plant development, resulting in increased yields

Agricultural users of this product have specific quality expectations, including consistent zinc content for reliable crop nutrition, high purity with minimal heavy metal contamination, proper chelation for enhanced nutrient absorption, and good solubility and flowability for easy application. Users also expect stable pH for compatibility with other agricultural inputs, safe handling properties, and clear labelling for proper application.

IS 13921:2024 comprehensively addresses these quality expectations through detailed specification and requirements. The standard mandates a minimum 12% zinc content in Zn-EDTA form while setting strict limits on **harmful contaminants** such as lead (0.003% max), cadmium (0.0025% max), and arsenic (0.01% max). The physical properties are clearly defined, requiring the product to be a free-flowing crystalline powder with a controlled pH range of 6.0 to 6.5 for optimal stability. The 2024 revision of this standard particularly strengthens safety aspects by incorporating limits for **cadmium and arsenic**, aligning with the **Fertilizer Control Order, 1985**.

The standard also provides comprehensive guidelines for packaging and storage, requiring moisture-resistant packaging with inner plastic liner and specifying convenient package sizes from 100g to 500g. Quality assurance is maintained through detailed testing methods for all parameters, specific sampling procedures, and strict conformity assessment requirements. Consumer protection is ensured through mandatory marking requirements including zinc percentage, batch traceability, manufacturing date, net quantity, and manufacturer details.