

NUMBER 4845

PVP K-12 polymer

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Description

PVP (Polyvinylpyrrolidone) K-12 polymer is a hygroscopic, amorphous polymer. It is a low molecular weight linear nonionic polymer that is soluble in water and organic solvents, and is pH stable. It forms hard glossy transparent films and has adhesive, cohesive and dispersive properties.

Key Attributes

- Polyvinylpyrrolidone (PVP) can be plasticized with water and most common organic plasticizers. It is considered to be physiologically inert. Applications take advantage of one or more properties inherent in the polymer, typically due to the pyrrolidone ring.
- High polarity and the resultant propensity to form complexes with hydrogen donors, such as phenols and carboxylic acids, as well as anionic dyes and inorganic salts.
- Dispersancy, where components in a mixture are uniformly distributed through the use of polyvinylpyrrolidone.
- Hydrophilicity, where the water solubility of PVP is its dominant feature and frequently a factor along with other properties valuable to numerous applications.

Applications and Usage Notes

- **Ceramics** – binder in high temperature fire-prepared products such as clay, pottery, porcelain, brick product, dispersant for ceramic media slurries and viscosity modifier.
- **Glass and Glass Fibers** – acts as a binder, lubricant and coating agent.
- **Coatings/Inks** – digital printing coating, ball-point inks, protective colloid and leveling agent for emulsion polymers/ coatings/ printing inks, pigment dispersant, water colors for commercial art, temporary protective coatings, paper coatings, waxes and polishes.
- **Electronic Applications** – storage batteries, printed circuits, cathode ray tubes, chemical-mechanical planarization slurries.
- **Lithography and Photography** – foil emulsions, etch coatings, plate storage, gumming of lithographic plates, dampener roll solutions, photo and laser imaging processes, microencapsulation, thermal recording, carrier, finisher preserver of lithographic plates, thermal transfer recording ribbons and optical recording discs.
- **Fibers and Textiles** – synthetic fibers, dyeing and printing, fugitive tinting, widely used as dye dispersant and to disperse titanium dioxide, scouring, delustering, sizing and finishing, greaseproofing aid, soil release agent.



Typical Product Properties

Property	PVP K-12 polymer
Appearance @ 25°C	Off-white amorphous powder
K-Value (Viscosity of 1% solution)	10-14
Color (APHA)	<50
% Active	95 min.
% Moisture	5 max.
% Ash (combustion)	<0.02
pH (5% aqueous solution)	3-5
Bulk Density (g/cc)	0.6-0.7
Molecular weight (g/mol)	4,000-6,000
Tg (°C)	120

Packaging Information

Product	Physical Form	Pkg Type	Net Wgt (lbs)	Net Wgt (kgs)
PVP K-12	Powder	HDPE Drum	132 lbs	59.87 kgs

Product Safety Information

For health and safety data and handling, storage and disposal procedures, please refer to the Safety Data Sheet (SDS) and product label.

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