



NUMBER 4848

## PVP K-60 polymer

### Description

PVP K-60 polymers are supplied as an aqueous solution. PVP (Polyvinylpyrrolidone) K-60 polymer is a linear nonionic polymer that is soluble in water and organic solvents, and is pH stable. They form hard glossy transparent films and have adhesive and cohesive 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 in numerous applications.
- Adhesion, taking advantage of the higher 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, 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.
- **Coatings/Inks** – digital printing coating, ball-point inks, water colors for commercial art, temporary protective coatings, paper coatings.
- **Lithography and Photography** – foil emulsions, etch coatings, plate storage, gumming of lithographic plates, dampener roll solutions, photo and laser imaging processes.
- **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, used in metal quenchant baths.
- **Paper** – inorganic papers, cellulose papers, rag stock, rag stripping, coloring and beating operations, copying paper, printing paper and electric insulating papers, paper adhesives.



RESPONSIBLE CARE®

All statements, information and data presented herein are believed to be accurate and reliable, but are not to be taken as a guarantee, an express warranty, or an implied warranty of merchantability or fitness for a particular purpose, or representation, express or implied, for which Ashland Inc. and its subsidiaries assume legal responsibility. © Registered trademark, Ashland or its subsidiaries, registered in various countries. ™Trademark, Ashland or its subsidiaries, registered in various countries. \*Trademark owned by a third party. © 2013, Ashland.

09-2013

## Typical Product Properties

Property	PVP K-60 polymer		
	Yellow 47% aqueous solution	Clear viscous 30% aqueous solution, with Amerstat	Clear viscous 30% aqueous solution, with Sorbic acid
Appearance @ 25°C	Yellow 47% aqueous solution	Clear viscous 30% aqueous solution, with Amerstat	Clear viscous 30% aqueous solution, with Sorbic acid
K-Value (Viscosity of 1% solution)	50-62	50-62	59-63
Color (APHA)	100 max	100 max	100 max
% Active	45-49	30-32	30-32
% Aqueous	51-55	70-72	70-72
% Ash (combustion)	0.044	0.03	0.03
pH (5% aqueous solution)	3-7	3 - 7	3 - 7
Brookfield Viscosity, cps (5% solids @ 25°C)	10		
Brookfield Viscosity – as is @ 25°C	10-15	12,800-19,800	12,800-19,800
Specific Gravity @ 25°C	1.122	1.063	1.063
Freezing Point °C	-2.2	-	-
Specific Heat (cal/g/KC)	0.738	-	-
Molecular weight (g/mol)	240,000-450,000		390,000 – 470,000
Tg (°C) (freeze dried)	170	170	170

## Packaging Information

Product	Physical Form	Pkg Type	Net Wgt (lbs)	Net Wgt (kgs)
PVP K-60 20% Solution	Liquid	HDPE IBC	2250 lbs	1020.6 kgs
PVP K-60 30% Solution	Liquid	HDPE Drum	450 lbs	204.1 kgs
PVP K-60 45% Solution	Liquid	Bulk	-	-
PVP K-60 Solution	Liquid	HDPE Drum	450 lbs	204.1 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.

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