

NUMBER 4175-6 (Supersedes 4175-5)

Klucel™ hydroxypropylcellulose

Industrial Grade, Summary of Properties and Uses

Description

Klucel hydroxypropylcellulose (HPC) is a nonionic water-soluble cellulose ether with a versatile combination of properties. It combines organic solvent solubility, thermoplasticity, and surface activity with the thickening and stabilizing properties of other water-soluble cellulose polymers.

Key Attributes

- Klucel HPC is soluble in many polar organic solvents and in water below 38°C, but is insoluble in water above 45°C.
- Klucel HPC is highly surface-active, with low surface and interfacial tensions of solutions. It has a wide range of compatibility with latexes and with synthetic and natural colloids.
- Klucel HPC is available in a wide range of viscosities with measurements reported at varying concentrations in water.
- Thermoplastic and can be injection molded and extruded.
- In films and coatings, Klucel HPC is heat-sealable, extremely flexible without plasticizers, and non-tacky at high humidity.

Applications and Usage Notes

Klucel HPC is versatile: it is used in a wide variety of applications including:

- **Coatings-** Film-former, rheology control
- **Adhesives –** Solvent based systems or hot melts
- **Extrusions and moldings-** Thermoplastic resin
- **Paper Coatings-** Film-former, rheology control
- **Paint Removers –** Thickener, retards solvent loss, improves cling on vertical surface
- **Encapsulation –** Stabilizer, wall forming polymer
- **Printing & Inks –** Lithography- alcohol replacement, water & solvent inks- thickener, for both aqueous and non-aqueous systems
- Other applications requiring a film-former, thickener, stabilizer, suspending agent, film barrier, thermoplastic, or protective colloid.

Typical Product Properties

Table I
Viscosity^(a) of Various Solution Types, cps
Concentration in Water, Weight %

Viscosity Type	1	2	5	10
H	1,275 - 3,500	-	-	-
M	-	3,500 - 7,500	-	-
G	-	125 - 450	-	-
J	-	-	125 - 450	-
L	-	-	65 - 175	-
E	-	-	-	250 - 800

^(a)Viscosities determined at 25°C, using a Brookfield LVF viscometer with spindle and speed combinations depending on viscosity level. Ranges shown in this table are not necessarily current specifications.

Table II
Typical Properties
Klucel™ hydroxypropylcellulose, as shipped

Appearance	off-white powder
Particle size, %, min	
Through U.S. 30 mesh.....	80
Through U.S. 20 mesh.....	98
Moisture content, as packed, %, max	5.0
Softening temperature, °C.....	100 - 150
Burnout temperature in N ₂ or O ₂ , °C	450 - 500
Solubility	
In water	clear, smooth solutions below 38°C
In organic solvents	dissolves easily in many polar organic solvents to give clear to hazy solutions.

Klucel hydroxypropylcellulose Solutions in Water

pH, industrial grades	5.0 - 8.5
Surface tension, ^(b) dynes/cm	43.6
Interfacial tension, ^(b) in water vs refined mineral oil, dynes/cm	12.5

^(b)0.1% concentration.

CASRN: 9004-64-2
CAS Name: Cellulose, 2-hydroxypropyl ether

Packaging Information

Product	Physical Form	Pkg Type	Net Wgt (lbs)	Net Wgt (kgs)
Klucel H	Powder	Fiber Drum	100lbs	45.36 kgs
Klucel M	Powder	Fiber Drum	100lbs	45.36 kgs
Klucel G	Powder	Fiber Drum	100lbs	45.36 kgs
Klucel J	Powder	Fiber Drum	100lbs	45.36 kgs
Klucel L	Powder	Fiber Drum	100lbs	45.36 kgs
Klucel E	Powder	Fiber Drum	100lbs	45.36 kgs

X Grade- Fine Grind-- Available for grades upon request
F Grade- Food Grade-- Available for grades upon request

Product Safety Information

Read and understand the Safety Data Sheet (SDS) before using this product.

To learn more, visit ashland.com

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