SYNOPSIS

Document No. & Title: Doc No: CHD 1(15162)F IS xxxxx: 2020 POLYPHOSPHORIC ACID —SPECIFICATION

Scope: This standard prescribes the requirements and the methods of sampling and test for polyphosphoric acid.

Polyphosphoric acids are a series of oxyacids of phosphorus with the general formula $H_{n+2}P_nO_{3n+1}$ formed by condensation of orthophosphoric acid molecule and containing a backbone chain consisting of alternating P and O atoms bonded together. Polyphosphoric acid is commercially produced either by dehydration of H_3PO_4 at high temperature (known as wet process) or by heating P_2O_5 dispersed in H_3PO_4 (known as dry process). The dehydration method tends to produce short chain whereas the dispersion method usually produces chains with more than 10 repeated units. Polyphosphoric acid is non-oxidizing agent having powerful dehydration properties with moderate acidity. Polyphosphoric acid is used to catalyse cyclization of acids, esters, ketones, aldehydes, acetals, alcohols and alkanes to aromatize ring derivatives. The first member of the series is pyrophosphoric acid (n=2) and the series includes the highly polymeric metaphosphoric acid. The higher acids generally exist in an equilibrium mixture. PPA is used in synthetic processes. PPA is widely used in industries including medicine, aromatics, leather and chemical industry. It is used as a catalyst for dimethyl carbonate synthesis from urea and methanol. PPA acts like an adsorbent in ammonia generated process. In the form of silicon dioxide-polyphosphoric acid, it forms a reusable,easy to handle heterogenous catalyst.

Grades: The material shall be of the following two grades:

a) Technical grade (content. 95%, 105% on H_3PO_4 basis)
b) Reagent grade (content 115% on H_3PO_4 basis)

Sagar