



Cationic Reagent (QUAT-188)

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Product Category	<ul style="list-style-type: none"> Cationic Reagent for Starch Modification
Application	<ul style="list-style-type: none"> Impart starch to become cationic charge
Key Function(s)	<ul style="list-style-type: none"> Cationic by nature to attract negative charge in pulp Improve wetting and bonding in paper manufacturing

Cationic Reagent (QUAT-188), a cationic Monomer

Cationic Reagent or QUAT-188 is the general term that people in starch modification field coin for N-(3-chloro-2-hydroxypropyl) trimethylammonium chloride. It is cationic ammonium compound or CAC which is mainly used for industrial applications. The key application by this technical paper is to modify the starch to become cationic starch.

It is an effective cationic monomer used to modify natural and synthetic polymers to produce quaternary ammonium compounds with a broad array of end uses.

The reaction of Quat 188 with select natural and synthetic polymers results in cationically charged polymers. The addition of the quaternary ammonium group on the product results in increased polarity, hygroscopicity and affinity for anionic materials. It is this interaction between the positively charged nitrogen and the many negatively charged materials that makes Quat 188 modified products suitable as dry strength additives for paper, retention aids, flocculants, electroconductive resins, antistatic agents, fabric softeners, asphalt emulsifiers, emollients, and in various surfactant applications.



Introducing Quat 188 into polymeric systems imparts three important characteristics:

- Increase cationic polarity**
Cationic groups improve adhesion to polar substrates.
- Increased affinity for anionic materials**
Polymers modified with Quat 188 have pendant cationic groups and will associate with materials containing negative counter ions, such as carboxyl, sulfonate, and many other negatively charged substrates.

For more information of product



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3. Increase hygroscopicity

Polymers with cationic groups display increased water solubility as a result of the highly water soluble quaternary ammonium group. Polymers generally not soluble in water can thus be given some degree of water solubility.

The main benefits of cationic starch would be:

- **Improved Retention:** The positive charge of cationic starch helps retain more fines, fillers, and fibers in the papermaking process, improving paper quality and reducing waste.
- **Enhanced Paper Strength:** Cationic starch can increase both dry and wet strength of paper, making it more durable and less likely to tear or burst.
- **Water Resistance:** Cationic starches help improve the water resistance of paper products, making them suitable for packaging or tissue products.
- **Better Bonding:** The cationic nature of the modified starch allows for better bonding between the starch and the cellulose fibers, leading to stronger paper products.



In conclusion, cationic reagents used to modify starch play a significant role in enhancing the performance of starch in various applications, particularly in papermaking, where the cationic starch after getting modified can improve retention, strength, and water resistance. And modified cationic starch is not used alone, it will be in combination with other paper chemicals such as alum, cationic rosin sizing, retention aids, and pH adjusters.

Though Stellar Unity has been with the industry for considerably few years, it has nonetheless connected with a large Chinese manufacturer for Paper Chemicals. Therefore, it can manage the supply and minimize unnecessary cost to paper mills. The quality system of our cationic reagent is controlled through a large scale manufacturing process to balance between performance in use and cost in operation for modified starch companies. The product is non-dangerous goods, by conventional transportation. The packing option in a flexible container is also possible to trim down excess and unnecessary durable packing cost.

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