



IS 2142: 2023 Bromine, Technical — Specification

Bromine is a member of the halogen group of elements along with chlorine, iodine and fluorine. It is a heavy, reddish-brown liquid that gives off a red vapor at room temperature. It is the only non-metallic element that is liquid at room temperature. Bromine serves as a starting material for a variety of products that are the building blocks for highly complex organic molecules that meet specific performance, environmental, and quality requirements. Bromine is utilized in many applications including flame retardants, agrochemicals, pharmaceuticals, fine chemicals, high performance rubber, polymers, biocides and energy storage, as well as in chemicals used by the oil and gas industries in completion fluids, and inorganic bromides for mercury control. It is also used in antiknock compounds, wool processing, fumigants, fire extinguishing fluids, and military gases.

IS 2142: 2023 having detailing of the quality requirements, sampling methods and testing procedures for the chemical. The standard, originally published in 1962 and revised in 1974 and 1992, has been updated to incorporate modern testing techniques for better accuracy and to align with current manufacturing practices. The revised version introduces instrumental methods for determining sulfate content and provides updated packing and marking guidelines.

The standard specifies the chemical composition of technical bromine, requiring a minimum bromine content of 98.5%. It also sets limits on key impurities such as chlorine (max 0.5%), iodine (max 0.05%), non-volatile matter (max 0.05%), and sulfates (max 0.015%). The testing procedures are clearly outlined for each of these characteristics. For instance, bromine content is measured using a titration method, chlorine content is tested using silver nitrate, and iodine content is determined through colorimetric comparison.

In terms of **packing and marking**, bromine to be packed in glass bottles or sealed metal drums, ensuring the material is safely stored and transported. These containers must be labeled with essential information, including the product name, batch number, and source of manufacture. A prominent warning label, “CORROSIVE HANDLE WITH CARE”, is also required for safety purposes.

Consumers expect high purity, consistent quality, and safe handling of bromine for its industrial applications. The standard addresses these expectations by setting strict limits on impurities, ensuring accuracy in testing, and outlining clear safety and packaging protocols.

Compliance to the requirements prescribed in the standard ensures a good quality product which meets the expectations of the consumers.