



ULTRAPEG[®]

Polyethylene glycols



DESCRIPTION

The line of ULTRAPEG[®] products is made up of ethylene oxide polymers. It is represented by the following general formula:



According to the degree of ethoxylation (n), products with different molecular weights and melt points can be obtained, allowing the use of these products in various applications.

The ULTRAPEG[®] line is made up of:

Product Name	Chemical Description	CAS No. ^[1]
ULTRAPEG 200	Polyethylene glycol 200	25322-68-3
ULTRAPEG 300	Polyethylene glycol 300	25322-68-3
ULTRAPEG 400	Polyethylene glycol 400	25322-68-3
ULTRAPEG 600	Polyethylene glycol 600	25322-68-3
ULTRAPEG 1000	Polyethylene glycol 1000	25322-68-3
ULTRAPEG 1500 & ULTRAPEG 1500 F	Polyethylene glycol 1500	25322-68-3
ULTRAPEG 4000 F	Polyethylene glycol 4000	25322-68-3
ULTRAPEG 6000 F	Polyethylene glycol 6000	25322-68-3
ULTRAPEG 8000 F	Polyethylene glycol 8000	25322-68-3

¹ CAS: Chemical Abstract Society

APPLICATIONS

The line of ULTRAPEG[®] products are hygroscopic polymers highly soluble in water due to the hydrophilic characteristic provided by the polyoxyethylene chain. By varying the molecular weight, liquid or solid products can be obtained, covering a wide range of viscosities, melt points and hardness consistency.



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The ULTRAPEG[®] line is used in various markets and applications:

Market/Application	Function	200	300	400	600	1000	1500/ 1500F	4000F	6000F	8000F
ADHESIVES										
General	Humectant, plasticizer, lubricant & antistatic				x	x	x	x	x	x
AGROCHEMICAL										
Emulsifiable concentrate	Solvent	x	x	x	x					
Soluble concentrate	Adjuvant	x	x	x	x					
Fertilizers	Anticaking		x					x	x	x
Wettable powder and dispersible granules	Humectant						x	x	x	x
RUBBER										
Natural Rubber	Lubricant, mold-release agent							x	x	x
Synthetic Rubber	Aids & promotes vulcanization			x				x	x	x
	Antistatic agent							x		
CERAMIC										
Ceramic bodies	Plasticizer, promotes green resistance							x	x	x
Serigraphy	Lubricant, binding agent, vehicle for serigraphy & thixotropic agent	x	x	x				x	x	x
LEATHERS										
General	Raw material for esterification of fatty acids that provide emulsifying, softening, lubricating, humectant & antistatic properties	x	x	x	x	x	x	x		
DETERGENTS										
Non-aqueous liquid detergents	Vehicle	x						x	x	
Tablets and Blocks	Binder; Dissolution Control							x	x	x
Enzymes	Vehicle							x	x	
Sanitary bars	Consistency agent							x	x	
LUBRICANTS										
General	Thermal resistance agent, Lubricating agent	x	x	x						
ENVIRONMENT										
Pollutant emission control	Absorption of chlorates, phenols and aromatics	x	x	x						



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Market/Application	Function	200	300	400	600	1000	1500/ 1500F	4000F	6000F	8000F
PAPER										
Gravure paper	Humectant, plasticizer	x	x	x	x	x	x	x		
Cardboard/packaging & toilet paper	Softening agent	x	x	x	x	x	x	x		
POLYURETHANES										
General	Chain-extender for Polyols	x	x	x	x					
PAINTS										
General	Humectant	x	x	x	x	x	x			
	Rheology agent	x	x	x	x	x	x			
	Solvent	x	x	x						
TREATMENT OF WOOD										
Green wood	Dimensional stability				x	x	x	x		
Antique wood	Preservation				x	x	x	x		
TREATMENT OF METALS										
Polishing paste	Vehicle, binding agent, lubricant		x	x		x	x	x	x	x
Printed circuit	Weld anti-splash agent	x	x	x	x					
TEXTILE										
General	Raw material for esterification of fatty acids to obtain products with emulsifying, softening, lubricating, humectants & antistatic properties	x	x	x	x	x	x	x		
PERSONAL CARE										
Bath oils	Solubilizer	x								
Creams and lotions moisturizers	Vehicle, Humectant, Perfume fixative	x	x	x	x	x	x	x	x	
Products for makeup (lipsticks, shadows, foundations)	Solubilizer, Humectant	x	x	x				x	x	x
Toothpastes	Humectant, Consistency agent						x			
Cream without rinsing for hair	Conditioner agent, Consistency agent	x	x			x	x	x		
Shampoos	Viscosity regulator, Conditioner agent	x	x	x						
Deodorants	Vehicle		x			x	x			
Products for skin treatment	Humectant				x	x	x	x		
Soaps	Humectant, Auxiliary modeling, Perfume fixative			x	x	x	x	x	x	
Hair for spray	Antistatic agent	x	x	x	x					
Fragrances	Fixative	x								
Products for skin cleansing	Humectant, Auxiliary cleaning							x		



INFORMATIVE PROPERTIES ⁽¹⁾

Product	Appearance @ 25°C	Average molecular weight	Acid Value (mgKOH/g)	Ash content (%)	pH ⁽²⁾	Hydroxyl Vaule (mg KOH/g)	Water (%)
ULTRAPEG 200	Liquid	190-210	0.5 max.	0.1 max.	4.5-7.5	535-590	1.0 max.
ULTRAPEG 300	Liquid	285-315	0.5 max.	0.1 max.	4.5-7.5	356-394	1.0 max.
ULTRAPEG 400	Liquid	380-420	0.5 max.	0.1 max.	4.5-7.5	267-295	1.0 max.
ULTRAPEG 600	Liquid	570-630	0.5 max.	0.1 max.	4.5-5.5	178-197	0.25 max.
ULTRAPEG 1000	Solid	950-1050	0.5 max.	0.1 max.	4.5-7.5	107-118	0.5 max.
ULTRAPEG 1500	Solid	1350-1595	0.5 max.	0.1 max.	4.5-7.5	70-83	1.0 max.
ULTRAPEG 1500 F	Flakes	1350-1595	0.5 max.	0.1 max.	4.5-7.5	70-83	1.0 max.
ULTRAPEG 4000 F	Flakes	3600-4400	0.5 max.	0.1 max.	4.5-7.5	25-31	1.0 max.
ULTRAPEG 6000 F	Flakes	5400-6600	0.5 max.	0.1 max.	4.5-7.5	17-20	1.0 max.
ULTRAPEG 8000 F	Flakes	7000-9000	0.5 max.	0.1 max.	4.5-7.5	12.5-16.0	1.0 max.

Notes:

(1) The properties described above are for information purposes only and may be altered without prior notice. Please contact OXITENO for the current specification as needed.

(2) 5% aqueous solution at 25 °C.

REGULATORY ASPECTS

The products in the ULTRAPEG® line are used in U.S. Personal Care products under their INCI names as found in the Cosmetic Ingredient Handbook. They can also be used as indirect food contact ingredients in accordance with the Food and Drug Administration - FDA.

Below is the INCI description:

Product	INCI
ULTRAPEG 200	PEG-4
ULTRAPEG 300	PEG-6
ULTRAPEG 400	PEG-8
ULTRAPEG 600	PEG-12
ULTRAPEG 1000	PEG-20
ULTRAPEG 1500 & ULTRAPEG 1500 F	PEG-32
ULTRAPEG 4000 F	PEG-75
ULTRAPEG 6000 F	PEG-150
ULTRAPEG 8000 F	PEG-200



HANDLING AND STORAGE

The products in the ULTRAPEG line have low toxicity levels and are readily biodegradable. Use proper personal protective equipment (PPE) when handling the products, such as PVC gloves, safety goggles, and coat.

In case of accidental contact, proceed as follows:

- eyes: wash immediately with abundant water for at least 15 minutes;
- skin: remove the contaminated clothing and wash the affected sites with abundant water;
- ingestion: seek urgent medical care.

Store these products in sealed containers, in a sheltered, dry place, away from sources of heat or ignition. Because these products are hygroscopic, we recommend storing them on cement floors at low humidity.

Handle chemical products in well-ventilated areas, with ready access to emergency showers and eyewash stations.

The products in the ULTRAPEG[®] line are considered non-flammable. When heated to temperatures above their flash point, decomposition may occur. In case of actual fire, please consult the appropriate MSDS.

ULTRAPEG[®] 200, 300 and 400 are low-viscosity liquids at temperatures above 5°C. ULTRAPEG[®] 600 is near its melt point at typical room temperatures and therefore may be a liquid, paste or solid. The products in the ULTRAPEG[®] line with molecular weights above 600 are solids and become clear liquids at temperatures above 60°C.

For bulk storage of products in the ULTRAPEG[®] line with molecular weights of 600 or more, use tanks made of AISI 304 or 316 stainless steel or carbon steel coated with vinyl ester resin. These tanks should have internal coils made of 304 or 316 stainless steel installed at the bottom and provided with hot water at temperatures of 70 to 80°C. Steam is not recommended as product may darken at high heat. In addition, a recirculation system is recommended to homogenize the product before use. Repeated heating and cooling of ULTRAPEG[®] 600 may cause darkening over time. At their lowest viscosities, centrifugal pumps are adequate for discharge and transfer of product. Use nitrogen blankets for storage to help prevent darkening and minimize water absorption due to the hygroscopic characteristic of the ULTRAPEG[®] Line.

To handle products in the ULTRAPEG[®] line with molecular weights over 600, packaged in drums, we recommend heating in ovens, water baths or with thermal tapes at temperatures of 60°C to 80°C for only as long as it takes to melt and homogenize the products before use.



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DISCLAIMER

This bulletin contains information given in good faith, based on Oxiteno’s current knowledge on the subject, and is purely indicative. Any information, including suggestions for using the products, should not preclude experimental testing and verification, which are essential to ensure the suitability of the products to each specific application. All users shall also abide by local laws and obtain all necessary permits. When handling the product, consult the safety data sheet. In case of questions or additional needs, please contact Oxiteno through our customer service channels.



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