Leepol® Carbomer

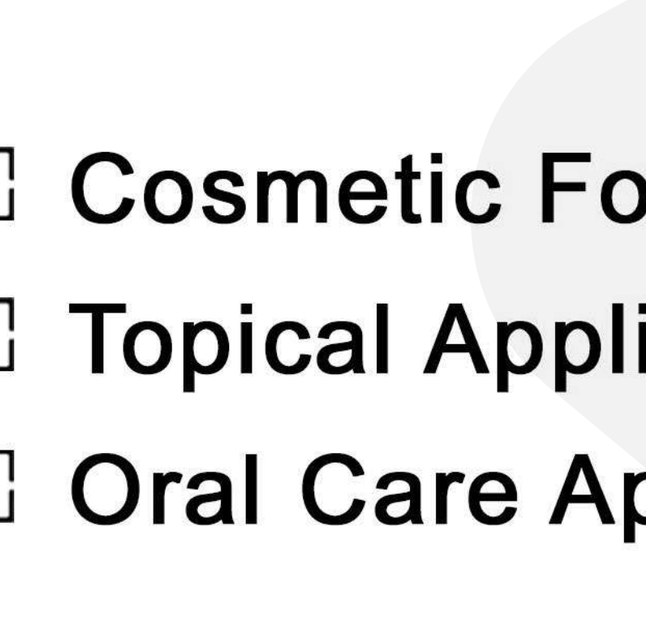
Acrylate Co-polymer

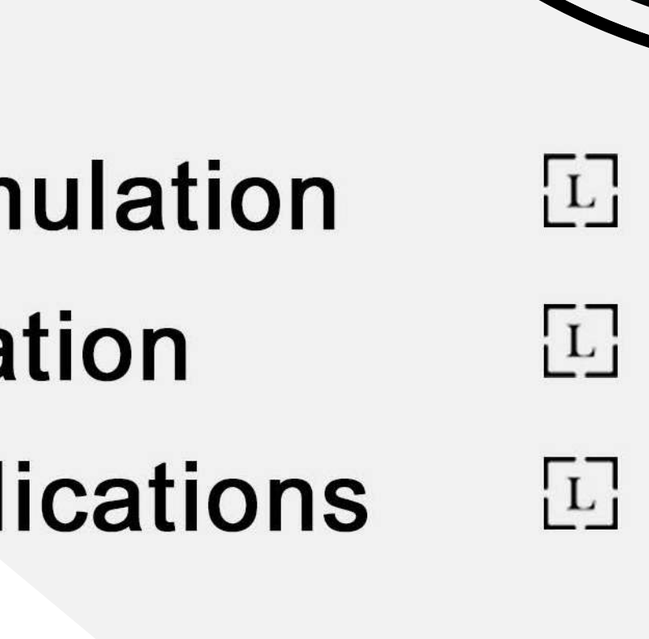
Polyacrylic Acid

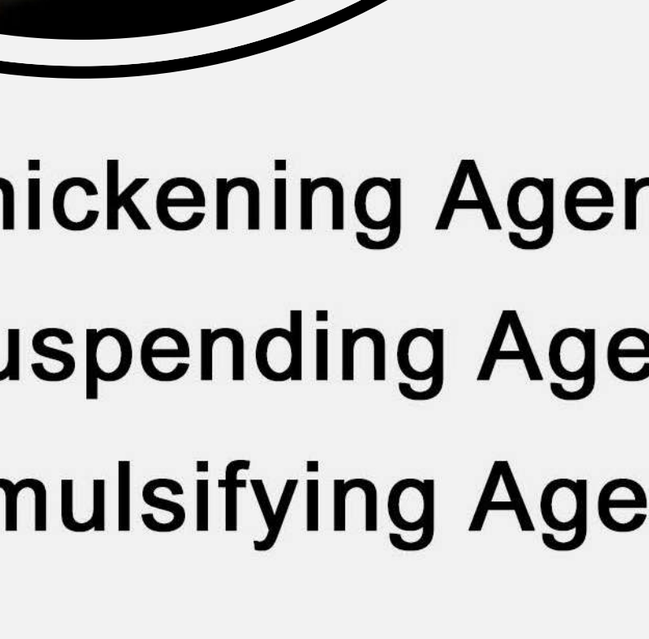
Acumer

Sokalan

- Cosmetic Formulation
- Topical Application
- Oral Care Applications
- Thickening Agent
- Suspending Agent
- Emulsifying Agent







Leepol® range is a synthetic high molecular weight cross-linked water-soluble polymer of acrylic acid, which is known as "Carbomer". It is widely used in cosmetic, pharmaceutical and household industries. It is available in powder and liquid form, which is soluble in water, alcohols and glycols. Before neutralization, pH of Leepol™ grade solution lies between 2.5 and 3.0

General Application

Thickening	- To produce wide range of viscosities and flow properties
Suspending	- To suspend insoluble matters like cosmetic beads and mica pearls
Emulsifying	- To provide emulsification of high content of oils and waxes
Stabilizing	- To provide stability to the emulsion based products

Grades

Traditional	Leepol® 940, Leepol® 934, Leepol® 941, Leepol® 956, Leepol® 996
Benzene free	Leepol® 980, Leepol® 974, Leepol® 971, Leepol® 990, Leepol® ET-1, Leepol® TR-1, Leepol® TR-2
Pharmaceutical for oral use Sustained release	Leepol® 934P, Leepol® 974P, Leepol® 971P
High surfactant system	Leepol® 971P, Leepol® 934P
Polymeric emulsifier	Leepol® ET-1, Leepol® TR-1, Leepol® TR-2, Leepol® U-10, Leepol® U-20, Leepol® U-21

Viscosity

Product	(%) Solution (at pH 7.3-7.8)	Minimum Viscosity* (cps)	Maximum Viscosity* (cps)	Spindle no.
Leepol® 940/980	0.5	40,000	60,000	7
Leepol® 934/974	0.5	30,500	39,000	6
Leepol® 934P/974P	0.5	29,400	39,400	6
Leepol® 941/971	0.5	4,000	11,000	5

*viscosity of neutralized solutions is to be measured at 25°C and 20 rpm.

Leepol® 940 | 980 (USP/NF Compendial Name :- Carbomer Homopolymer Type C)

It is very efficient rheology modifier, which provides high viscosity and forms sparkling clear water or hydro alcoholic gels. It is a very efficient thickener among all the grades, having an extremely short flow property. It is suitable for use in high viscous liquids or gels for cosmetic and pharmaceutical industries. It confirms to USP/NF specification. Leepol 980 is benzene-free grade of Leepol® 940.

Applications

Hair styling gels | Hydro-alcoholic gels | Moisturizing gels | Diclofenac diethylamine gels | Bath gels | Tooth pastes | Shampoos | Aloe vera gels | Shaving gels | Sunscreen lotions | Azithromycin gels

Leepol® 934 | 974 (USP/NF Compendial Name :- Carbomer Homopolymer Type C)

It offers excellent stability at medium and high viscosity. It produces thick formulations for opaque gels, emulsions,creams and suspensions. It is extensively used in the pharmaceutical topical formulations (ointment) and cosmetic creams. It confirms to USP/NF specification. Leepol® 974 is benzene-free grade of Leepol® 934.

Applications

Creams | Hand, face and body lotions | Moisturizing gels

Leepol® 934P | 974P (USP/NF Compendial Name :- Carbomer Homopolymer Type B)

It is a high purity grade, which confirms to USP/NF specification. It is specially used in oral care formulations of pharmaceutical industries. It is used as a thickening, suspending and emulsifying agent. It can be used in liquid or semisolid oral dosage forms. It is used in sustained release formulation as a binding agent in pharmaceutical formulation. Leepol® 974P is benzene-free grade of Leepol® 934P.

Applications

Sustained release formulations | Opthalmic gel and eye lotions | Tooth paste | Taste-masking | Skin drug | delivery | Suspensions and emulsions

Leepol® 941 | 971 (USP/NF Compendial Name :- Carbomer 941)

It gives permanent emulsions and suspensions at low viscosity, even with ionic systems. It is more efficient at low concentration compared to other grades with excellent clarity. It is used in cosmetic formulations as a emulsifier & stabilizer. It confirms to USP/NF specification. Leepol® 971 is benzene-free grade of Leepol® 941.

Applications

Lotions | Hydro-alcoholic gels | Clear gels

Leepol® 971P (USP/NF Compendial Name :- Carbomer Homopolymer Type A)

It is a high purity grade, which is specially used in oral care formulations of pharmaceutical industries.It confirms to USP/NF specification.

Applications

Sustained release formulations | Oral solid dosage forms

Leepol® 956 (USP/NF Compendial Name :- Carbomer Homopolymer Type C)

It is a carbomer with medium viscosity and long flow properties. It is mainly used for thickening of high clarity hydro-alcoholic preparation.

Applications

Hand sanitizers | High clarity gels

Leepol® 996 (USP/NF Compendial Name :- Carbomer Homopolymer Type C)

It provides the higher viscosity with good clarity compared to Leepol 940 or Leepol 980 in aqueous and hydroalcoholic based system. It has extremely low short flow properties.

Applications

Creams | Hydroalcoholic gels | Exfoliating scrubs

Leepol® TR - 1 (USP/NF Compendial Name :- Carbomer Co-polymer Type B)

It is a polymeric emulsifier of cross linked copolymers of acrylic acid. It is used as stabilizers of oil in water systems, with up to 20% oil loading possible at typical use levels of 0.2 to 0.4%. It is HLB independent and cold processable emulsifier.

Applications

Face creams | Moisturizing body lotions | Sunscreen creams

Leepol® TR - 2 (USP/NF Compendial Name :- Carbomer Co-polymer Type A)

It is a polymeric emulsifier of cross linked copolymers of acrylic acid. It is used as stabilizers of oil in water systems, with up to 50% oil loading possible at typical use levels of 0.2 to 0.4%. It is HLB independent and cold processable emulsifier. Other Leepol® grades should be used with Leepol® TR-2, where higher viscosity emulsions are required.

Applications

Skin lightening serums | Hand, face and body lotions | Sunscreen lotions

Leepol® ET - 1

It is a liquid acrylic rheology modifier, designed to suspend, stabilize, thicken and enhance the appearance of surfactant based cosmetic, pharmaceutical and household formulations. It has high yield value for suspending cosmetic beads and mica pearl powders. It is very useful where surfactant level is high. It is a cost effective and easy to use polymer.

Applications

Shampoos | Gel cleansers | Shower gels | Facial scrubs | Foaming facial cleansers

Advantages

- Thickening efficiency - High viscosity at low concentration
- Uniform performance - Leepol gives uniform viscosity performance, while natural gums vary in their performance
- Temperature stability - There is no significant effect of temperature on polymer
- Unaffected by aging - Excellent shelf life
- Microbial resistance - Resists bacterial attack and does not support mould growth
- Versatility - Although primarily used in aqueous systems with neutralization, it can also be used in solvent systems, with or without neutralization
- Elegance - Smooth and luxurious feeling

Neutralizers

Leepol® polymers are dry, highly coiled acidic molecules. After dispersion in water, they begin to hydrate and partially uncoil. Maximum thickening can be achieved by converting the acidic Leepol® polymer to a salt.It is easily achieved by neutralizing the Leepol® range with a common base such as Sodium hydroxide (NaOH), Potassium hydroxide (KOH), Tri-ethanolamine (TEA), Ammonia (28%), Diisopropanolamine, Aminomethyl Propanol (AMP), Triisopropanolamine (TIPA), Ammonium hydroxide (NH_4OH), Arginine etc. It is preferable to add strong bases previously diluted with water at a concentration not more than 10.0-20.0 % w/w.

Toxicity

Leepol® range is a high molecular weight polymer. It cannot be absorbed by body, thus it is totally safe for human consumption. Test for toxicological tolerance shows that it does not have any pronounced, pysiological action and is non-toxic.
Dermal irritation (in vitro test) - non-irritant
Eye irritation (in vitro test) - non-irritant
Skin sensitization (max. test) - non-sensitizing

Storage & Handling

Leepol® range is highly hygroscopic in supplied form, it contains maximum of 2.0% moisture. When exposed to open air at room temperature and 50% relative humidity, its equilibrium moisture uptake is 8.0%. All moisture uptake does not affect its efficiency but polymer with high level of moisture is more difficult to disperse and weigh accurately. So, Leepol® polymers must be stored in a tightly closed container and away from direct contact with water and excessive humid conditions.
Leepol® polymers efficiency will not affect up to two hours at temperatures below 104°C. When it is exposed to excessive temperatures, it can be plasticized and lose its characteristics.

Shelf life

Powder form : Five years from date of manufacturing in intact condition
Liquid form : Two years from date of manufacturing in intact condition
Note : Based on our testing, dry Leepol® polymers should last for years if stored properly and protected from moisture and extreme temperature

Packing

Powder form : 20 kg net in round fibre paper board drums with polyethylene liner

Liquid form : 20 kg, 60 kg plastic carboys and 200 kg plastic drums