

STARPC PVPs

Multifunctional Ingredients for Empowered Beauty



PVP K
Polyvinylpyrrolidone

VP/VA
Vinylpyrrolidone/
Vinyl Acetate Copolymer

Skin Care
Hair Care
Oral Care



From Earth to STARPC

The PVP Powerhouse



It begins deep within the Earth, with natural resources like mineral oil and natural gas.

Through the marvels of science, these raw materials are transformed into STARPC, a versatile PVP-based Life Science powerhouse.

STARPC PVPs are inherently cleanly synthesized. Additional purification ensures the highest levels of purity and control, delivering multifunctional ingredients precisely tailored to meet the demands of modern cosmetics and hygiene products.

GMP/HACCP and ISO Certified Manufacturing Standard

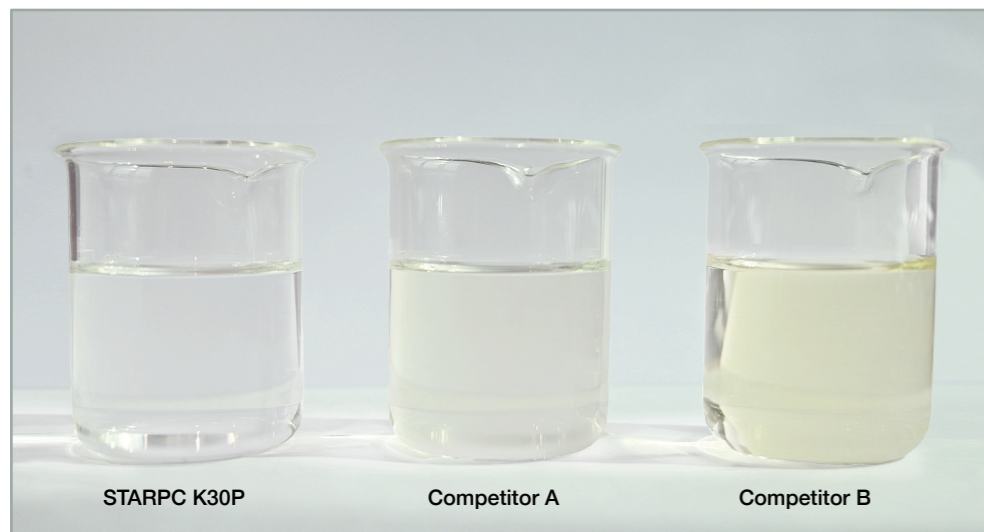
STARPC PVP-based qualities are produced under certified GMP conditions on dedicated production lines, ensuring no cross-contamination and delivering consistent, reliable performance while supporting quality, safety, and efficiency.

Supported by our JV partner JRS Rettenmaier & Söhne, Germany and in cooperation with Chongqing University, we deliver top-tier quality driven by international and domestic expertise, advanced R&D, and first-class service.

STARPC PVP-based products are produced utilizing SSP's patented technology from highly pure NVP, featuring minimal impurities and an almost odorless profile. With comprehensive knowledge and control over the raw material, production process, and equipment, we effectively minimize any chance of contamination with aflatoxins, mycotoxins and other impurities.

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STARPC PVPs deliver:

- ✓ Crystal-clear quality
- ✓ Minimal odor
- ✓ Fast dispersion
- ✓ Reliable batch consistency

10% PVP K30 Aqueous Solution

Advanced Manufacturing for Cost-Effective PVP Solutions

Located in the National Economic and Technological Development Zone of Chongqing, China, our state-of-the-art facility ensures the efficient production of STARPC PVP-based products, offering cost-effective and even tailor-made solutions to our customers. Each product category exhibits a special characteristic and

performance. Depending on the desired functionality special grades are offered. STARPC PVP and VP/VA are available in powder form and tailor-made liquid solutions. The powder forms of STARPC PVP and VP/VA are denoted with "P" and the liquid solutions with "S" in the product name.

| Product Categories | | |
|----------------------|---|--|
| Brand Name | STARPC PVP K | STARPC PVP/VA |
| INCI Name | PVP | VP/VA Copolymer |
| Chemical Description | Polyvinylpyrrolidone | Copolymer of Vinylpyrrolidone and Vinyl Acetate |
| Molecular Formula | | |
| Structure Formula | (C ₆ H ₉ NO) _n | (C ₆ H ₉ NO) _n (C ₄ H ₆ O ₂) _m |
| HS No. | 390599 | 390591 |
| CAS No. | 9003-39-8 | 25086-89-9 |
| Dosage Forms | P and S | P and S |



STARPC PVP based products are backed by comprehensive regulatory documentation and certifications, simplifying supplier qualification and ensuring compliance with international standards.

| Regulatory | | |
|--|---|---------------|
| Item | STARPC PVP K | STARPC PVP/VA |
| ISO | ISO 9001, ISO 14001, ISO 45001, ISO 22000 | |
| GMP | EXCiPACT GMP | |
| Kosher | Yes | Yes |
| Halal | Yes | Yes |
| U.S. FDA Registration of Food and Facilities | Yes | Yes |

Further regulatory information can be found at <https://pvp-chem-agency.com/ra-qm>

Leading global companies rely on SSP's PVP-based multifunctional polymers for consistent, high-quality performance across the Life Science industries.

What does that Mean for Application?

STARPC PVP and VP/VA can both be used in similar Personal Care application fields, but their distinct properties allow them to address different formulation challenges. These differences are also reflected in their preferred dosage forms and performance outcomes.

Comparison Summary:

- STARPC PVP K-Grades** are best for flexible films, light hold, and water-based applications. Ideal for products requiring smooth textures and moderate adhesion.

Each polymer serves distinct roles depending on the product requirements, such as flexibility, adhesion, hygroscopicity, or film durability.
- STARPC VP/VA** is superior for strong-hold, humidity resistance, and products demanding durable films or enhanced adhesion.

Within each STARPC product category, multiple grades are available, each specifically designed to further enhance certain functionalities and meet diverse formulation needs.

Applications and Functionalities of STARPC PVP-Based Products

STARPC PVP-based product categories seamlessly blend beauty and hygiene with outstanding performance, offering effective solutions with proven high functionality applications for:

| Category | Applications | Functionalities |
|----------------------|---|---|
| Hair Styling | Gels, Waxes, Sprays, Lotions | Film formation for hold and styling, moisture resistance, improved combability. |
| Color Cosmetics | Mascara, Eye Liner | Long-lasting film formation, enhanced adhesion to skin, uniform pigment distribution. |
| Skin Care | Emulsions, Clear Liquid Films, Anti-Ageing Moisturizers, Facial Cleanser, Sunscreen | Moisture retention, improved skin elasticity, enhanced active ingredient release, foam stabilization. |
| Face Masks | Sheet Masks, Hydration Masks | Film formation for improved adhesion, moisture retention, skin barrier enhancement. |
| Adhesive Products | Makeup Primer, Makeup Setting Spray, Eye Pad Adhesive Gel, Adhesive Films, Nail Polish Sealing Gel, Elastic Adhesive Strips | Strong yet flexible film formation, enhanced adhesion, long-lasting effect, improved skin compatibility. |
| Transdermal Delivery | Mucoadhesive Strips, Solubilization (penetration through skin) | Increased drug penetration, prolonged mucosal adhesion, Improved bioavailability. |
| Hygiene Products | Toothpaste, Mouth Wash, Diapers (adhesive strips) | Binding agent for ingredients, improved texture and stability, enhanced adhesion and flexibility. |
| Beauty from Inside | Tablets, Granules, Capsules * | Improved solubility and bioavailability of active ingredients, controlled release, stability enhancement, acceleration of disintegration, wet and dry binding capacity. |

* Sales and marketing for these dosage forms sold as Nutraceuticals and Pharmaceuticals are managed by our JV partner JRS Pharma <https://www.jrspharma.com>.

More About STARPC Solution (S) Grades and Packaging

STARPC PVP K-series and VP/VA are soluble in both water and alcohol. These products are available in two forms: dry powder, referred to as "P" grades, and liquid solutions, referred to as "S" grades.

STARPC S liquid solutions are delivered in 1000 L IBCs, double-stacked and shipped in 20ft containers to maximize load efficiency. For initial trials or smaller-scale testing, PE drums with capacities of 50 or 100 L are available upon request.

What Is the Composition of STARPC S-Grades?

The main components of STARPC S-grades are PVP (Polyvinylpyrrolidone) or PVP/VA (Vinylpyrrolidone and Vinyl Acetate Copolymer) and water.

To ensure extended shelf life, a small quantity (approximately 1% or less) of preservative is included. This can be tailored to customer requirements.

One commonly used preservative is PE 9010 (a blend of 90% Phenoxyethanol and 10% Ethylhexylglycerin), which is widely accepted by the Personal Care Industry due to its favorable profile, albeit at a slightly higher cost.



Customized Labeling

Starpc K90 20%S **SSP** 斯泰克

PVP K90, 20% Solution (with 1% PE9010)

Batch No.: *****
 Grade: Cosmetic Grade
 Manufacturing Date: **/**/****
 Re-evaluation Date: **/**/****
 Net Weight: 1000kg
 Gross Weight: 1060kg

Storage: Stored in a dry place at room temperature

MADE IN CHINA

Star-Tech & JRS Specialty Products Co., Ltd.
 No.1 Huanan Road, Changshou District, Chongqing 401221, China
info@chinassp.net www.chinassp.net

Composition of STARPC S-Grades

| Component | Component | INCI Name | CAS No. | HS No. |
|------------------|---------------------------------|-----------|------------|--------|
| STARPC K30 30%S | 29-31% PVP K30 69-71% Water | PVP | 9003-39-8 | 390599 |
| STARPC K90 20%S | 19-21% PVP K90 79-81% Water | PVP | 9003-39-8 | 390599 |
| STARPC VA64 50%S | 48-52% PVP VA64 48-52% Water | VP/VA | 25086-89-9 | 390591 |
| STARPC VA73 50%S | 48-52% PVP VA73 48-52% Water | VP/VA | 25086-89-9 | 390591 |



STARPC PVP K Series - Polyvinylpyrrolidone

STARPC PVP K grades are synthesized through the free radical polymerization of vinylpyrrolidone monomers in water. This process, which does not involve crosslinking, results in a linear, water-soluble polymer. The molecular weight of STARPC PVP K can be adjusted during synthesis, affecting the viscosity and gel formation of the final product.

STARPC PVP K is offered in two standard grades, differing mainly in molecular weight. It can be obtained in powder form or in tailored liquid solutions. The higher the K value, the higher the viscosity. Tailored production possible upon request.

| Properties | | | | |
|-------------------|---|--|---|--|
| Characteristics | STARPC K30P | STARPC K30 30% S | STARPC K90P | STARPC K90 20%S |
| Appearance | White to off-white powder | Clear and colorless to slightly yellowish liquid | White to off-white powder or flakes | Clear and colorless to slightly yellowish liquid |
| Odor | Faint characteristic odor | Faint characteristic odor | Faint characteristic odor | Faint characteristic odor |
| Solubility | Freely soluble in water and other common solvents | - | Freely soluble in water and other common solvents | - |
| K-Value | 27.0 - 33.0 | 27.0 - 33.0 | 88.0 - 96.0 | 90.0 - 98.0 |
| Solids Content, % | 95.0 - 100.0 | 29.0 - 31.0 | 95.0 - 100.0 | 19.0 - 21.0 |
| pH | 3.0 - 7.0 | 4.0 - 8.0 | 5.0 - 9.0 | 7.0 - 9.0 |
| NVP, ppm | ≤ 50 | ≤ 50 | ≤ 50 | ≤ 50 |
| Heavy Metals, ppm | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 |

STARPC K30P and K90P: Versatile Solutions for Diverse Applications

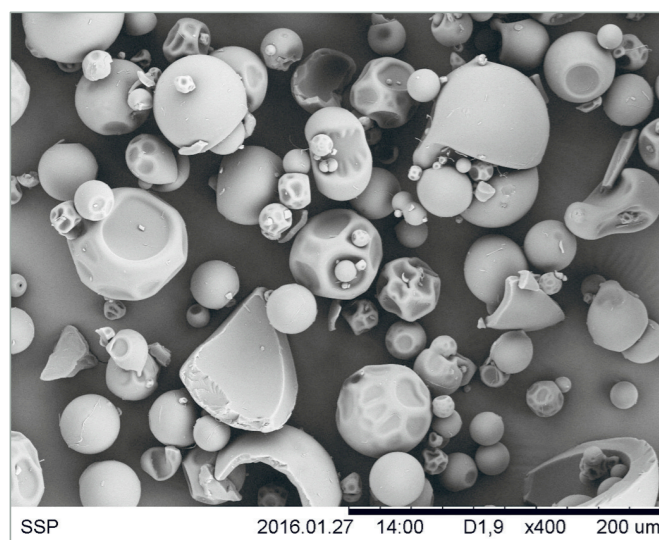
The low-viscosity grade, STARPC K30P, is commonly used as a wet binder in tablets and granules, as well as in hair sprays, where quick dissolution and smooth

application are essential. Conversely, the high-viscosity grade, STARPC K90P, is preferred for creating strong hold in hair gels, mousses, and mucoadhesive applications, thanks to its robust film-forming capabilities.

STARPC PVP K grades produce flexible, shiny, water-soluble films that are easily rinsed off with water, making them highly convenient for cosmetic applications.

INCI-Listed Functions:

- Antistatic
- Binding
- Emulsion Stabilizing
- Film-Forming
- Hair Fixing
- Viscosity Controlling



SEM of STARPC K30P

VP/VA - Vinylpyrrolidone/Vinyl Acetate Copolymer

STARPC PVP/VA (INCI Name: VP/VA) grades are produced through the copolymerization of vinylpyrrolidone and vinyl acetate monomers. These copolymers are water-soluble but exhibit lower hygroscopicity and less elasticity compared to the single-monomer-based STARPC PVP K-grades.

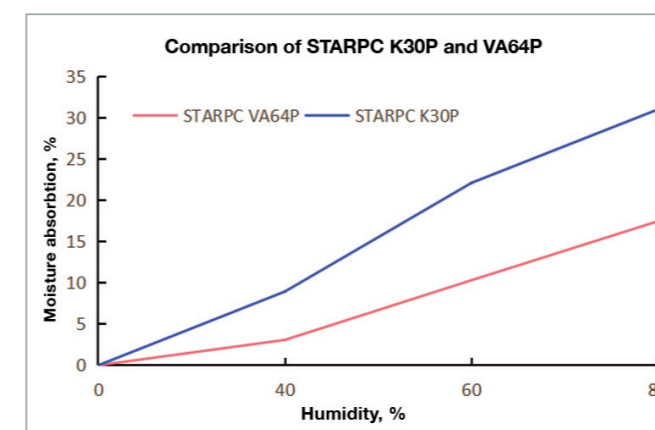
The product name numbers (e.g., VA 64) indicate the ratio of vinylpyrrolidone to vinyl acetate in the copolymer. For instance, VA 64 corresponds to 6 parts vinylpyrrolidone and 4 parts vinyl acetate.



| Properties | | | |
|-------------------|---|--|--|
| Characteristics | STARPC VA64P | STARPC VA64 50%S | STARPC VA73 50%S |
| Appearance | White to off-white powder | Clear and colorless to slightly yellowish liquid | Clear and colorless to slightly yellowish liquid |
| Odor | Faint characteristic odor | Faint characteristic odor | Faint characteristic odor |
| Solubility | Freely soluble in water and other common solvents | - | - |
| K-Value | 26.0 - 34.0 | 26.0 - 34.0 | 24.0 - 32.0 |
| Solids Content, % | 95.0 - 100.0 | 48.0 - 52.0 | 48.0 - 52.0 |
| pH | 3.8 - 6.0 | 5.0 - 7.0 | 5.0 - 7.0 |
| NVP, ppm | ≤ 50 | ≤ 50 | ≤ 50 |
| Heavy Metals, ppm | ≤ 10 | ≤ 10 | ≤ 10 |
| VAc, ppm | ≤ 50 | ≤ 50 | ≤ 50 |

INCI-Listed Functions:

- Film-Forming
- Hair Fixing
- Viscosity Increasing (non-aqueous)
- Emulsion Stabilizing
- Antistatic



STARPC PVP/VA: Long-Lasting, Humidity-Resistant Performance

STARPC VP/VA copolymers deliver durable, humidity-resistant films ideal for personal care and pharmaceutical products. These copolymers ensure longer-lasting hold in hair styling formulations and offer more robust structural support for emulsions. A key advantage of STARPC VP/VA is its superior resistance to washing, making it a dependable choice for products that need to maintain their performance even in challenging conditions.

This image demonstrates that STARPC VA64P absorbs less moisture compared to STARPC K30P.

In a humid environment, the hair remains flexible and does not stick together.

Regulatory Information

SSP was originally designed to meet the high-quality standards of the Pharmaceutical Industry. SSP maintains a comprehensive and certified Quality Management System. Download QM Certifications and ask for downloads of Data Sheets, Packaging Information and let

us know if you need any additional information. A Pre-Audit Questionnaire and a comprehensive Product Regulatory Information Package (PRI) is also available. In addition, we are happy to arrange a plant audit.

| Certifications | Registrations |
|--|--|
| ISO 9001 - Conformity of Quality Management System | CEP edQm |
| ISO 14001 - Environmental Management System Certificate | Certificate of Drug Master File (US DMF) |
| ISO 45001 - Occupational Health and Safety Management System Certificate | U.S. FDA Registration and U.S. FDA UFI (DUNS) registered |
| ISO 22000 - Food Safety Management System Certificate | Chinese Food Production Licence |
| EXCiPACT GMP (SGS) | Available upon Request: |
| Reach | Pre Audit Questionnaire |
| Kosher | Product Regulatory Information A-Z (PRI) |
| Halal | Technical Data Sheets |
| | Safety Data Sheets |
| | Packaging Statements |
| | Shipping and Packaging Guides |

Currently, PVP (polyvinylpyrrolidone) and VP/VA (polyvinylpyrrolidone/vinyl acetate copolymer) are not classified as microplastics in personal care formulations. Both substances are water-soluble or dispersible polymers that do not exist as solid, insoluble particles in products. As such, they do not meet the regulatory definitions of microplastics established by authorities like the European Chemicals Agency (ECHA).

Further regulatory information can be found at <https://pvp-chem-agency.com/ra-qm> or by scanning the QR code.



Link to Regulatory Information

The Contact Page can be found at <https://pvp-chem-agency.com/contact> or by scanning the QR code.



Link to Contact Page

Star-Tech & JRS Specialty Products Co.,Ltd. (SSP)

Sino-German Joint-Venture, Chongqing, China

SSP is a Sino-German Joint Venture dedicated to producing top-tier Povidones (PVPs) under audited and certified GMP and HACCP conditions. Situated in the National Economic and Technological Development Zone of Chongqing, China, SSP benefits from excellent infrastructure and an efficient, sustainable production environment, allowing for the cost-effective production of outstanding PVP quality.

Currently, SSP's high-quality Povidones are trusted by leading multinational companies in the pharmaceutical and medical sectors, serving as essential components in tablet formulations and as pore-regulating aids in dialysis membranes. Looking forward, SSP is committed to broadening its reach into the global Home- and Personal Care markets.

We are proud that renowned global companies already rely on our STARPC PVP and VP/VA products, enhancing the security and reliability of their supply chain.

SSP 斯泰克



SSP Headquarters in Chongqing, China

SSP's strengths include production excellence, cost-effectiveness, outstanding regulatory documentation, and exceptional customer service, including direct customer management for key accounts.

Website: chinassp.net/en/

| Facts and Figures of SSP | |
|--------------------------|---|
| Origin of SSP | 2012 |
| HQ and Production | Chongqing, China |
| JV Founded in 2016 | Sino-German Joint Venture with the family owned JRS Group |
| Specialty | Premier PVP product lines, PVP-K, PVPP, PVP/VA, PVP-I |
| Capacity | 5,000 metric tons annually |
| Certifications | ISO 9001, ISO 14001, ISO 45001, ISO 22000, EXCiPACT GMP (SGS), US DMF, CEP edQm, Kosher, Halal, U.S. FDA and U.S. FDA UFI (DUNS) registered |
| Applications | Pharmaceuticals, Medical Care, Filtration, Home and Personal Care, Adhesives ... |
| Current Core Market | 95% Health Care Industry |
| Presence | Worldwide |
| Export Rate | 65 % |



Aerial View of SSP



Link to SSP



25 kg Fiber Drum with Double LDPE Liner

1000 L IBC

Packaging

| Packaging Kind: | Round Shaped Drum | | |
|----------------------|----------------------|----------------------------|--------------|
| | STARPC K30P and K90P | | STARPC VA64P |
| Product | Single Stack | Double Stack* | Single Stack |
| kg/Single Drum | 25 | 25 | 20 |
| No Drums/Pallet | 27 | 18 | 27 |
| kg/Pallet | 675 | 2 x 450 = 900 | 540 |
| Pallets/20 ft. Cont. | 10 | 10 | 10 |
| Weight/20 ft. Cont. | 6.750 | 9.000 | 5.400 |
| Pallets/40 ft. Cont. | 20 | 20 Double Stacks | 20 |
| Weight/40 ft. Cont. | 13.500 | 18.000 High Cube | 10.800 |

* Best option for complete container lots

There is no irradiation associated with the manufacture, packaging, or storage of STARPC PVP and VP/VA products including the raw materials and the packaging materials.

Re-evaluation recommended after 36 months.

You can find the Shipping & Packaging Guide at <https://pvp-chem-agency.com/ra-qm>

| Packaging Kind: | IBC Container |
|----------------------|------------------|
| Product | All S-Grades |
| | Double Stack |
| Ltr. | 1.000 |
| Pallet | NA |
| 20 ft. Cont. | 10 double stacks |
| Weight/20 ft. Cont. | 20.000 |
| Pallets/40 ft. Cont. | NA Overweight |

Special packaging is available upon request.

Order Your Free of Charge Sample Now!

<https://pvp-chem-agency.com/products/sample-request-form>



STARPC Powder Grades

STARPC Solution Grades

Standard Sample Sizes



Aluminum Bags 100g resp. 200g



PE Container 100 mL, 200 mL and max. 1 L

Next Larger Purchase Units



Fiber Drums with 20 kg or 25 kg Depending on the Grade.



1000 L IBC Container.

Your Contact:

Manufacturer:

SSP 斯泰克

Star-Tech & JRS Specialty Products Co., Ltd.

No.1, Huanan Road
Changshou District
Chongqing 401221
China

<https://chinassp.net/en/>

SSP Global Agent (excluding China):



PVP CHEM AGENCY INTERNATIONAL GmbH

Managing Director: Yvonne M. Johnson
Ahornweg 1
73494 Rosenberg
Germany

<https://pvp-chem-agency.com/>

Distributor in Your Region:



*SSP Production Site,
Chongqing, China*

Disclaimer:

SSP recommends that customers independently test and evaluate their products and processes to determine the effectiveness of SSP products in their specific applications.