

## IS 1664 : 2002 MINERAL MIXTURES FOR SUPPLEMENTING CATTLE FEEDS - SPECIFICATION

Minerals play many important functions in the body and the vital processes in a living organism are dependent on the presence of various minerals in proper proportion. Hence, to ensure optimum health and productivity in livestock, it is essential to provide these minerals, whenever necessary, in adequate quantity and proportion.

The **IS 1664: 2002** provides detailed guidelines for mineral mixtures used in cattle feed supplements. It is expected that this standard will help in the manufacture of mineral mixtures of the required quality for supplementing ration of livestock directly or through cattle feeds. The standard prescribes two types of mineral mixtures – Type 1 & Type 2, the latter being more stringent in its requirements.

This standard prescribes the requirements and methods of sampling and test for nutrients such as Calcium, Phosphorus, harmful substances such as fluorine, lead, arsenic and pathogens such as *Bacillus anthracis* and *Clostridium* species. A range of approved ingredients, such as calcium carbonate, dolomite limestone, zinc sulfate, and copper sulfate, is provided. These ingredients must be suitable for cattle consumption and devoid of animal-origin materials, emphasizing the growing concern for ruminant-safe additives.

The product should be odourless, white, free flowing powder, **particle size** of the material shall be such that, when sieved, not more than 10 percent of the material is retained on 212 micron IS Sieve and shall be free from adulterants and spores of **Bacillus anthracis, Clostridium sp.** etc. **Moisture content, Total ash & Acid Insoluble Ash** has been restricted in the final product to maintain the stability & quality of product. Requirements for Mineral Mixture for Supplementing Cattle feed grade also include trace elements such as **Iron, Iodine, Magnesium, Copper, Cobalt, Zinc, Copper, Sulphur**. The requirement of heavy elements **Lead & Arsenic** is also stipulated in the standard.

There are two amendments issued for this standard. The second amendment stipulates the use of AAS and ICP as alternative test methods.

The mineral mixture is packed in moisture-proof bags, cartons, boxes or drums which should be sound, clean and free from causal agents of infectious diseases and parasites. The container of the mineral mixture is marked with name and type of material, name of the manufacturer with certain other requirements along with standard mark if the material conforms to the standard.