

Polyphosphoric Acid 115%;116% PPA 115; PPA 116

Plastic Additives / Intermediates

Description

PPA 115 and PPA 116 are colourless viscous liquids, miscible with water, hydrolyzing into ortho-phosphoric acid. The reaction is exothermic and demands due care. The products are insoluble in hydrocarbons and halogenated hydrocarbons.

Chemical composition

Polyphosphoric acid

CAS Registry Number

8017-16-1

EINECS Number

232- 417-0

Typical properties

	PPA 115	PPA 116
Appearance	viscous liquid	viscous liquid
P ₂ O ₅ content (%)	82.5 - 83.5	83.5 - 84.5
Hazen colour value	<50	<50
Density at 20°C (g/ml)	2.03 – 2.06	2.03 - 2.07
Arsenic (ppm)	<85	<85
Iron (ppm)	<20	<20
Heavy metals (as Pb) (ppm)	<20	<20
Viscosity (cSt) at 25°C	6500	9500
Viscosity (cSt) at 80°C	600	900
Ortho (%)	4 - 6	3 - 5
Pyro (%)	14 - 18	10 - 14
Tri (%)	15 - 19	11 - 15
Tetra (%)	15 - 19	11 - 15
Higher (%)	40 - 50	50 - 70

Storage

Due to their high viscosity, the products are normally handled at 40°C - 90°C. Care should be taken handling these materials at such temperatures.

PPA 115 and PPA 116 are corrosive to ferrous metals. Stainless steel 316 is normally recommended as the material of construction for storage facilities. Bunds may be lined with epoxy resin. Shelf life under normal storage conditions is 2 years.



Packaging

300kg drum, bulk



Applications

Fine chemicals, pharmaceuticals and petrochemical synthesis agents

PPA 115 and PPA 116 are good solvents for many organic compounds and have been used extensively in organic synthesis. They are one of the most effective reagents for carrying out acetylation, alkylation, cyclization, and acid-catalyzed reactions. They are used in a variety of reactions such as dehydrations, rearrangements, and synthesis of nitrogen containing heterocycles.

Production of phosphate esters

Phosphate Esters with a high monoester content (RH_2PO_4). These esters are also referred to as phosphate esters.

Fire resistant polyurethane foams

Phosphorus based polyols can be prepared from polyphosphoric acids and polyhydroxy compounds.

Bitumen and asphalt

Widely used to improve the performance of bitumen and asphalt. Asphalt binders can be chemically modified with poly phosphoric acid to improve high temperature rheological properties without adversely affecting low temperature rheological properties.

Metal treatment

Descaling and brightening of metal surfaces.

Product safety

Relevant safety data and references as well as possibly necessary warning labels are to be found in safety data sheet.

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