

Technical Information

Luviskol® K 30 Powder

PRD 30035086

Valid since 03.08.2018
Revision 2.0

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® = registered trademark of BASF in many countries ™ = Trademark of BASF

Care Chemicals**Polyvinylpyrrolidone for use in cosmetic applications****INCI name(s)**

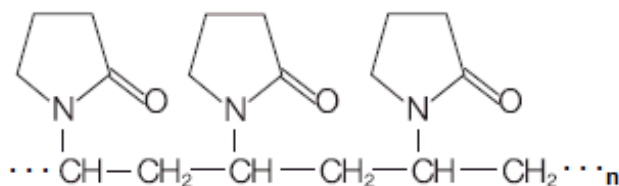
PVP

Chemical description

Homopolymer of vinylpyrrolidone

Physical form:

White Powder

Structural Formula

Monomer unit molar mass

111.14 g/mol

MW polymer (BASF method, GPC) about 45000 (+/- 5000) g/mol

CASR-No.	Ingredient
9003-39-8	Polyvinylpyrrolidone

Characteristic values

The specifications stated in the paragraphs 'Quality control data' and 'Additional product descriptive data' finally and conclusively describe the properties of the product.

Quality control data

(Data which is used for quality release and is certified for each batch.)

Test property	Specification
k-value (1 % (m/V) in water)	27.0 - 33.0
Solids (60 min.; 140 °C; vacuum)	95.0 - 100.0 %
pH value (10 % in water)	3.0 - 7.0
Vinylpyrrolidone (HPLC)	max. 100 ppm
Color, Hazen (3.5 % in water)	max. 40 APHA units

Specific methods used for batch release see Certificate of Analysis.



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Care Chemicals

Storage information

Shelf life
36 months

Storage temperature
Between + 10 °C and + 25 °C

Storage conditions
In original sealed containers and protected from moisture

Stabilising additives / Auxiliaries

Preservatives
not present

Antioxidants
not present

Solvents
not present

Others
not present

General information

Raw material basis
Synthetic: (mineral oil/natural gas)

Composition hints for finished product label

INCI Components

INCI Name (US/EU/CN)	Content
PVP	95 - 100 %

Water Content	Content
	0 - 5 %

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Care Chemicals**Product properties****Solubility**

Water:	yes
Ethanol:	yes
Isopropanol:	yes

Miscellaneous information**Applications**

Hair styling is the main application for the Luviskol® K grades. In hair gels, particularly wetlook gels, hair mousses, pump sprays, and liquid hair setting preparations they provide normal to strong hold. Luviskol® K 30 Powder can be used when manufacturing hair care products such as styling gels or solutions.

The Luviskol® K grades are used in cosmetics for various applications. They are mainly used as film formers, but also as thickeners.

Luviskol® K grades can also be used as thickening agents, emulsifiers, lubricants, and binders. They are particularly suitable for addition to cosmetic products that cleanse, dye or otherwise enhance the appearance of the skin or hair. Luviskol® K 30 Super P acts as a stiffening agent in hair setting preparations and improves the consistency of shampoos, hair dyes and similar preparations.

In contrast to anionic colloids, the Luviskol® K grades can be combined with cationic substances, e.g. disinfectants or basic dyes, though it must be taken into account that Luviskol® K 30 Powder tends to bind dyes. The Luviskol® K products are nonionic vinylpyrrolidone homopolymers of different molecular weight. The molecular weight determines the setting properties of PVP polymers; the higher the molecular weight, the greater the setting.

The Luviskol® K products are readily soluble in water and are compatible with almost all anionic, cationic, and other non-ionic cosmetic polymers. They are compatible with Carbomer-type thickeners and other crosslinked polyacrylates for gel-type applications. Luviskol® K grades are ideal for use in water-based applications where a high degree of clarity is required in the finished products (e.g. gels).

Example of use

Styling polymer and thickener for hair gels, hair creams, mousses, pump sprays, liquid hair setting preparations.

The Luviskol® K products are not intended for use in pharmaceutical preparations.



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Care Chemicals

Intended for use as cosmetic ingredient

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Technical Information

August 2004
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Luviskol[®] K Grades

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Polyvinylpyrrolidone for use in cosmetic applications

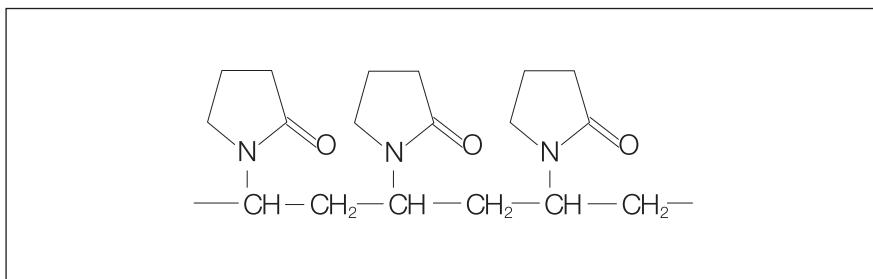
cosmetic
SOLUTIONS

- Hair Care
- Skin Care
- Oral Care

 **BASF**
The Chemical Company

Chemical description

Homopolymers of vinylpyrrolidone

Structural formula**Monomer unit molar mass**

111.14 g/mol

INCI name

Polyvinylpyrrolidone (PVP)

CAS-No.

9003-39-8

Range

Luviskol® K 17 powder

Luviskol® K 30 solution approx. 30%

Luviskol® K 30 powder

Luviskol® K 80 powder

Luviskol® K 85 CQ solution approx. 20%^{a)}

Luviskol® K 90 solution approx. 20%

Luviskol® K 90 powder

^{a)}The solution is preserved with Polyaminopropylbiguanide**Physicochemical properties****Appearance**

The aqueous solutions are clear and colorless to slightly yellowish. The powder products are white.

Odor

Slight, characteristic

Solubility

Soluble in water, ethanol, and isopropanol.

Specifications

	K value (1% in water⁰)	Solids content (%)	Viscosity Brookfield RVT (mPas)	pH of the 10% strength water solution	Content of NVP (%)
Method	02/0086.00	02/0087.01	02/0088.00	02/0089.00	02/0090.00
Luviskol® K 17 powder	15.0-19.0	95.0-100.0	-	3.0-7.0	≤ 0.01
Luviskol® K 30 powder	27.0-33.0	95.0-100.0	-	3.0-7.0	≤ 0.01
Luviskol® K 30 solution (ca. 30%)	27.0-33.0	29.0-31.0	-	7.0-9.0	≤ 0.01
Luviskol® K 80 powder	74.0-82.0	95.0-100.0	2,500-7,000 ¹	5.0-8.0	≤ 0.01
Luviskol® K 85 CQ solution (ca. 20%)	83.0-88.0	19.0-21.0	5,000-15,000 ²	7.0-9.0	≤ 0.01
Luviskol® K 90 powder	88.0-96.0	95.0-100.0	10,000-30,000 ³	5.0-9.0	≤ 0.01
Luviskol® K 90 solution (ca. 20%)	90.0-98.0	19.0-21.0	10,000-40,000 ⁴	7.0-9.0	≤ 0.01

⁰ The K value of Luviskol® K 17 powder is determined in 5% aqueous solution

¹ Spindle 6/100 rpm/23°C, 20% aqueous solution

² Spindle 6/50 rpm/23°C, telquel (ca. 20% aqueous solution)

³ Spindle 7/100 rpm/23°C, 20% aqueous solution

⁴ Spindle 7/100 rpm/23°C, telquel (ca. 20% aqueous solution)

Applications and technical properties

The Luviskol® K grades are used in cosmetics for various applications. They are mainly used as film formers, but also as thickeners.

The Luviskol® K products are nonionic vinylpyrrolidone homopolymers of different molecular weight. The molecular weight determines the setting properties of PVP polymers; the higher the molecular weight, the greater the setting.

The Luviskol® K products are readily soluble in water and are compatible with almost all anionic, cationic, and other non-ionic cosmetic polymers. They are compatible with Carbomer-type thickeners and other crosslinked polyacrylates for gel-type applications. Luviskol® K grades are ideal for use in water-based applications where a high degree of clarity is required in the finished products (e.g. gels).

Hair styling is the main application for the Luviskol® K grades. In hair gels, particularly wetlook gels, hair mousses, pump sprays, and liquid hair setting preparations they provide normal to strong hold. Luviskol® K 30 Powder can be used when manufacturing hair care products such as styling gels or solutions. Besides the use in hair gel formulations, Luviskol® K 30 can be used in pump sprays with normal hold, when low viscosity is important. Luviskol® K 80 and K 90 are for products with a strong hold and high viscosity, e.g. hair gels and hair mousses.

Luviskol® K grades can also be used as thickening agents, emulsifiers, lubricants, and binders. They are particularly suitable for addition to cosmetic products that cleanse, dye or otherwise enhance the appearance of the skin or hair. Luviskol® K 30 Powder and Luviskol® K 90 Powder can be used in the formulation of certain creams, both with an oil base and with an oil-free base. Luviskol® K 30 acts as a stiffening agent in hair setting preparations and improves the consistency of shampoos, hair dyes and similar preparations. In contrast to anionic colloids, the Luviskol® K grades can be combined with cationic substances, e.g. disinfectants or basic dyes, though it must be taken into account that Luviskol® K 30 Powder tends to bind dyes.

Recommended Formulations**04/00105 – “Hair Gel - Superstyle & Ultra Strong”**

	%	Ingredient	Supplier	INCI
A	0.60	Carbopol 940	6	Carbomer
	59.40	Water dem.		Aqua dem.
B	0.48	AMP	56	Aminomethyl Propanol
C	10.00	Luviskol® K 90 Solution	1	PVP
	8.00	Luviskol® VA 64 W	1	VP/VA Copolymer
	5.00	Karion F flüssig	20	Sorbitol
	0.10	Edeta BD	1	Disodium EDTA
	q.s.	Perfume		
	q.s.	Cremophor CO 40	1	PEG-40 Hydrogenated Castor Oil
	0.05	Uvinul MS 40	1	Benzophenone-4
	q.s.	Preservative		
	10.00	Ethanol 96%		Alcohol
	6.37	Water dem.		Aqua dem.

Production

Allow phase A to swell and neutralize with phase B.
Dissolve phase C and stir it into phase A+B.

Properties

Viscosity 30,800 mPas Brookfield RVD VII+
pH value 6.4

04/00095V000 – “Hair Setting Gel with strong hold”

	%	Ingredient	Supplier	INCI
A	0.80	Carbopol 940	6	Carbomer
	39.20	Water dem.		Aqua dem.
B	0.96	Triethanolamine Care	1	Triethanolamine
C	q.s.	Cremophor CO 40	1	PEG-40 Hydrogenated Castor Oil
	q.s.	Perfume		
	55.04	Water dem.		Aqua dem.
D	4.00	Luviskol® K 90	1	PVP
	q.s.	Preservative		

Production

Allow phase A to swell and neutralize with phase B.
Solubilize Phase C.
Weigh Phase D into Phase C and dissolve clearly.
Stir Phase C+D into Phase A+B.

Properties

Viscosity 25,000 mPas Haake Viscotester VT-02
pH value 6.5

04/00074 KXDE – “Hair Setting Gel with normal hold“

	%	Ingredient	Supplier	INCI
A	0.50	Carbopol 940	6	Carbomer
	40.00	Water dem.		Aqua dem.
B	0.60	Triethanolamine Care	1	Triethanolamine
C	15.00	Ethanol 96%		Alcohol
	q.s.	Perfume		
	37.90	Water dem.		Aqua dem.
	6.00	Luviskol® K 30	1	PVP
	q.s.	Cremophor CO 40	1	PEG-40 Hydrogenated Castor Oil

Production

Allow phase A to swell and neutralize with phase B.
Dissolve phase C and stir it into phase A+B.

Properties

Viscosity 7,000 mPas Haake Viscotester VT-02
pH value 6.5

04/00116 Wet Look Gel

Phase	%	Ingredient	INCI	Supplier
A	48.75	Water	Aqua dem.	
	q.s.	Preservative		
B	0.50	Ultrez® 21	Acrylates/C10-30 alkyl acrylate crosspolymer	Noveon
C	0.75	Triethanolamine Care	Triethanolamine	BASF
D	10.00	Luviset® Clear	VP/Methacrylamide/ Vinyl Imidazole Copolymer	BASF
	36.50	Water	Aqua dem.	
	2.00	Glycerol 87%	Glycerin	BASF
	1.00	Luviskol® K 30	PVP	BASF
	0.20	D-Panthenol USP	Panthenol	BASF
	q.s.	Perfume		
	0.10	Cremophor® CO 40	PEG-40 Hydrogenated Castor Oil	BASF
	0.10	SF® 1288	Dimethicone Copolyol	GE Silicones
	0.10	Uvinul® P25	PEG-25 PABA	BASF

Procedure

Put phase A into a beaker, stir and disperse phase B into it until the particles sink to the bottom. Then add phase C and stir until a homogeneous gel has been formed. Prepare phase D and stir until dissolved. Then add phase D to the gel.

pH value: 6.9 Viscosity (Brookfield): 47600 mPas Transmission: 97.5% (600nm)

03/00113V000 – “Hair Gum”

	%	Ingredient	Supplier	INCI
A	0.50	Glucamate SSE-20	3	PEG-20 Methyl Glucose
	q.s.	Cremophor CO 40	1	PEG-40 Hydrogenated Castor Oil
	q.s.	Perfume		
	30.00	Water dem.		Aqua dem.
B	10.00	Luviquat Hold	1	Polyquaternium-46
	2.00	Luviskol® K 90	1	PVP
	0.30	Germall 115	9	Imidazolidinyl Urea
	0.10	Euxyl K 100	42	Benzyl Alcohol, Methyl-chloroisothiazolinone Methyl-isothiazone
	0.50	D-Panthenol USP	1	Panthenol
	5.00	Pluracare E 6005	1	PEG 90
	3.00	1,2 Propylene Glycol Care	1	Propylene Glycol
	46.10	Water dem.		Aqua dem.
C	2.50	Natrosol 250 HR	4	Hydroxyethyl-cellulose

Production

Solubilize the components of phase A.

Dissolve phase B and stir it into phase A.

Stir phase C into the solution of the combined phases A and B.

Properties

Viscosity 48,000 mPas Brookfield RVD VII+

pH value 6.0

03/00094 V000 – “Hair Setting Cream”

	%	Ingredient	Supplier	INCI
A	5.00	Cetyl Alcohol	27	Cetyl Alcohol
	10.00	Tegin	44	Glycerol Stearate SE
	5.00	Isopropyl Myristate	27	Isopropyl Myristate
	q.s.	Preservative		
	1.00	Dow Corning 200 fluid	16	Dimethicone
B	5.00	Glycerin 87%	20	Glycerin
	0.20	Edeta BD	1	Disodium EDTA
	2.00	Luviskol® K 30	1	PVP
	71.80	Water dem.		Aqua dem.
C	q.s.	Perfume		

Production

Heat phases A and B separately to about 80°C.

Stir phase B into phase A and homogenize.

Cool to about 40°C, add phase C and homogenize again.

Properties

Viscosity 24,000 mPas Brookfield RVD VII+

pH value 6.3

02/00062DE – “Setting Lotion”

	%	Ingredient	Supplier	INCI
	5.00	Luviskol® K 30	1	PVP
	1.00	Luviquat Style	1	Polyquaternium-16
	0.10	D-Panthenol USP	1	Panthenol
	0.10	Perfume		
	35.00	Ethanol		Alcohol
	58.80	Water dem.		Aqua dem.

Production

Mix all the components.

02/00272DE – “Setting Conditioner Mousse”

	%	Ingredient	Supplier	INCI
	8.00	Luviquat Style	1	Polyquaternium-16
	2.00	Luviskol® K 90	1	PVP
	2.00	Luviskol® VA 64	1	VP/VA Copolymer
	0.50	Luviquat® Mono CP	1	Hydroxyethyl Cetyldimonium Phosphate
	0.50	Cremophor® A 25	1	Cetareth-25
	q.s.	Perfume		
	q.s.	Cremophor® CO 40	1	PEG-40 Hydrogenated Castor Oil
	2.00	n-Pentane		Pentane
	76.60	Water dem.		Aqua dem.
	8.00	Propane/Butane		Propane/Butane
	q.s.	Preservative		

Production

Combine all ingredients together, the mixture is stirred until clear.

02/00141DE – “Blow Drying Lotion”

	%	Ingredient	Supplier	INCI
A	q.s.	Perfume		
	q.s.	Cremophor CO 40	1	PEG-40 Hydrogenated Castor Oil
	68.30	Water dem.		Aqua dem.
B	1.50	Luviskol® K 30	1	PVP
	0.20	Luviquat Excellence	1	Polyquaternium-16
	30.00	Ethanol	1	Alcohol

Production

Solubilize the components of phase A. Weigh phase B into phase A and stir until clear and homogeneous.

67/00013NDE – Mascara*

	%	Ingredient	Supplier	INCI
A	14.00	Water dem.		Aqua dem.
	q.s.	Preservative		
	2.50	Pluracare F 127	1	Poloxamer 407
	3.50	Luviskol® K 30	1	PVP
	11.00	Ethanol		Alcohol
	0.70	Triethanolamine Care	1	Triethanolamine
B	0.52	Carbopol 934	6	Carbomer
	57.78	Water dem.		Aqua dem.
C	10.00	Sicovit Black 80 E 172	1	C. I. 77 499, Iron Oxides

Production

Dissolve phase A clearly.

Allow phase B to swell and stir it into phase A.

Add phase C and homogenize.

Properties

Viscosity 30,000 mPas

pH value appr. 7

**Please note: formulation not approved in Japan*

50/000146 V000 “After Sun Mousse“

	%	Ingredient	Supplier	INCI
A	64.30	Water dem.		Aqua dem.
	q.s.	Preservative		
	0.50	Allantoin	20	Allantoin
	1.35	D-Panthenol USP	1	Panthenol
	1.00	Luviskol® K 30	1	PVP
	5.00	1,2 Propylene Glycol Care	1	Propylene Glycol
B	3.00	Cremophor A 6	1	Ceteareth-6, Stearyl Alcohol
	2.00	Cremophor A 25	1	Ceteareth-25
	0.15	Phytantriol	1	Phytantriol
	1.00	Dow Corning 200 fluid	16	Dimethicone
	8.00	Isopropyl Myristate	27	Isopropyl Myristate
	1.00	Cetyl Alcohol	27	Cetyl Alcohol
C	5.00	Ethanol 96%		Alcohol
	7.70	Luviquat Care	1	Polyquaternium-44
D	q.s.	Perfume		

Production

Heat phases A and B separately to about 80°C.

Stir phase B into phase A whilst homogenizing and continue homogenizing for a while. Cool to about 40°C.

Dissolve phase C and stir it into phase A+B.

Add phase D.

Filling: 95% active ingredient

5% Propane/Butane 3.5 bar (20°C)

Properties

Viscosity 3,000 mPas Brookfield RVD VII+

pH value 7.0

Suppliers:

1. **BASF Aktiengesellschaft**
67056 Ludwigshafen, Germany
Tel.: +49 621 60-0
Fax: +49 621 60-42525
3. **Amerchol Corporation**
136 Talmadge Road / P.O. Box 4051
Edison, 08818-451 NJ, USA
Tel.: +1 908 248-6000
Fax: +1 908 287-4186
4. **Aqualon, A Hercules Incorporated Unit**
1313 North Market Street
DE 19899 Wilmington, USA
Tel.: +1 302 594-5000
Fax: +1 302 594-6660

German address:
Aqualon GmbH, Postfach 130125
40551 Düsseldorf, Germany
Tel.: +49 211 797-0
6. **Noveon Inc.**
9911 Brecksville Road
Cleveland OH 44141-3247, USA
Tel.: +1 216 447-5000
9. **Chemag AG**
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60325 Frankfurt/Main, Germany
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16. **Dow Corning Corporation**
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Fax: +49 211 798-4008
42. **Schülke & Mayr GmbH**
Robert-Koch-Str. 2, 22851 Norderstedt, Germany
Tel.: +49 40 52100-0
Fax: +49 40 52100-238
44. **Degussa Care Specialities**
710 South 6th Street, Hopewell VA 23860, USA
Tel.: +1 800 46-1890

Germany address:
Goldschmidtstr. 100, 45127 Essen, Germany
Tel.: +49 201 173-0
56. **Angus Chemical Company**
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Tel.: +1 847 215-8600
Fax: +1 847 215-8626

Remarks**The use of PVP in pharmaceutical preparations**

The Luviskol® K products are not intended for use in pharmaceutical preparations. The range of Kollidon® products (please ask for technical literature) is available especially for such applications. They are manufactured for this purpose and are subject to special quality and purity controls.

Storage/Stability

Luviskol® K 17, K 30, K 80 and K 90 powders have a shelf life of at least three years in the unopened original packaging below 25°C.

Luviskol K 30, K 80, K 85 CQ and K 90 solutions have a shelf life of at least two years in the unopened original packaging below 20°C (preferably at 4°C).

Safety data sheet

A safety data sheet is available.

Note

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August 2004