

### Polyphosphoric acid PPA 115

#### Phosphorus Specialties & Intermediates

#### Description

PPA 115 is miscible with water, hydrolyzing into ortho-phosphoric acid. Reaction is exothermic and demands due care.

#### Chemical Composition

Polyphosphoric acid

#### CAS Registry Number

8017-16-1

#### Appearance

PPA 115 is a colourless viscous liquid.

#### Solubility

PPA 115 is insoluble in hydrocarbons and halogenated hydrocarbons.

#### Typical Properties\*

Property	Nominal Value	Unit
P <sub>2</sub> O <sub>5</sub> content	82.5 - 83.5	%
Hazen colour value	max. 50	#
Density at 20 °C	2.03 - 2.06	g/ml
Arsenic content	max. 85	ppm
Iron content	max. 20	ppm
Heavy metals content (as Pb)	max. 20	ppm
Viscosity at 25 °C / 80 °C	6500 / 600	cSt
Ortho	4 - 6	%
Pyro	14 - 18	%
Tri	15 - 19	%
Tetra	15 - 19	%
Higher	40 - 50	%

\*The analytical data are guide values.



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### Application

#### Fine chemicals, pharmaceuticals and petrochemical synthesis agents

PPA 115 is a good solvent for many organic compounds and has been used extensively in organic synthesis. It is one of the most effective reagents for carrying out acetylation, alkylation, cyclization, and acid-catalyzed reactions. It is 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 ( $\text{RH}_2\text{PO}_4$ ).

#### 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 polyphosphoric acid to improve high temperature rheological properties without adversely affecting low temperature rheological properties.

#### Metal treatment

Descaling and brightening of metal surfaces

### Packaging

300 kg drum, bulk.

### Storage conditions

Product should be handled with care at 40 to 90 °C due to its high viscosity. PPA 115 is corrosive to ferrous metals. Stainless steel 316 is usually recommended as material of construction for storage facilities. Bunds may be lined with epoxy resin. Shelf life under normal storage conditions is 2 years.

### Handling

Consult the safety data sheet for relevant safety data & references as well as possibly necessary warning labels.



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