



Oral Care

Excipients for toothpastes, denture care products, mouth rinses, and whitening applications

In today's world, oral hygiene is increasingly being linked to overall health, resulting in the oral care market garnering significant attention.

The Health business of Lubrizol Life Science (LLS Health) manufactures high performance **Carbopol® polymer and Noveon® polycarbophil excipients** that have been used extensively in oral care applications for decades. Initially used in aqueous toothpaste formulations as a thickener and co-binder, Carbopol polymers are now preferred thickeners for anhydrous toothpaste formulations. They are also used in a variety of other toothpastes, mouth rinses, and denture adhesive products, including those with natural ingredients, whitening capabilities, and long-acting or retention properties. Lubrizol additionally manufactures tetraacetylenediamine (TAED) as a bleach activator for denture cleaners to prevent bacterial build-up.

Product Trade Name	Aqueous Toothpaste	Anhydrous Toothpaste	Mucoadhesive Applications	Denture Fixative	Denture Cleaner
Carbopol® 971P NF polymers	•	•	•	•	–
Carbopol® 974P NF polymers	•	•	•	•	–
Carbopol® ETD 2020 NF polymers	•	–	•	–	–
Carbopol® 980 NF polymers	•	–	•	–	–
Carbopol® 956 polymers	•	–	•	–	–
Noveon® AA1 Polycarbophil USP	–	–	•	–	–
TAED	–	–	–	–	•

Enabling innovation through our multifunctional excipients, which are:

- Highly efficient **thickeners, co-binders** in combination with cellulosic polymers, and/or binders, enabling excellent formulation characteristics at low usage levels.
- The preferred thickener for **anhydrous** compositions
- Excellent **mucoadhesive** polymers, which protect and lubricate the mucosa as well as allow for prolonged active and flavor retention.
- Ideal for enabling formulations that exhibit **reduced stringiness**, a significant advantage when using high-speed tube-filling machines.
- Optimal for providing **enhanced aesthetics**, such as toothpaste ribbon stand-up and high clarity gels
- **Compliant with global pharmacopeial and regulatory requirements** and possess a long history of product quality, safety, reproducibility, and supply chain security.

Oral Care Applications - All polymers listed in the chart below are pharmaceutical-grade and suitable for use in oral care applications and are present in commercialized oral hygiene products.

Product Trade Name	Polymerization Solvent	United States (USP/NF)	Europe (Ph. Eur.) / India (IP)	Japan (JPE) ¹	China (Ch.P.)
Carbopol® 971P NF polymers	Ethyl Acetate	Carbomer Homopolymer Type A	Carbomers	Carboxyvinyl Polymer	Carbomer Homopolymer
Carbopol® 974P NF polymers	Ethyl Acetate	Carbomer Homopolymer Type C	Carbomers	Carboxyvinyl Polymer	Carbomer Homopolymer
Carbopol® ETD 2020 NF polymers	Cosolvent ²	Carbomer Interpolymer Type B	–	–	–
Carbopol® 980 NF polymers	Cosolvent ²	Carbomer Homopolymer Type C	Carbomers	Carboxyvinyl Polymer	Carbomer Homopolymer
Noveon® AA1 Polycarbophil USP	Ethyl Acetate	Polycarbophil	–	–	–

¹Based on customer request, Lubrizol certifies select lots of product against the JPE Carboxyvinyl Polymer Monograph.

²Cosolvent = mixture of Ethylacetate (class III solvent) and Cyclohexane (class II solvent).

Formulating with confidence:

Our Excipients:

- Are manufactured under GMPs in ISO:9001 certified facilities
- Have established DMFs
- Have been extensively tested for safety

Partnering for all Development Phases:

- Worldwide technical and application support services
- Dedicated global regulatory staff and quality assurance
- Sustainable supplier owned by Berkshire Hathaway
- Decades of manufacturing and polymer expertise

Driven by Consumers:

- Improving patient lives by providing a full excipient portfolio for nearly all dosage forms
- Advancing medical innovation by progressing partner products quickly to market
- Proactively responding to ever-changing regulatory and market needs

