Film Former
Crysol range improves film forming capacity and flow properties. Crysol is preferred in cream, lotion, lipstick etc. to improve film forming capacity.

Masking Agent
Crysol masks unpleasant taste and odour of typical formulations like pharmaceutical syrup containing alcohols and suspension like artemether and lumefantrine suspension.

Adhesion Reducer
Crysol reduces adhesion and chipping properties of oils. It gives smooth feeling on application like in all pharmaceuticals and cosmetic (creams, and lotions, hair oil etc.) formulations.

Aerosol Formulations
Crysol improves solubility of the propellant in aerosol in aqueous phase.

Charon Pharma Chem Industries

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Castor Oil Derivatives (CRYSOL)

- Vitamin Solubilizer
- Oil & Perfume Solubilizer
- API Solubilizer
- Dissolution Improver
- Cream Emulsifier
  - Crysol K - 140
  - Crysol K - 150
  - Crysol K - 160
  - Crysol Flake

Charon Pharma Chem Industries

the new generation polymer technologist

crysol grades are chemically castor oil derivatives. They are non-ionic solubilizers 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 solubilizer 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).

Crysol grades:

Crysol K-140
Crysol K-150
Crysol K-160
Crysol Flake

Mechanism of Crysol:

- 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 solvation / hydration of solutes.
- It solubilize the insoluble particles by converting them into small (nano) size particles with or without heating.

Typical specification:

Name	Crysol K-140	Crysol K-150	Crysol K-160
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 Crysol grades:

Characteristics	Crvsol K-140	Crysol K-150	Crysol K-160	
Chemical Name	PEG-40 Hydrogenated Castor Oil (USP/NF)	PG, PEG-40 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 clea mixtures with fatty acids and fatty alcohols.			
Effect of temperature	Crysol grades are stable and does not turn rancid unless subjected to excessive heat.			
Solubility	It forms clear solutions, in water, ethanol, 2 - propanol, n-propanol, ethyl acetate, chloroform, carbon tetrachloride, toluene	It forms clear solutions, in water, ethanol, 2 - propanol, n-propanol, ethyl acetate, chloroform, carbon tetrachloride, toluene	It forms clear solutions in water, ethanol, 2 - propanol, n-propanol.	It forms clear solutions in water, ethyl alcohol, n-propyl alcohol, isopropyl alcohol, ethyl acetate, chloroform, carbon tetrachloride/ trichloroethylene, toluene and xylene.

Solubilizing capacity of Crysol grades:

The solubilizing capacity of the various active ingredients with Crysol grades is given in different ratio as follow.

Active ingredient (1 gm)	Crysol K-140 (gm)	Crysol K-150 (gm)	Crysol 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 iodine	0.3	-	-
Codliver oil	10	-	10

Note: Above table shows best suitable option of Crysol grades for different active ingredients. All Crysol grades are capable of solubilzing above active ingredients in different ratio. Please contact us for formulation details of other active ingredients.

Applications:

Solubiiizer

Crysol 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 Acet aminophen, Bromhexidine HCL, Dextromethorphan HBr, Povidone iodine, 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, Cefpodoxime proxetil, Albendazole etc.
It should be mixed with API with or without heating and then dissolved in vehicle (Aqueous / Non aqueous).

Emulsifier

Crysol 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 ability, suitable for emulsification of mineral oil, natural oil, stearyl etc. It can obtain a steady system when used alone.

Moisturizer

Crysol range improves moisturizing effect and soft feeling.

Transparency Improver

Crysol range solubilizes insoluble oily substances in aqueous system and hence it improves transparency and shining In cosmetic formulation, 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

Crysol 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.