PRODUCT OF INDIA

Atopol® Carbomer | Atocoat® Coating Material | Atosol® HCO

Advancement of Coating

Material Science And Polymer Chemistry

ABOUT US

Vision

At Atoll Exim, our vision is to become the most economical and reliable provider of polymer solutions by delivering innovative, high-performance, and sustainable products. We are dedicated to becoming a top brand in the industry by upholding the highest quality standards, backed by globally recognized accreditations and deep industry expertise. By employing, precision-driven manufacturing and advanced analytical capabilities, we strive to collaborate with companies across the polymer sector-offering a one-stop destination for comprehensive polymer solutions under one roof.

Mission

At Atoll Exim, our mission is to deliver world-class polymer solutions that combine innovation, sustainability, and cost-efficiency. With proven experience serving clients across 27+ countries, we are committed to expanding our global reach,offering precision manufactured, high performance materials tailored to diverse industrial needs. Through strong partnerships, continuous improvement, and uncompromising quality, we aim to be the trusted choice for polymer solutions worldwide

Research And Development

Atoll Exim's advanced R&D Lab is committed to developing innovative, customized solutions for the Pharmaceutical, Personal Care, Home Care, and Cosmetic Industries. Supported by our Polymer R&D Center in Mehsana, Gujarat, we focus on creating high-performance polymers and cutting-edge formulations that meet evolving market demands. Our scientific team works across areas such as novel drug delivery, nanotechnology, modified and sustained release, taste-masking, coating, encapsulation, and microsphere technology. These efforts enable the development of effective and consumer-friendly products including tablets, syrups, ointments, gels, creams, lotions, and shampoos-designed to deliver quality, functionality, and market relevance.

Manufacturing Facility

All polymers are manufactured in an automatic reaction system plant. Totally automated operations ensure the material never comes in contact with hands right from the raw material stage to the finished product stage. Air circulation takes care of zero pollution. Full air and dust control. The plant runs by skilled, experienced, and well-qualified chemical engineers, chemists, and operators.

Technical Support

We always stand to support our valuable customers by giving them technical assistance and doing R & D in our facility.
Capable technical team for knowledge, technical and scale-up support.
Technical seminars.
Innovative technology driven company.
Very well established systems and processes.
Capability to give tailor-made polymers for various applications.

Marketing

Our marketing policy is to directly reach to Customers, Distributors, Sole Agents. Support them with technical help up to standardization of the application. Marketing team comprises of well experienced persons with appropriate technical skills.

Analytical Facility

Atoll has advanced instruments at both its R&D center and manufacturing plant, including HPLC I GC I FTIR I Stability chambers I UV spectrophotometer I Brookfield viscometer I Auto dissolution apparatus Disintegration test apparatus etc.

Accreditations

ISO Certificate I Kosher Certificate I Halal Certificate I GMO Certificate I GMP Certificate I GLP Certificate I Drug & Cosmetic License I REACH Certificate I EXCIPACT Certificate

ISO 9001:2015 (QMS) Certified Company

PRODUCT OF INDIA

ISO 14001:2015 (EMS) Certified Company

PRODUCT AT GLIMPSE

Atopol® CARBOMER | ACRYLATES CO-POLYMER | (INCI - Carbomer)

Products	Application	Description
Atopol® ET1	Thickners	Transparent Gel
Atopol® ET 2	Thickners	Transparent Gel
Atopol® 940	Rheology Modifier Thickners Suspending-Agent Stabilizer Topical Application	Transparent Gel
Atopol® 980		Benzene Free
Atopol® 934		Opaque Gel
Atopol® 974		Benzene Free
Atopol® 941		Low Viscous Clear Gel
Atopol® 971		Benzene Free
Atopol® 934P	Oral Care Application Controlled Release	Special Grades for Internal Use in Pharmaceutical Formulation
Atopol® 974P		
Atopol® 971P		
Atopol® 956	Efficient Rhelogy Modifier Capable of Providing High Viscosity Gel, Hand Sanitizer, Hydroalcoholic Gel	Cross-Linked Polyacrylate Acid
Atopol® 990	Viscosity Enhancer, Gelling Agent, Suspending Agent, Moisturizing Capability	Cross-Linked Polyacrylate Polymer
Atopol® 996	Excellent Thickening Suspending Performance	Cross-Linked Polyacrylate Polymer

ISO 9001:2015 (QMS) Certified Company

PRODUCT OF INDIA

ISO 14001:2015 (EMS) Certified Company

PRODUCT AT GLIMPSE

Atopol® CARBOMER | ACRYLATES CO-POLYMER | (INCI - Carbomer)

Products	Application	Description
Atopol® 912G	Free flowing granular form for direct compression in pharmaceutical industry.	Cross-Linked Water Soluble Polymer of Acrylic Acid
Atopol® 971G		
Atopol® Ultrez 10	Easy to disperse self wetting rheology modifier with Short flow High viscocity Perfomance with best in class electrolyte tolerance and clarity	Cross-Linked Water Soluble Polymer of Acrylic Acid
Atopol® Ultrez 20		
Atopol® Ultrez 21		
Atopol® Ultrez 2020		
Atopol® Acrym-N-50	Pre neutralized anionic rheology modifier	Acrylates co polymer & mineral oil & polysorbate 80

ISO 9001:2015 (QMS) Certified Company

PRODUCT OF INDIA

ISO 14001:2015 (EMS) Certified Company

PRODUCT AT GLIMPSE

Atocoat® Coating Material (INCI - Methacrylic Acid & Ethyl Acrylate Copolymer)

Products	Application	Description
Atocoat® S-100 Atocoat® L-100 Atocoat® L-IOOD Atocoat® L-30D Atocoat® L-30DA Atocoat® E-100 Atocoat® E-12.5 Atocoat® EPO	Atocoat series comprise of Methylacrylic acid copolymers which is used in film coating, Enteric coating, sustain release, moisture barrier, taste masking, colon targeted coating	Methylacrylic acid copolymers Solvent System & Aqueous System

Atosol® HCO (Polyoxyl 40-Hydrogenated Castor Oil)

Products	Application	Description
Atosol® HCO K-140 Atosol® HCO POWDER Atosol® HCO FLAKE	Atosol HCO is nonionic solubiliser and emulsifier obtained by reacting hydrogenated castor oil Applicable as Solubilizer Dissolution Improver Emulsifier Moisturizer Transparency Improver Volatility retardant Film Former Masking Agent Aerosol Formulations	Colorless Viscous Liquid Odourless Viscous Liquid Nontoxic
Atosol® HCO K-150		White to Pale Yellow Viscous Liquid Nontoxic
Atosol® HCO K-160		

ATOPOL® Carbomer

Acrylate Co-polymer
Polyacrylic Acid

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

Atopol® 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, alcohol and glycols. Before neutralization, pH of Atopol® 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	Atopol® 940, Atopol® 934,Atopol® 941, Atopol® 956, Atopol® 996
Benzene free	Atopol® 980, Atopol® 974, Atopol® 971, Atopol® 990, Atopol® ET-1, Atopol® TR-1, Atopol® TR-2
Pharmaceutical for oral use Sustained release	Atopol® 934P, Atopol® 974P, Atopol® 971P
High surfactant system	Atopol® 97IP, Atopol® 934P
Polymeric emulsifier	Atopol® ET-I, Atopol® TR-1, Atopol® TR-2, Atopol® U-1O, Atopol® U-20, Atopol® U-21

Viscosity

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

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

Atopol® 940 I 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 liquid or gels for cosmetic and pharmaceutical industries. It confirms to USP/NF specification. Atopol® 980 is benzene-free grade of Atopol® 940.

Applications

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

Atopol® 934 I 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. Atopol® 974 is a benzene-free grade of Atopol® 934.

Applications

Creams I Hand, face and lotions I Moisturizing gels

Atopol® 934P I 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. Atopol® 974P is a benzene-free grade of Atopol® 934P.

Applications

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

Atopol®941 I 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. Atopol® 971 is benzene-free grade Of Atopol®941.

Applications

Lotions I Hydro-alcoholic gels I Clear gels

Atopol® 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 I Oral solid forms

Atopol® 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 I High clarity gels

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

It is a higher viscosity with good clarity compared to Atopol® 940 or Atopol® 980 in aqueous and hydro-alcholic based system. It has extremely low short flow properties

Applications

Creams I Hydro-alcoholic gels I Exfoliating scrubs

Atopol® 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 stabilizer 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 I Moisturizing body lotions I Sunscreen creams

Atopol® 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 a stabilizer 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 emulsiffier. Other Atopol® grades should be used with Atopol® TR-2 where higher Viscosity emulsions are required.

Applications

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

Atopol® 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 I Gel cleaners I Shower gels I Facial scrubs I Foaming facial cleaners

Advantages

- Thickening efficiency - High viscosity at low concentration
- Uniform perfomance - Atopol gives uniform viscosity performance, while natural gums vary in their performance
- Temperature stability - There in no significant effect of temperature on polymer
- Unaffected by aging - Excellent shelf life
- Microbial resistance - Resists bacterial attack and does not support mould growth
- Versatiity - 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

Atopol® 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 Atopol® polymer to a salt. It is easily achieved by neutralizing the Atopol® 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

Atopol® 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, physiological 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

Atopol® 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, Atopol® polymers must be stored in a tightly closed container and away from direct contact with water and excessive humid conditions.
Atopol® polymers efficiency will not affect up to two hours or 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 Atopol 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

ATOCOAT®

METHACRYLIC ACID COPOLYMER

- Enteric Coating
- Film Coating
- Sustained Release
- Taste Masking
- Moisture Barrier Coating
- Transdermal Patch
- Encapsulation
- Tablet Binder

Atocoat is an advancement of
Coating Material Science & Polymer Chemistry.

Applications

- Enteric coating is used for resistance to gastric fluid.
- Film coating is used for resistance to evironmental effect like humidity, temperature, light etc.
- Provides product identity.
- Imparts cosmetic elegance to product appearance.
- Reduce the risk of incompatibility.
- Improve mechanical strength of product.
- Suitable for matrix structure.

Benefit

- Options of solvent, hydro-alcoholic and aqueous vehicle.
- Less quantity required so reducing volume of coating solution thus shorting production time.
- Stability over a broad temperature range.
- Exhibits excellent color value.
- Cost effective.
- Easy to formulate.

Toxicity

- Atocoat® is a high molecular weight polymer and can not be absorbed by body. Thus, it is safe for human consumption.
- Test for toxicological tolerance shows that it does not have any pronounced or physiological action.

Shelf Life

- Powder form: Five years from date of manufacturing in intact condition.
- Liquid form: Two years from date of manufacturing in intact condition.

Packing

- Powder form: 5kg and 20kg net in paper board round drums with polyethylene liner.
- Liquid form: 20kg and 60kg plastic carboys and 200kg plastic drums

Storage

- Powder : Store at dry place and below 50°C.
- Liquid : Store at dry place and between 5°C to 40°C. Do not freeze.

Atocoat® family of polymers is either transparent or colored film forming coating polymers based on methacrylic acid copolymers type A, B & C which confirms to USP/NF, EP & JP specifications. Atocoat polymers are used in film coating, enteric coating, moisture barrier coating, sustained release coating and matrix forming, taste masking of bitter drugs, binder for powders, transdermal therapeutic system etc.

Application	Grade	Availability	Solvents	Use Level	Solubility	Pharmacopoeial Monographs	Advantages
•Enteric Coating (Drug delivery in Jejunum)	Atocoat® L100	Powder	Alcohols Acetone	4.0-5.0%	Soluble in intestinal fluid from pH 6.0 and above, Insoluble in gastric fluid	• USP/NF: Methacrylic Acid Copolymer, Type A - NF	Organic / Solvent Coating system, Less quantity requirement
•Enteric Coating (Drug delivery in Duodenum)	Atocoat® L1OOD	Powder	Water, Water + Alcohol Alcohols	4.0-5.0%	Soluble in intestinal fluid from pH 5.5 and above, Insokuble in gastric fluid	• USP/NF: MetkacryllcAold Copolymer, Type - C - NF • Ph Eur : Methacrylic Acid Ethyl AcrylateCopolymer (1.1) Type A	Aqueous & semi aqueous coating system, Less quantity requirement
	Atocoat® L30D	30% Milky oqиои dispersion				• USP/NF : Methacrylic Acid Copolymer Dispersion-NF • Ph Eur.: Methacrylic Acid Ethyl Acrylate Copolymer (1.1) Dispersion 30 Percent	Aqueous coating System, Less quantity requirement
• Sustained Release • Enteric Coating (Drug delivery in Colon)	Atocoat® S100D	Powder	Alcohols Acetone	10.0-20.0%	Soluble in intestinal fluid from pH 7.0 and above, Insoluble in gastric fluid	•USP / NF : Methacrylic Acid Copolymer, Type B - NF • Ph Eur : Methacrylic Acid - Methyl Methacrylate Copolymer (1:2)	PH dependant Polymer, Mixing possibility with Atocoat L100
	Atocoat® S12.5	12.5% Clear solution In ispropanol					

*Plasticizer needed (where the films are brittle,to improve film elasiticity) Recommended plasticizer Triethyl Citrate, Castor Oil, Propylene glycol,Polyethylene glycol, Dibutyl phtalate, Triacetin, Dibutyl sebacate etc. Depends facilities available at customer premises like type of product,size, equipments etc.

Jejunum pH 6-7

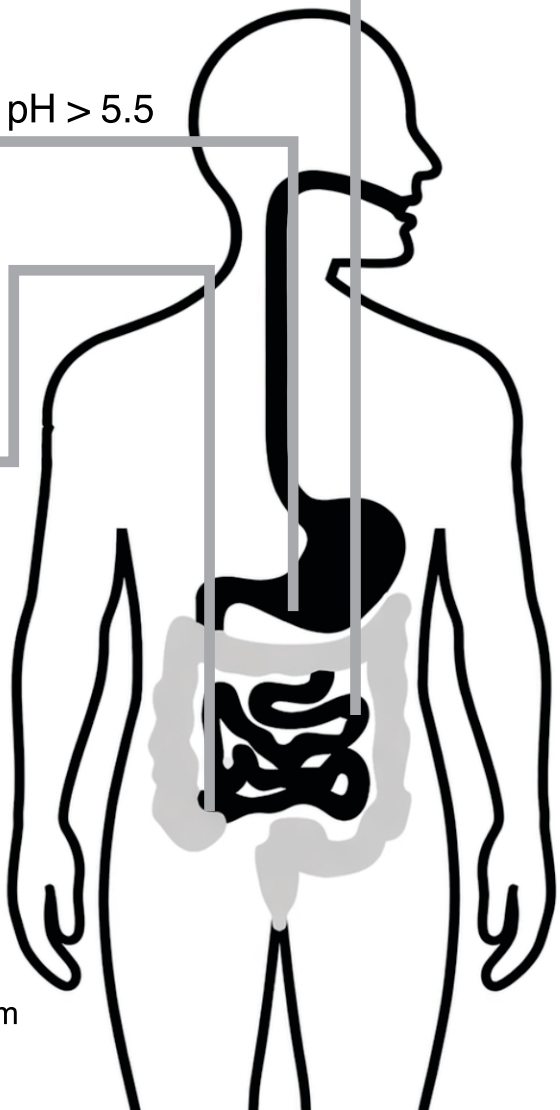
Atocoat® L-100

Enteric Formulations Duodenum pH > 5.5

Atocoat® L-lOOD
Atocoat® L-30D
Atocoat® L-30DA

Ileum, Colon delivery pH >7.0

Atocoat® S-100
Atocoat® S-12.5



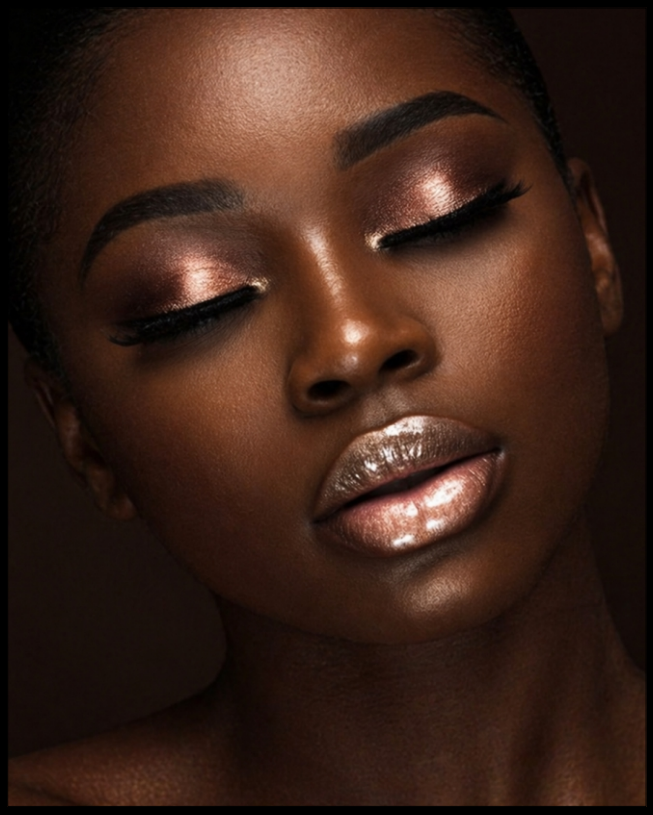
www.atollexim.com

ATOSOL® HCO

Castor Oil
Derivatives

Hair Care I Skin Care
Face Care I Sun Care

Vitamin Solubilizer
Oil & Perfume Solubilizer
API Solubilizer
Dissolution Improver
Cream Emulsifier



HCO K- 140
HCO K- 150
HCO K- 160

Atosol® is an advancement of
Coating Material Science
& Polymer Chemistry

Hair Care I Skin Care I Face Care I Sun Care

Atosol® HCO grades are chemically castor oil derivatives. They are non ionic solubilizer obtained by reacting hydrogenated castor oil with ethylene oxide. They are suitable for multiple applications providing solubilizing and emulsifying capacity to many of cosmetics and personal care products.They are effective solubilizer for perfumes, essential oils and other oils soluble cosmetic actives. They act as wonderful emulsifier for oil In water and water in oll emulsion system.

Mechanism

- Modify the polarity of water.
- Alter various properties like density, surface tension, viscosity, boiling point and specific heat of solution in various ways.
- Wetting the surface of solutes by lowering the contact angle between the solute and the wetting liquid.
- Increases the salvation/hydration of solutes.
- It solubilize the insoluble particles by converting them into small (nano) size particles with or without heating.

Benefits

- Required lesser ratio compare to other solubilizers
- Transparency improver
- Cost effective
- Volatility retardant
- Better stabillity at storage and elevated temperature
- GRASstatus

Applications

- Face wash
- Shampoo
- Body spray
- Body mist
- After Shave cologne
- Serum
- Shower gel
- Liquld soaps
- Skin Care Creams & Lotions
- Suncare
- Baby Care products
- Hair Care products
- Detergent cleansers
- Wetting agent for waxes
- Aerosol formulation
- Decorative cosmetics
- Air freshner
- Hand santitizers

Functions

Solubilizer

Atosol® HCO range improves water solubility of major water insoluble products. It is compatible with most of all ingredients. it helps to solubilize different Vitamins like vitamin A palmitate, vitamin D, vitamin E, acetate etc. It is also used ae solubilizer and stabilizer for oils and perfumes in cosmetic Industries.

Emulsifier

Atosol® HCO range ls excellent versatile nonionic emulsifying agent. It emulsifies major hydrophobic substances like fatty acids, fatty alcohols,mineral oil etc. It is suitable to obtain O/W cream and lotions, also can be used as solubilizer for skin care. It has an excellent emulsifying ability and suitable for emulsification of mineral oil, natural oil, stearyl etc.

Moisturizer

Atosol® HCO range improves moisturizing effect and soft feeling of topical formulations.

Transparency Improver

Atosol® range solubilizes insoluble oily substances in aqueous system and hence it improves transparency and shining. In cosmetic formulations, it impacts elegance appearance of products such as shaving gel, hand wash gel etc.

Volatility Retardant

Atosol® HCO range retards valatilities of solvents. It can be used for highly volatile products like after shave lotion, perfumes etc. to retain its effect for longer period

Film Former

Atosol® HCO range improves fllm forming capacity and flow properties in cream, lotion, lipstick etc.

Adhesion Reducer

Atosol® HCO reduces adhesion and chipping properties of oils. It gives smooth feeling in all cosmetic (Creams and lotions, hair oils etc.) formulations.

Aersol Formulations

Atosol® HCO improves solubility of the propellant in aqueous phase of aerosol.

Characteristics of Atosol® HCO grades

Characteristics	Atosol® HCO K-140	Atosol® HCO K-150	Atosol® HCO K-160
Chemical Name	• PEG-40 Hydrogenated Castor Oil [USP/NF) • Macrogol-Glycerol hydroxystearate (Ph. Euro)	PG, PEG-50 Hydrogenated Castor Oil (In House)	PEG-60 Hydrogenated Castor Oil (In House)
Description	White to pale yellow Viscous liquid or soft thin paste	White to pale yellow Viscous liquid	White to off white Paste
Odor	Odorless	Odorless	Odorless
Taste	Tasteless	Tasteless	Tasteless
Miscibility	At elevated temperatures, it forms clear mixtures with fatty acids and fatty alcohols.		
Effect of temperature	Atosol® HCO grades are stable and does not turn rancid unless subjected to excessive heat.		
Saponification value	45-69	45-55	35-45
Hydroxyl value	60-80	65-75	50-70
Congealing temperature	16-26°C	5-15°C	-
pH value of 10% aqueous solution	6.0-7.0	6.0-7.0	6.0-8.0
Water content (K. Fischer)	NMT 3.0%	NMT 3.0%	NMT 2.0%
HLB value	14-16	14-17	15-17

Usage

Atosol® HCO usage level depends upon the nature of perfume or essential oil in cosmetic products. Generally, upto 1:3 perfume to solubilize ratio is used to solubilize the perfume or essential oil effectively. If the perfume or active Ingredient is highly water insoluble then Atosol® HCO usage level should be increased to make a clear solution. The usage level of Atosol® HCO grades is generally 2 to 5% as an emulsifier for the preparation of cosmetic formulations. To give general idea about the solubilization properties Of Atosol® HCO grades, the following table lists the quantities of solubllizer required to obtain clear solutions with 1 gm of the ethereal oils and fragrances listed and 0.2g of the hydrophobic active substances listed.

Vitamin Solubilizer I Oil & Perfume Solubilizer I API Solubilizer I Dissolution Improver I Cream Emulsifier

Atosol® HCO grades are chemically castor oil derivatives They are non-ionic solubilizer and emulsifying agents obtained by reacting hydrogenated castor oil with ethylene oxide. They consist hydrophobic and hydrophilic part. They are almost tasteless and odorless. They are used as solubilzer for fat-soluble vitamins, perfumes, essential oils and other hydrophobic pharmaceuticals. They have ability to solubilize or emulsify oil soluble ingredients and convert them into clear transparent solution or stable emulsion respectively. It Improves the solubility of poorly soluble drugs (BCS class II and class IV)

Mechanism of Atosol® HCO:

- Modify the polarity of water.
- Alter various properties like density, surface tension, viscosity, boiling point and specific heat of solution In various ways.
- Wetting the surface of solutes by lowering the contact angle between the solute and the wetting liquid.
- Increase the salvation/hydration of solutes.
- It solubilize the insoluble particles by converting them into small (nano) size particles with or without heating.

Typical specification

Name	Atosol® HCO K140	Atosol® HCO K150	Atosol® HCO K160
Saponification value	45-69	45-55	35-45
Hydroxyl value	60-80	65-75	50-70
Congealing temperature	16-26°C	5-15°C	-
pH value of 10% aqueous solution	6.0-7.0	6.0-7.0	6.0-8.0
Water content (K. Fischer)	NMT 3.0%	NMT 3.0%	NMT 2.0%
HLB value	14-16	14-17	15-17

Characteristics of Atosol® HCO grades:

Characteristics	Atosol® HCO K-140	Atosol® HCO K-150	Atosol® HCO K-160
Chemical Name	•PEG-40 Hydrogenated Castor Oil [USP/NF] •Macrogol-Glycerol hydroxystearate (Ph. Euro)	PG, PEG50 Hydrogenated Castor Oil (In House)	PEG-60 Hydrogenated Castor Oil (In House)
Description	White to pale yellow Viscous liquid or soft thin parte	White to pale yellow Viscous liquld	White to off white Paste
Odor	Odorless	Odorless	Odorless
Taste	Tasteless	Tasteless	Tasteless
Miscibility	At elevated temperatures, it forms clear mixtures with fatty acids and fatty alcohols.		
Effect of temperature	Atosol® HCO grades are stable and does not turn rancid unless subjected to excessive heat.		
Solubilty	It forms clear solutions, in water, ethanol, 2 propanol, n propanol, ethyl acetate, chloroform, tetrachloride, toluene.	It forms clear solutions, in water,ethanol, 2 propanol, n propanol, ethyl acetate, chloroform, tetrachloride, toluene.	It forms clear solutions, in water, ethanal, 2 propanol, n propanol.

Characteristics of Atosol® HCO grades

The solubllizing capacity of the various active ingredients with Atosol® HCO grades is given in different ratio as follow.

Active ingredient (1 gm)	Atosol® HCO K-140 (gm)	Atosol® HCO K-150 (gm)	Atosol® HCO K-160 (gm)
Acetaminophen		5	
Vitamin A Palmitate	5		
Vitamin D	5		
Vitamin E Acetate	5		
Bromhexine Hydrochloride		30	
Ambroxol Hydrochloride		15	
Cyproheptadine Hydrochloride		60	
Dextromethorphan Hydrobromide		5	
Povidone lodine	0.3		
Cod Liver Oil	10		10
Chlorhexidine Gluconate (20%)	10	10	
Acebrophylline		30	
Menthol		4	

Note: Above table shows best suitable option of Atosol® HCO grades for different active ingredients. All Atosol® HCO grades are capable of solubilizing above active ingredients in different ratio. Please contact us for formulation details of other active ingredients. Atosol® HCO grades shows little tendency to foaming which can be suppressed by adding a small amount of defoamer.

Applications:

Solubilizer

Atosol® HCO range improves water solubility of major water insoluble products. It is compatible with most of all ingredients. It helps to solubilize different pharmaceutical active ingredients like Acetaminophen, Bromhexidine HCI, Dextromethorphan HBr, Povidone lodine, Loxapine Succinate, Vitamins like Vitamin A Palmitate, Vitamin D, Vitamin E Acetate etc. It is also used as solubilizer and stabilizer for oils and perfume in cosmetic industries.

Dissolution Improver

It is generally used between 3.0% to 5.0% w/w of API to improve dissolution of poorly soluble active ingredients like Cefuroxime Axetil, Cerfpodoxime Proxetil, Albendazole etc. It should be mixed with API with or without heating and then dissolved in vehicle (Aqueous l Non aqueous).

Emulsifier

Atosol® HCO range is excellent versatile nonionic emulsifying agent. It emulsifies major hydrophobic substances like fatty acids, fatty alcohols,mineral oil etc. It is suitable to obtain 0/W cream and lotions, also can be used as stabilizer for skin care. It has an excellent emulsify abllity, suittable for emulsification of mineral oil, natural oil, stearyl etc. It can obtain a steady system when used alone.

Moisturizer

Atosol® HCO range improves moisturizing effect and soft feeling.

Transparency Improver

Atosol® HCO range solubilizes insoluble oily substances in aqueous system and hence it Improves transparency and shining. In cosmetic fomulation, it impacts elegance appearance of products such as shaving gel, hair styling gel, hand wash gel etc. In pharmaceutical syrup formulations, it improves transparency.

Volatility Retardant

Atosol® range retards volatilities of solvents. It can be used for highly volatile products like after shaving lotion, perfumes etc. to retain its effect for longer period.

Film Former

Atosol® HCO range improves film forming capacity and flow properties. Atosol® HCO is preferred in cream, lotion, lipstick etc. to improve film forming capacity.

Masking Agent

Atosol® HCO masks unpleasant taste and odor of typical formulations like pharmaceutical syrup containing alcohols and suspension like artemether and lumefantrine suspension.

Adhesion Reducer

Atosol® HCO reduces adhesion and chipping properties of oils. It gives smooth feeling on application like in all pharmaceuticals and cosmetic (Creams and lotions, hair oils etc.) formulations.

Aerosol Formulations

Atosol® HCO Improves solublity of the propellant in aerosol in aqueous phase.

Toxicity

Acute and chronic toxicity test in animals have shown that Atosol® HCO grades are essentially non-toxic and non-irritant material.

Storage & Handling

Atosol® HCO grades must be stored in a tightly closed container. If the containers are repeatedly opened, microorganisms may grow in the product, particularly the equipment used is not sterile. For proper handling and sampling homogenization of the container content is necessary. It is recommended to use electrical drum heaters, heating covers or a heating chamber.

Retest date

At least two years from date of manufacturing in intact condition.

Packing

20kg &50kg net in plastic carboy & 200kg plastic drums.

Get In Touch

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