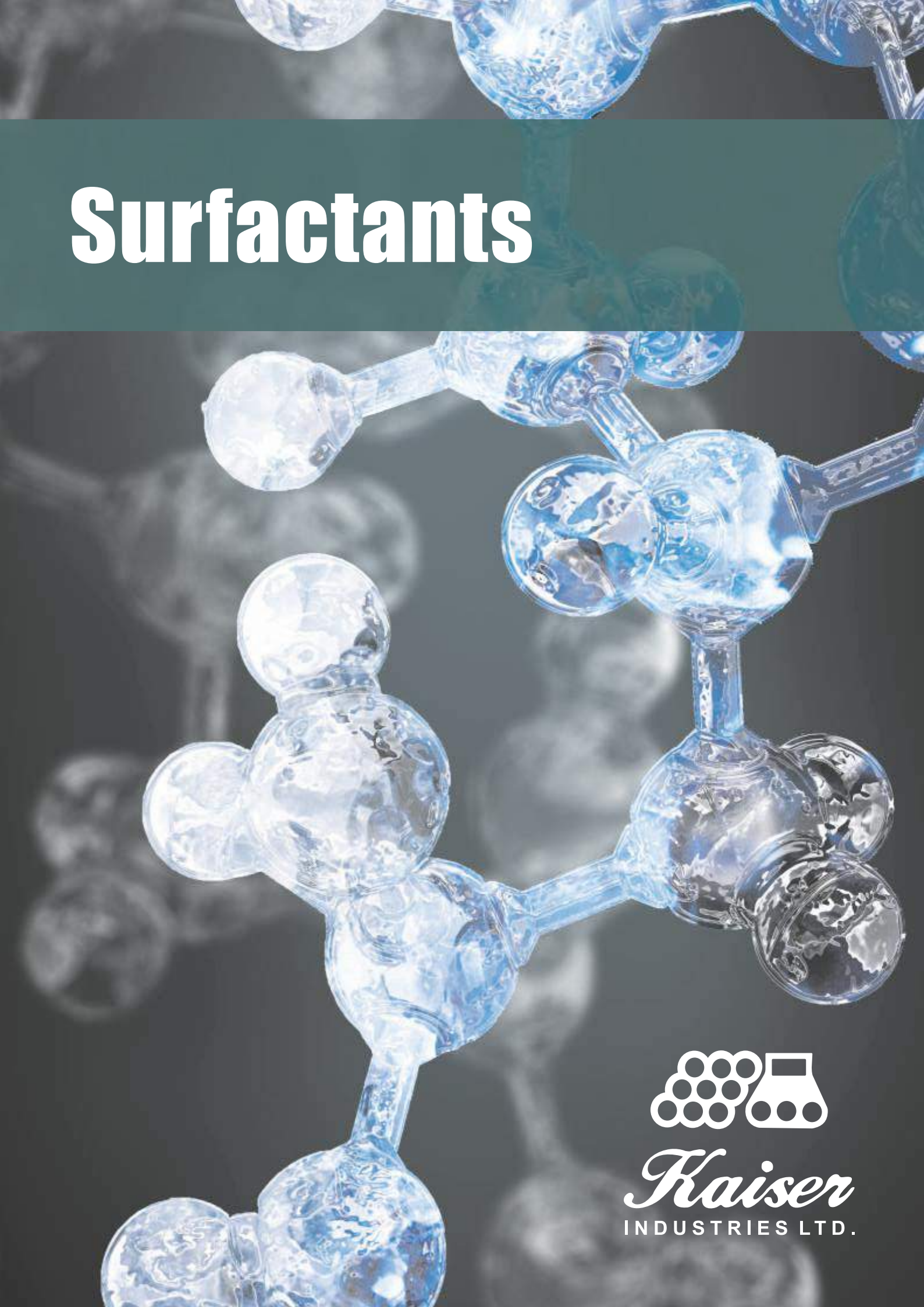
Surfactants



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INDUSTRIES LTD.

Company Profile

KAISER is India's Leading manufacturer of Surfactants and Speciality Chemicals with over 30 years of experience. Our capabilities are exemplified by the breadth of products presented in our range. We offer a comprehensive range of Non-Ionic, Anionic, Cationic and Amphoteric Surfactants. We are continuously engaged in new-product development and our portfolio of products is ever increasing.

Welcome to the KAISER Industries Ltd.

KAISER is among India's Leading manufacturer of surfactants and speciality chemicals. With over 30 years of experience, KAISER is able to manufacture a comprehensive range of Non-Ionic, Anionic, Cationic and Amphoteric surfactants. With a broad spectrum of chemistries and vast product range (1600+). KAISER is able to meet unique requirements of customer's and act as a primary supplier for companies both locally and internationally.

KAISER currently operates at multiple sites. The sites are equipped with similar Ethoxylation, Propoxylation, blending and tolling facilities.

Non-ionic Surfactants

We offer a wide range of non-ionic surfactants for use as emulsifying agents, and expertise to support our customers in the development of their products and formulations.

Here is a small selection of the market sectors in which we can help you:

- Surfactants for Crop Protection.
- Oilfield Solutions
- Personal & Home Care
- Natural and synthetic rubbers; formation and stabilisation of latexes
- Wax coatings; for chipboard and other construction materials
- Silicone Surfactants; for use in food processing, textiles, personal care and others
- Asphalt and bitumen; for road surfacing and roofing
- Industrial Lubricants; metal working and textiles
- Coal, talc, carbon black; water-based delivery systems for these basic materials into the paper, construction and fuel sectors

Our portfolio of non-ionic surfactants is extensive and can best be summarised by chemical group and the trade names associated:

- Fatty alcohol ethoxylates
- Castor-oil based ethoxylates
- Fatty acid ethoxylates
- EO-PO block copolymers (Poloxamers)
- Sorbitan(ol) ester ethoxylates
- Lanolin alcohol ethoxylates
- Polyol esters
- Lanolin alcohols

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Nonionics-Alkyl Aryl Poly Glycol Ethers Nonyl Phenl Condensates

Nonionic made from Alkyl Phenols & Ethylene Oxide have perhaps the most to offer in terms of all round performance. Excellent emulsification detergency and wetting power combined with moderate to low foams and very good chemical stability have made these products interesting in many applications. Another valuable characteristics which these products have in common with other Nonionic prepared from Ethylene Oxide is the case with which the solubility balance can be adjusted to the optimum value for a given use.

Trade Name	Active Content %	Physical Form	HLB Value	Solubility In Water	Properties & Uses	Field of Application
Griton - 105	100	Pale Yellow to Colourless Liquid	4.8	Insoluble	Emulsifier	Non-polar Hydrocarbons Solvent & Oil
Griton - 300	100	Pale Yellow to Colouriess Liquid	7.5	Insoluble	Defoamer	For Paper & Textile
					Emulsifier	Non-polar Hydrocarbon Solvent & Oil & Floor Polish
					Detergents	Dry Cleaning Solvent Emulsion Cleaners.
Griton - 405	100	Pale Yellow to Colouriess Liquid	9.5	Insoluble	Oil Soluble Surfactant Emulsifier	Natural Waxes, Mineral Oil, Emulsifiable Solvent for metal degreasing.
					Detergents	Intermediates for Sulphonation & Phosphocylation for making anionic products, Lubricants and antistatic agents.
Griton - 605	100	Pale Straw coloured Liquid	11.3	Missible	Emulsifier	Silicone and Mineral Oils, Waxes & Solvents.
					Detergents	Industrial cleaning & degreasing wool scourer.
Griton - 635	100	Pale Straw coloured Liquid	13.23	Very Soluble	Emulsifier	Textile pigment Emulsion, Mortar & Concrete Antistatics, Laequer water based paints, Textile scouring plasticier, Textile Auxiliaries.
					Detergents	Household & Industrial detergent, Industrial Cleaners.
Griton - 650	100	White waxy semi-solid	16	Very Soluble	Emulsifier	Fatty acid & Waxes Emulsion Polymerlsation, Pigment Emulsion.
					Detergents	Use at high temp. and electrolyte concentration.

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Nonionics-Alkyl Aryl Poly Glycol Ethers Octyl Phenol Condensates

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Trade Name	Active Content %	Physical Form	HLB Value	Solubility In Water	Properties & Uses	Field of Application
Griton -X- 150	100	Liquid	3.6	Insoluble	Defoumer	Paper, Textile.
Griton -X- 350	100	Liquid	7.8	Insoluble	Emulsifier,	Non-polar Hydrocarbons Solvent & Oil.
Griton -X- 450	100	Liquid	10.4	Insoluble	Emulsifier,	Emulsion Stabilizer in Oil system of the more hydrophobic compound.
					Detergent	Improve detergency of Organic Solvents in dry cleaning.
Griton -X- 100	100	Liquid	13.5	Soluble	Wetting agent Emulsifier	Emulsifier in aqueous system with aromatic solvents.
					Detergents General Surfactants	Textile, Paper & miscellaneous cleaners, solvents Emulsifiers.
Griton -X- 3050	70	Aqueos solution	17.3	Highly Soluble	Emulsifier	Emulsion Polymerisation, Agricultural-Emulsion Concentrate, Wettable Powder.

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Nonionics-Alkyl Aryl Poly Glycol Ethers Octyl Phenol Condensates

The reaction of ethylene oxide with Glyceride like Castor Oil, Coconut Oil is a complex mixture of some products. As the one of the raw material is a natural product, so it has low toxicity, low price and have a wide uses.

Product Name	Physical Form	Approx. Activity	H.L.B.	Properties & Uses
Castor Oil Ethoxilates :				
Griton P-5	Liquid	100%	3.8	Emulsifier, pigment dispersant for latex paints, coemulsifier for dye carrier systems.
Griton P-10	Liquid	100%	7.2	Emulsifier, pigment dispersant for latex paints, coemulsifier for dye carrier systems.
Griton P-15	Liquid	100%	8.7	Emulsifier, dispersant detergent, wetting defoamer & antistat
Griton P-30	Liquid	100%	11.7	Emulsifier & lubricants for fatty alcohol, good skin cleaner, pesticides formulations.
Griton P-40	Liquid	100%	13.0	Lubricant & softener for textile, coamulsifier for dye carrier systems. Emulsifier for various oil, fats and waxes useful as despersing agent for pigment in paint & universal colorant pesticides formulations.
Coconut Oil Ethoxilates :				
Griton PL-2	Liquid	100%	6.0	Oil solube w/o emulsifier for mineral oil, fatty acid and solvent industrial
Griton PL-5	Liquid	100%	9.8	Application including cutting oil, solvent cleaner, degreaser and pesticides formulations
Griton PL-9	Liquid	100%	12.8	Emulsifer & coemulsifier for various cosmetic & toilet preparation, defoamer & levellin agent for latex paints.
Griton PL-14	Liquid	100%	14.6	

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Nonionics-Alkyl Aryl Poly Glycol Ethers Octyl Phenol Condensates

The P.E.G. are a series of low to medium molecular weight polyther diol having primary hydroxyl group at each end All PEG are completely soluble in water, very low in toxidity, quite blend, non-irritating and posses wide compatibility good solvent action, good stability and good lubricity, etc. This unusual combination of properties has enabled them to find a very wide range of commercial applications in field of pharmaceuticals, Cosmetics, Paper, Textiles, Rubber, Ceramics, Wood processing, Packing and manufacturing of surfactant dispersant resin and plastics etc.

PEG derivatives like mono and diesters of fatty acids are widely used as emulsifiers and lubricants.

Product Name	Physical Form	Density at Temp. 20°C./20°C	Range of Molecular weight	Freezing Temp°C	Viscocity at 25°C CST	Viscocity at 98.9°C CST
PEG-200	Liquid	1.127	190-210	Super Cools	40	4.3
PEG-300	Liquid	1.127	285-315	-15 to -8	69	5.8
PEG-400	Liquid	1.128	380-420	4 to 8	90	7.3
PEG-600	Liquid	1.128	570-630	20 to 25	131	10.3
PEG-1000	Waxy Semi Solid	1.170	950-1050	37 to 41	—	17-19
PEG-1500	Solid	1.210	1300-1600	43 to 47	—	25-32
PEG-2000	Hard Waxy Solid	1.212	1900-2200	50 to 54	—	75-110
PEG-4000	Hard Waxy Solid	1.212	3400-4500	53 to 60	—	58-900
PEG-6000	Hard Waxy Solid	1.212	6000-8500	57 to 63	—	—

The formulation of PEG based ointments is carried out in the usual way. In fact, some drug/chemicals due to their solubility or better discernability in PEGs would produce more homogenous ointments.

Toxicological Characteristics :

As may be observed Table given below, polyethylene glycols possess toxicity characteristics of very low order.

		Sirgle Oral LD Rate, 50g/kg	Repeated Oral Feeding, Rals-Acceptable Level in Diet-Duration	Primary Skin Irritation Rabbits	Eye Injury Rabbits
Polyethylene Glycols	200	28.9 ml/kg	4% (2 Years)	None	Trace
	300	31.7 ml/kg	4% (90 Days)	None	Trace
	400	43.6 ml/kg	2% (2 Years)	None	Trace
	600	38.1 ml/kg	8% (90 Days)	None	Trace
	1000	42	8% (90 Days)	None	Trace
	1500	44.2	4% (90 Days)	None	Trace
	1540	51.2	4% (2 Years)	None	Trace
	4000	50	4% (2 Years)	None	Trace
	6000	50	16% (90 Days)	None	Trace

1. "The Chronic Oral Toxicology of the Polyethylene Glycols" by H.F. Smyth, Jr., C.P. Carpenter and CS. Well, The Journal of the American Pharmaceuticals Assen, Scientific Edition, Volume 44, No., pp, 27-30, Jan, 1955.

2. " The Toxicology of the Polyethylene Glycols" by H.F. Smyth Jr., C.P. Carpenters and C.S weill, The Journal of the American Pharmaceuticals Assen, Scientific Edition, Valume 39, No. 6, pp. 349-354, June, 1950.

Polyethylene glycol is also used for the manufacture of polyethylene glycol ministered which is used in emulsifiable ointment base as under noted :

PEG 4000 37.0 gm.
PEG 400 37.0 gm.
PEG 400 26.0 gm.

Suppository Bases

The properties of polyethylene glycols which make them useful as basis for ointments are of as much advantage in the manufacture of suppositories. The various grades of polyethylene glycols can be adjusted to produce suppositories of the required consistency, solubility, stability and melting point. The suppositories are made by casting or air compression and refrigeration may not be needed. The points to be kept in view while formulating the composition of suppositories are :

1. The properties of the drug-the drug may decrease/increase the melting point of the polyethylene glycols.

2. Storage period-higher melting polyglycols may have to be used for suppositories to be stored for longer duration.

3. Dissolution characteristics-whether slow or fast dissolution is need. Higher melting polyethylene glycols to increase the period.

Table

Suppository Bases*

Ingredients	**Parts ny weight**					
	1	2	3	4	5	6
PEG 600	–	–	–	–	–	50
1000	96	–	75	–	–	–
1540	–	94	–	–	70	30
4000	4	–	25	88	–	–
6000	–	–	–	–	–	–
1, 2, 6-Hexanetriol	–	6	–	–	30	–
Water	–	–	–	–	12	20

(* Reference
"Polyethylene Glycols as Suppository Bases:.
by AP. Collins, J.R Hohmann & L.C. Zopt,
Am. Prof. Pharma. Vol 23, No. 3, March, 1957 pp 321-4)

Pills & Tablets

Polyethylene glycols 4000 and 6000 are useful as lubricants and binders in the formulation of tablets. The adventage arising out of the use of polyethylene glycols are:

1. The powder can be granulated directly without addition of wter, thereby may be sensitive or unstable to water.

2. The dry mix or blend enables granulation of material which may be sensitive or unstable to water.

3. Dry conditions permit faster granulation.

The concentration of polyethylene glycol ranges from 2-15% depending upon the requirements.

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Polyethylene Glycol Esters

Fatty Acids are react with Polyethylene Glycols of Mole. weights to sparingly water soluble Emulsifier depends upon the molecular weights of Polyethylene Glycol used. Lower molecular weights or Polyethlene Glycol esters are miscible with water but insoluble in Paraffin Oil, Propylene Glycol and isopropyl Myristrate, Higher Mole wt of PEG Esters like PEG 1000 Monostearats, 1540 Monostearate are soluble in water, Propylene Gylcol and Isopropyl Alcohol

Product	Appearance	Acid Value max.	Saponification Vakue	Spec. gravity 25° C	Melting of freezing point°C approx.
PEG 200 monolaurate	Yellow Liquid	5.0	132-142	0.985	5
PEG 200 dilaurate	Yellow Liquid	10.0	176-186	0.951	9
PEG 200 monolaurate	Yellow to amber liquid	5.0	115-124	0.973	15
PEG 400 monolaurate	Yellow Liquid	5.0	86-95	1.028	12
PEG 400 dilaurate	Yellow Liquid	10.0	127-137	0.990	18
PEG 400 monolaurate	Yellow Paste	5.0	83-92		33
PEG 400 dilaurate	Yellow Wax	10.0	115-124		36
PEG 400 monolaurate	Yellow to amber liquid	5.0	89-89	1.013	10
PEG 400 dioleate	Yellow to amber liquid	10.0	113-122	0.977	7
PEG 600 monolaurate	Yellowish Wax	5.0	67-74	1.050	23
PEG 600 dilaurats	While to Yellow paste	10.0	108-112		24
PEG 600 disteaerate	While to Yellow paste	10.0	93-102		39
PEG 1000 monostearate	Cream Wax	5.0	40-48		41
PEG 6000 monostearate	Cream flakes	9.0	14-20		55

Polyethlene Glycols Esters aro mainly used as a Oil-in-Water Emulsifiers for various cosmetics Applictions. e.g. for cleaning Milk, Foam Bath, emollient and bloss improver in Lipsticks, As a Thickening Agent to replace hydrocolloids, Bodying Agent etc.

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FATTY ACID ESTERS

The surfactant prepared from fatty acid and ethylene oxide have not only momoesters but also diester and polyethylene Glycol. They are superior than esterified product of polyethylene Glycol & fatty acid, because they have free acid, less polyethylene glycol & other impurities.

They are susptible to acid & alkaline hydrolysis. so their uses are limited to close neutral PH.

	Approx Activity	Physical Foram	H.L.B.	Properties & Uses
CLEIC ACID				
Apriton OAL-60	100	Pale Yellow Liquid	9.8	Oil solublem w/o emulsifier for degreaser posticides formulation, lunts, softener & detergsnts etc.
Apriton OAL-100	100	Pale Yellow Liquid	10.0	
Apriton OAL-140	100	Pale Yellow Liquid	13.5	Emulsifier for mineral oil & cutting oil, pesticides formulation, etc. dyeing assistant
STERAIC ACID				
Apriton SAL-60	**100**	Semi Solid	9.6	Dyeing assistant, nonionic softner emulsifier for w/o.
Apriton SAL-130	**100**	Solid	13.6	Defoamer & levelling agent for letex paint pigment dispersant & dye levelling agent.
Apriton SAL-400	**100**	Solid	16.9	Co-emulsifier for cosmetics, pharmaceuticals & silicone preparation. Antigellant in fluid textile softeners, starch solution & sizing

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GRITON CS 1000

GRITON CS 1000 is MARCOGOL ETHERS widely used in the preparation of oil-in water emulsions and as wetting and solubilising agents and particularly as emulsifying wax.

SPECIFICATIONS:

Appearance	Cream coloured waxy solid, almost odourless when heated it melts to clear yellowish liquid.
Chemicals Formula	Polyethyleno Glycol monocetyl ether $Ch_3 (CH_2)_m (O.CH_2 CH_2)_n OH$ Where $_m$ May be 15 or 17 and $_n$ may be 20 to 24
M.P.	Not lower than 38^0 C
Solubility	(a) Soluble in water, Acetone and alcohol or dilution with water at 60-100^0 C gives a very clear solution. (b) Practically insoluble in light petroleum.
Compatibility	Incompatible with phenol and reduces the antibactial activity of quartenery ammonium compounds griton CS 1000 may separate from solutions in the presence of a high conc. electrolytes.
Applications	Griton CS 1000 is used in the preparations of cetomacrogol emulslfying wax, which can be employed for making oil-in-water emulsions that are unaffected by moderate concentrations electrolytes and are stable over a wide ph range griton CS 1000 is used to disperse volatile oils in water to form transperant solutions. Griton CS 1000 is widely used an emulsifier and despersing agent for the for mulation of pharmaceutical and cosmetics creams or ointment formulation. Grition CS 1000 is very useful in the preparations of paraftin oils, petroleum waxes.

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EXAMPLES AND RECOMMENDATIONS for some medicated emulsions/creams using Griton CS 1000 are given in table I as under

Table - I Use of Griton CS 1000 for the preparations of pharmaceuticals and cosmetics creams

1. CALAMINE LIMIMENT	
Calamine	3.5
Lansine	2.5
Olive oil	2.0
Water	71.5
Griton CS 1000	2.5

2. CALAMINE SOLUTION	
Calamine	42.0
Liquid paraffin	37.5
Griton CS 1000	3.1
Water	62.1
Zinc Oxide	3.1

3. INSECT REPELLENT	
Dimethyl Phthalate	10.0
Oleic Acid	2.7
Griton CS 1000	0.5
Water	10.0

4. METHYL SALICYLATE	
Methyl Salicylate	12.5
Petroleum Jelly	10.0
Griton CS 1000	5.0
Water	72.5

5. METHYL SALICYLATE	
Methyl Salicylate	10.0
Liquid Paraffin	10.0
Water	15.0
Griton CS 1000	65.0

6. MENTHOL & METHYL SALICYLATE	
Methyl Salicylate	10.0
Menthol	10.0
Liquid Paraffin	10.0
Griton CS 1000	15.0
Water	55.0

7. COLD CREAM	
Liquid Paraffin	30.0
Beeswax	10.0
Griton CS 1000	15.0
Water	60.0

8. CLEANING CREAM	
Paraffin Wax	2.0
White Petroleum Jelly	9.0
Mineral Oil	8.0
Glycerine	4.0
Griton CS 1000	12.0
Water	65.0

9. FOUNDATION CREAM	
Liquid Paraffin	3.5
Glycerol	8.5
Griton CS 1000	13.5
Water	75.0

10. Vanishing Cream	
Liquid Paraffin	10.0
Water	70.0
Griton CS 1000	10.0

All the above information given is on the basls of our best knowledge and as per our laboratory trials and is for guldance only. However no warranty is given freedom from patent or other rights interferred.

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GRISPAN

Grispans are nonionic surfactant containing few hydrophilic group having polar character and are non -water soluble in oxygenated, aromatic & halogenated solvents and sometime in mineral oils. They have powerful emulsifying property making w/o emulslon.

Mostly these oil soluble emulsifying egents are the fatty acid ester of polyhydric alcohol or of ether alcohol. Thus the sorbitant fatty acid esters are derived from sorbitol and fatty acid the products are based upon processed natural products, so they have no toxic and irrigating effect upon skin. thus they are suitable emulsifier for cosmetic & pharmace-materials, so that the incompatible materials can be mixed easily in to a stable ointment cream lotion etc. e g. suppositories. vitamins, syrups, etc.

Product	Chemical Name	Physical Form	HLB No.	Acid No.	SAP Value	Hydroxyls Value
1	2	3	4	5	6	7
GRISPAN-20	Sorbitan Mono Laurate	Liquid	8.6	7 Max	158-170	310-350
GRISPAN-40	Sorbitan Mono Palmitate	Solid	6.7	7 Max	140-150	230-270
GRISPAN-60	Sorbitan Mono Stearate	Solid	4.7	10 Max	145-155	235-260
GRISPAN-80	Sorbitan Mono Oleate	Liquid	4.3	6 Max	140-160	190-209

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GRIWEEN

Griweens are also nonionic hydrophilic surfactants but are soluble or dispersible in water and in dilute solution of eletrolytes.

The products are manufactured by ethoxylation of monoester of sorbation. The solubility of griween in aqueuos solution incrases with degree of ethoxylation these surfactants display the outstanding emulsification properties for both oil in water water in oil systems, so they are suitable as an emulsifier for textile finishing. cosmetics cream ointment formulations, perfume, essence oils industrial & industrial cleaners. metal processing and household products. they have also antistatic watting & solubilizing properties to extend the utility of these products for a special application they are also nontoxic and non-irritating products.

Product	Chemical Name	Physical Form	HLB No.	Acid No.	SAP Value	Hydroxyls Value
1	2	3	4	5	6	7
GRIWEEN-20	Polyoxyethylene Sorbitan Monolaurate	Liquid	16.7	2 Max	40-50	96-108
GRIWEEN-40	Polyoxyethylene Sorbitan Monolaurate	Liquid	15.6	2 Max	40-52	89-105
GRIWEEN-60	Polyoxyethylene Sorbitan Monolaurate	Liquid	14.9	2 Max	45-55	95-108
GRIWEEN-80	Polyoxyethylene Sorbitan Monolaurate	Liquid	15.0	2 Max	45-55	81-96

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GLYCEROL ESTERS

Glycerol esters are reaction products of glycerine and fatty acid esters.

These are dispersible in water, soluble in ethyl alcohol, fats and paraffin oils. These are non ionic emulsifiers with thickening properties.

Product	Appearance	Acid Value Tax	Saponification Value Appr.	Iodine Value Max	Melting Range°C
Glycerol Monolaurate	White Cream Flakes	3.0	2.5	1.0	42-43
Glycerol Monolaurate (Pure)	White Flakes	3.0	173	0.5	56.58
Glycerol Monolaurate (SE)	White Creamy Wax	36.0	155	1.0	58-63
Glycerol Monolaurate (S.E. Acid Stable)	White Flakes	2.0	155	1.0	60.62
Glycerol Monooleate	Cream Liquid	3.0	165	77	–

APPLICATIONS :

Glycerol esters are mainly ueconsistency regulators and bodyfying agents in creams, ointments, liquid emulsions in conjuctins with emulsifiers.

Glycerol monostearate is competiable with diluted acids (e.g. acetic acid, chloride etc.) Glycerol monostearate has proved satisfactory in the production of pharmaceutical suppository compounds as emulsifier and thickness in water-in-oil emulsifiers.

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Ethylene glycol monostearate is recommended as a turbidity agent with upto 3% in the finished product. Ethylene glycol disterate is recommended to active pearl effect in shampoo (approx 2% is recommended). This product has slightly better stabilizing properties compared with EGMS.

Diethylene glycol mono stearate and diethylene glycol stearate S.E. are used as bodying agent in soft-oil-in-water emulsion, emollient in soaps, otherwise like EGMS, self emulsifiying base together with soaps, fatty alcohols, etc.

Propylene glycol monostearate is used as a solubilise for EOS is dyes in lipstick as well as bodying agent in emulsions, consistency regulator for aerosol foams. As emollient in pre-after shave and suntan lotions.

Diethylene glycol monestearate is used as an emulsifier in water-in-oil creams combined with other emulsifiers. it is also used as glossing component in lipsticks, make-up and foundations etc.

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ALKANDOLAMIDE CONDENSATE

The alkanol amide condensates are complex mixture of about at least six different constituents. These products are readily water soluble or dispersible depend upon the fatty acid and free amine in the product. The super amide contain more than 90% fatty amide are water dispersible but possess many properties similar toalkanol amide. These surfactants have good wetting dispersing, emulsifying & solubilizing properties and also have less corrosive, low toxic etc.

	Approx Activity	Appearance Physical Form		Acid Number	Properties & Uses
COCONUT:					
Diethanol Amide	85	Yellow Liquid	Water Soluble	1.5	Detergent, a base for floor cleaners & general purpose cleaner, foam stabilizers for liquid detergents.
Super Coconut Diethanol Amide	91-93	Yellow Liquid	Water Missible	2.0	Low free amine low odour & colour foam stabilizer in shampoos, and household detergents. Detergent for dry cleaning.
Stearic Diethanol Amide	85	Waxy Solid	Water Soluble	2.0	Thickness, viscoslty buiilder for kerosene, mineral oil.
Oleic Diethanol Amide	85	Light Brown Liquid	Water Soluble	2.0	Thickening agent for hair colour, emulsifier for aliphatic hydrocarbons, mineral oil, paraffin waxes, waterless,lotion,etc.
Coco Mono Amide	93%	Yellowish Waxy Flakes	Water Missible	4.0	Foam booster & stabiliser thickness for shampoos and bubble baths skin protection additive & solubiliser.

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FATTY ALCOHOL ETHER SULPHATES

Fatty Alcohol Ether Sulphanates are reaction products of various Fatty Alcohols and Ethylene Oxide and Sulphanation Process. These products are outstanding Toiletry raw material facilitates the manufacture of high quality Shampoos, Bubble & Foam Bath Formulation Continuos optimum performance with excellent solubility.

Product	Appearance	Unsulphated Matter %	PH. Aqu. Sol.	Active Matter %
APRON L 20	Clear Yellowish Liquid	0.5	7	30 ± 2%
APRON L 30	Clear Yellowish Liquid	0.5	7	30 ± 2%
APRON L 25	Clear Yellowish Liquid	0.5	7	30 ± 2%
APRON L 200	Free Flowing Paste	1.5	8	70 ± 2%
APRON L 300	Free Flowing Paste	1.5	8	70 ± 2%
APRON L 250	Free Flowing Paste	1.5	8	70 ± 2%

The apron-lauryl ethoxylates are versatile raw materials extensively used in the formulation of high quality liquid lotion and pearly shampoos and foam bath preperations.

The advantage of using these products in the formulations of toiletry prepartions are as follows :

- They generate an immediate profuse and stable foam.
- They produce formulations whose vioscosities can be easily adjusted over a wide range by the controlled addition of small amount of sodium chloride.
- Those products are colourless and consequently derived formulations can normally be dyed to most colour requirements pastel shades.
- They are relatively mild to the skin.
- They display excellent solubility characteristics.

Product World of Kaiser

SIZING / DESIZING AGENTS-WETTING AGENTS-DETERGENTS-DYEING / PRINTING ASSISTANTS-ANIONIC/NON-IONIC WETTING AGENTS & DETERGENTS-ANTI-FOAMING/DEFOAMING AGENTS-CHELATING AND SEQUESTERING AGENTS-SCOURING / KIER BOILING AGENTS - SPIN BATH ADDITIVES - SPIN FINISHES-CATIONIC ANTI-STRIPPING-AGENTS FOR BITUMEN-EMULSIFIERS-DISPERSING AGENTS-CORROSION INHIBITORS & ANTIFOULING AGENTS-DEMULSIFIERS-PRESERVATIVES-ANTISTATIC AGENTS-WAX EMULSION-TANNING AGENTS-SULPHONATED PRODUCTS-SOFTENING AGENTS-BATCHING OILS-PITCH / RESIN REDUCING AUXILIARIES-GUMS-PLUS SEVERAL OTHER AUXILIARIES PREPARED TO CLIENTS' SPECIFICATIONS FOR THE FOLLOWING INDUSTRIES.

- Textiles (Cotton, Blends with Synthetics, Woollens, Rayon, Nylon and others Man-Made Fibers)
- Road Construction
- Pesticidal Industry
- Petroleum Refineries / Petrochemical Complexes
- Oil Well Drilling
- Paints
- Plastic Industry
- Paper Industry
- Leather Industry
- Jute Industry
- Laundry Industry
- Rubber Industry
- Soaps and Detergents
- Fertiliser Industry
- Pharmaceuticals
- Cosmetics
- Dairy Industry
- Dyes and Pigments

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