

# Red phosphorus

Properties: Red phosphorus, is a purplish-red solid, shiny and non-toxic. Red phosphorus is highly polymerized structure with single bond of P4 tetrahedron to form chain or ring with high stability. It acts with nitric acid to produce phosphoric acid, and heated in chlorine gas to produce chloride. Yellow phosphorus is gradually converted to red phosphorus by heating to 250°C for several days under atmospheric pressure in vacuum.

Uses: Semiconductor substrate/epitaxial material doping source.

## · Identifier

Chemical Formula	P
CAS No.	7723-14-0
EINECS No.	231-768-7

## · Physical and chemical properties

Molecular weight	30.97 g/mol	Flash point	30°C	Reactivity	Has high stability
Appearance	Purple-red cubic crystals	Melting point	590°C	Solubility	Insufficient in water, hydrocarbide Slightly soluble in water -free ethanol
Density	2.34 g/cm <sup>3</sup>	Boiling point	280°C	Storage	Shady and cool, well-ventilated

## · Metal impurities

Impurities	Unit	Specification
Mg	ppbw	≤100
Si	ppbw	≤1000
Ca	ppbw	≤100
Cr	ppbw	≤100
Fe	ppbw	≤100
Ni	ppbw	≤100
Cu	ppbw	≤100
As	ppbw	≤200
Pb	ppbw	≤80
Combined total impurities	ppbw	≤1000

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