IS 17439:2020 Polyphosphoric acid – Specification

Polyphosphoric acid (PPA) is prepared by condensation of orthophosphoric acid molecules (H_3PO_4). PPA is commercially produced either by dehydration of H_3PO_4 at high temperature (wet process), for short chains or by heating P_2O_5 dispersed in H_3PO_4 and dry process, for more than 10 repeated units.

PPA is odourless, colourless, highly viscous liquid with diliquescent nature. It is non-oxidizing agent with powerful dehydration properties and moderate acidity. Therefore, it is extensively used as a catalyst in synthesizing cyclization of acids, esters, ketones, aldehydes, acetals, alcohols and alkanes to aromatize ring derivatives. PPA acts as an adsorbent of ammonia. It is used widely in pharmaceutical, chemical and leather industries. It can substitute orthophosphoric acid.

The standard for PPA is published in 2020. It prescribes the requirements for technical and reagent grades of PPA; and their related methods of sampling and testing. The requirements include relative density, percentage of H_3PO_4 and P_2O_5, and other chemicals, which affect the quality of PPA required for its intended use.

Packing and marking are crucial for PPA, due to it’s corrosive nature. These details are clearly mentioned in the standard for the information of users, for its safe handling.