



Technical Data Sheet

UCARE™ JR-30M Polymer

Conditioning Polymer

INCI Name: Polyquaternium-10

Features & Benefits

- Substantive to hair and skin
- Medium to strong conditioning
- Enables deposition of silicone
- Minimal build-up on hair, volume friendly
- Hair repair
- Split end mending from anionic and amphoteric shampoo systems
- Can be formulated into clear shampoo systems
- Can be formulated into opacified shampoo 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-30M 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, 1% Aqueous Solution	cP	1250–2250
Volatiles	Wt%	0–6
Nitrogen	Wt%	1.50–2.20
Particle Size, through 20 Mesh, < 841 micron	%	95–100
Ash	Wt%	0–3

Description

UCARE™ polymers are polymeric, quaternary ammonium salts of hydroxyethylcellulose reacted with trimethyl ammonium substituted epoxide. The cellulosic backbone is derived from natural, renewable resources.

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.)

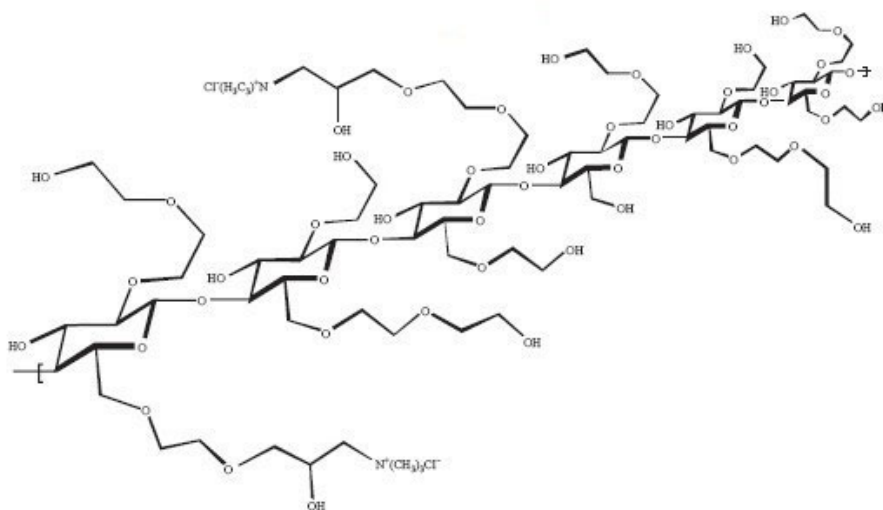


Figure 1: The Idealized Structure of UCARE Polymers

Recommended Use Level

Recommended Applications

Shampoo Systems, body wash, 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.

I. 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.

II. 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™ Polyethylene Glycols, 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.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life and Storage

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

Limitations

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

Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

