



Technical Data Sheet

UCARE™ JR-400P Polymer

Conditioning polymer
INCI Name: Polyquaternium-10

Features & Benefits

- Substantive to hair and skin
- Light to medium conditioning
- Minimal build-up, enhanced volume
- Frizz control
- Can be formulated into clear shampoo systems
- Can be formulated into opacified shampoo systems
- Can prevent loss of moisture from the skin
- Can moderate the defatting effects of alkaline surfactant systems

Applications

UCARE™ polymers are used in a diverse number of applications across both hair and skin care. Perhaps the most notable for the UCARE™ JR-400P Polymer is its ability to provide substantive conditioning from shampoo systems.

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Unit	Result
Viscosity, 2% aqueous solution, #2 spindle	cP	300–500
Volatiles	wt%	0–6
Nitrogen	wt%	1.50–2.20
Particle size, through 20 mesh, < 841 micron	%	95–100
Ash	wt%	0–3

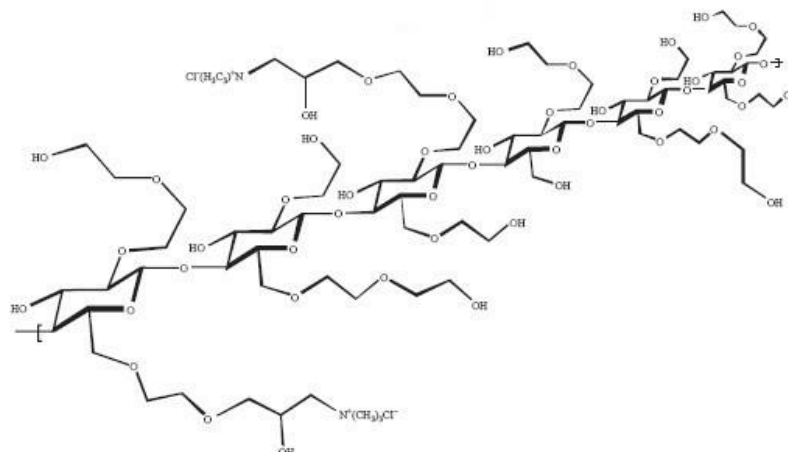
Description

Dow UCARE™ polymers are polymeric, quaternary ammonium salts of hydroxyethylcellulose reacted with trimethyl ammonium substituted epoxide.

The UCARE™ polymers are generally grouped into three categories. The LK grade has the lowest level of % Nitrogen (0.4–0.6), followed by the LR grade (0.8–1.1), and finally the JR grade (1.5–2.2). Increasing the amount of nitrogen substitution provides more substantive bonding to the hair surface and a smoother film microtexture.

Description (Cont.)

The Idealized Structure of UCARE Polymers



Recommended Use Level

Recommended Applications

Shampoos, body washes, creams and lotions, hair styling products

0.2–0.5 wt%

Methods of Addition

There are two basic methods for preparing UCARE™ Polymers for incorporation into your formulation.

Prior Polymer Hydration

- Hydration of the polymer is accomplished by slowly adding the dry powder into agitated room temperature water and allowing it to mix until the solution is uniform and clear.
- Hydration can be accelerated by heating the solution to 65°C.
- Once the polymer is fully hydrated, simply add the solution directly to the surfactant system blend with mixing.
- Hydration may be accomplished separately or as a first step in the manufacturing procedure.

Addition with Co-Solvents

- A slurry of the dry powder may be made in a non-aqueous, water soluble, co-solvent (such as propylene glycol, glycerin, low molecular weight CARBOWAX™, or Methyl Gluceth-10 or -20).
- The slurry can then be mixed into the water or directly into the surfactant blend.
- Hydration can be accelerated by heating the solution to 65°C.
- The co-solvent "wets" the polymer and allows it to be more easily dispersed, thus increasing the rate of hydration whether it is in the water or directly put into the surfactant blend.

Usable Life and Storage

Store in a dry place. Protect from atmospheric moisture. Avoid prolonged exposure to heat and air.

UNRESTRICTED – May be shared with anyone

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UCARE™ JR-400P Polymer

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This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

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