

NUMBER 4847

## PVP K-30 polymer

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### Description

PVP (Polyvinylpyrrolidone) K-30 polymer is a hygroscopic, amorphous polymer. They are linear nonionic polymers that are soluble in water and organic solvents and are pH stable. PVP K-30 forms hard glossy transparent films and have 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.
- Adhesion, taking advantage of the molecular weight PVP formulating in aqueous media, then evaporating sufficient water to generate a solid product for the desired application.
- Cohesivity, where cohesive strength is achieved through a variety of dry blending and granulation techniques.

### Applications and Usage Notes

- **Adhesives** – pressure-sensitive and water-remoistenable types of adhesives, food packaging (indirect food contact), metal adhesives, abrasives, sandcore binder, rubber to metal adhesives and glue sticks.
- **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, binder for metal salts or amalgams in batteries, gold, nickel, copper and zinc plating, a thickener for solar gel ponds and as an adhesive to prevent leakage of batteries, serves as an expander in cadmium-type electrodes, binder in sintered-nickel powder plates.
- **Lithography and Photography** – foil emulsions, etch coatings, plate storage, gumming of litho- graphic 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, dye stripping and dispersant, scouring, delustering, sizing and finishing, greaseproofing aid, soil release agent. Widely used as dye dispersant and to disperse titanium dioxide.
- **Membranes** – macroporous, multiporous, desalination, gas separating, liquid ultrafiltration, hemodialysis, selective permeability types of membranes, hollow fiber membranes.

- **Metallurgy** – processing for both ferrous and non ferrous metals, coating ingredient to aid or remove material from metal surfaces such as copper, nickel, zinc and aluminum.
- **Paper** – inorganic papers, cellulose papers, rag stock, rag stripping, coloring and beating operations, copying paper, printing paper and electric insulating papers, paper adhesives.
- **Polymerizations** – acrylic monomers, unsaturated polyesters, olefins, including PVC, styrene beads, substrate for graft polymerization, template in acrylic polymerization.
- **Water and Waste Treatment, and Hygiene** – clogging of reverse osmosis membranes, water treatment in fish hatchery ponds, removal of oil, dyes from waste water and waste water clarifier in papermaking, in deodorants for neutralization of irritant and poisonous gas, in air conditioning filters.

## Typical Product Properties

Property	PVP K-30 polymer	
	Appearance @ 25°C	Colorless to pale yellow aqueous solution
K-Value (Viscosity of 1% solution)	27-33	26-35
Color (APHA)	150 max.	80 max.
% Active	29-31	95 min.
% Moisture	-	5 max.
% Aqueous	69-71%	-
% Ash (combustion)	0.012	0.02 max.
pH (5% aqueous solution)	6-9	3-7
Brookfield Viscosity, cps (5% solids @ 25°C)	3	
Brookfield Viscosity – as is @ 25°C	200-500	-
Specific Gravity @ 25°C	1.062	-
Bulk Density (g/cc)	-	0.4-0.6
Film Density (g/cc)	1.207	-
Freezing Point °C	-2.7	-
Specific Heat (cal/g/KC)	0.803	-
Molecular weight (g/mol)	40,000 – 80,000	
Tg (°C)	163	

## Packaging Information

Product	Physical Form	Pkg Type	Net Wgt (lbs)	Net Wgt (kgs)
PVP K-30	Powder	Fiber Drum	110 lbs	49.9 kgs
PVP K-30	Powder	HDPE Drum	100 lbs	45.3 kgs
PVP K-30	Powder	Fiber Drum	200 lbs	90.7 kgs
PVP K-30G	Powder	Fiber Drum	110 lbs	49.9 kgs
PVP K-30 30% Solution	Liquid	HDPE Drum	450 lbs	204.1 kgs
PVP K-30 30% Solution	Liquid	HDPE IBC	2000 lbs	900 kgs
PVP K-30 Solution A	Liquid	HDPE Drum	450 lbs	204.1 kgs
PVP K-30 Solution A	Liquid	HDPE IBC	2250 lbs	1020.6 kgs
PVP K-30 polymer	Liquid	Bulk TW	-	-

## 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.

To learn more, visit [ashland.com](http://ashland.com)

EMAIL: [specialtiessolutions@ashland.com](mailto:specialtiessolutions@ashland.com)

CHINA Tel: +86 212402 4888 DUBAI Tel: +9714 3818512 INDIA Tel: +91 22 61484646  
MEXICO Tel: +52 55 52 76 6121 SINGAPORE Tel: +65 6775 5366  
SWITZERLAND Tel: +4152 560 55 00

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