Technical Information

Red Amorphous Phosphorous

Chemical and Physical Properties

- **Formula:** P_4 (polymeric network)
- **CAS Number:** 7723-14-0
- **Molecular Weight:** 123.89 g/mol
- **Appearance:** Red or violet-red odorless powder
- **Assay / Purity:** ≥ 98.0% (typical technical grade)
- **Density:** 2.34 g/ml @ 25 °C
- **Melting / Sublimation Point:** Sublimes around 416 °C
- **Auto-ignition Temperature:** 215 °C … 260 °C
- **Solubility:** Practically insoluble in water and organic solvents

Common Applications

- **Flame Retardants:** Used in polymers and electronics
- **Pyrotechnics:** Used in safety matches, fireworks, and smoke generation
- **Chemical Synthesis:** Precursor for pharmaceutical and agrochemical intermediates like metal phosphides

Safety and Handling

- **Classification:** Flammable solid. Sensitive to friction, shock, and electrostatic discharge.
- **Moisture Sensitivity:** Reacts slowly with moist air under heat generation to release toxic and flammable phosphine (PH_3) gas and phosphoric acid.
- **Storage:** Store in tightly closed, grounded containers in a cool, dry, and well-ventilated area away from oxidizing agents.