

EXCEPARL®

LMC

**THICKENING ABILITY
RHEOLOGY MODIFIER
VISCOSITY STABILISER
EO-FREE**

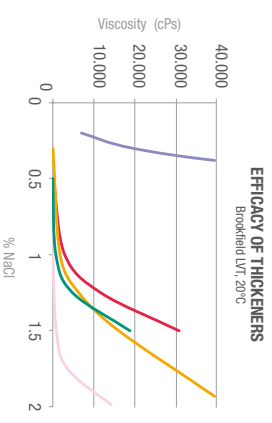
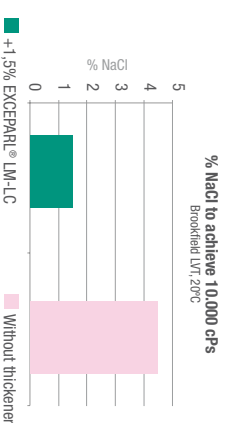
**A NATURAL LIQUID EO-FREE
THICKENER DERIVED FROM
RENEWABLE SOURCES**

THE TECHNOLOGY OF KAO'S SURFACTANTS APPLIED TO PERSONAL CARE





THICKENING ABILITY



REFORTIFYING SHAMPOO

	%
EMAL® 270D Sodium Laureth Sulfate	14.3
AKYPO® SOFT 100 BVC Sodium Laureth-11 Carboxylate	5.7
BETADET® S-20 Lauryl Hydroxysulfate	5.0
LEVENOL® H&B Glycereth-2 Cocate	2.0
EXCEPARL® LM-LC Lauryl Lactate	1.5
Hair Loss Prevention	2.0
Hydrolysed Pea Protein	2.0
Preservative	q.s.
NaCl	0.50
Water	Up to 100
Appearance	Clear
pH (100%)	≈ 5.5
Viscosity at 20°C (cP's)	≈ 6500

MAIN FEATURES

Today's personal care market shows an increasing trend towards green and natural-based concepts and formulations.

These cosmetic products feature an interesting "free from" trend, and are preferably free from preservatives, sulfates, PEG-derivatives and silicones, among other additives or ingredients. The consumer tends to associate more skin compatibility, safety and general eco-friendliness with the absence of these ingredients.

EXCEPARL® LM-LC is a 100% active, biodegradable, clear, odourless and colourless liquid which is easy to handle and can be processed at room temperature. Additionally, EXCEPARL® LM-LC is a mild product with some emollient and conditioning properties for skin and hair due to its hydrophobic characteristics, and with no detrimental effect on the foaming behaviour of the formulations. Due to its chemical nature, EXCEPARL® LM-LC is a good choice for many PEG- and/or Sulfate-free rinse-off formulations.

Following this trend, Kao Chemicals Europe has developed EXCEPARL® LM-LC (INCI: Lauryl Lactate), a new natural liquid thickener derived from renewable sources, which additionally shows viscosity stabilising properties in surfactant-based formulations. This natural ester, obtained through a reaction of fatty alcohol and lactic acid, has the advantage of being nitrogen-, salt- and PEG-free.

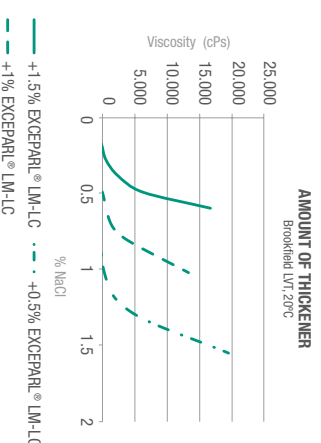


- **Liquid**
- **Biodegradable**
- **Vegetable Origin**
- **Mild & Safe Product**
- **High Concentration**
- **PEG-, Nitrogen- & Salt-Free**
- **Solvent-Free**
- **Colourless and Odourless**



%NaCl	EXCEPARL® LM-LC	Cocamide DEA	PEG-150 Distearate	Laureth-4
0.5	351	liquid	1240	liquid
1.0	545	liquid	1505	liquid
1.5	811	-	1655	-
3.0	2190	liquid	2404	liquid
5.0	4999	-	3409	-
Appearance	clear	clear	turbid	clear

* THICKENER: viscosity at 20°C (cPs)



	%
SUCCIDET® S-30 UK Disodium Laureth Sulfosuccinate	16.6
BETADET® S-20 Lauryl Hydroxysulfate	14.0
BETADET® HR Cocamidopropyl Betaine	10.0
THICKENER *	2.0
Aloe vera gel	0.5
Preservative	q.s.
Water	Up to 100
pH (100%)	≈ 7.0

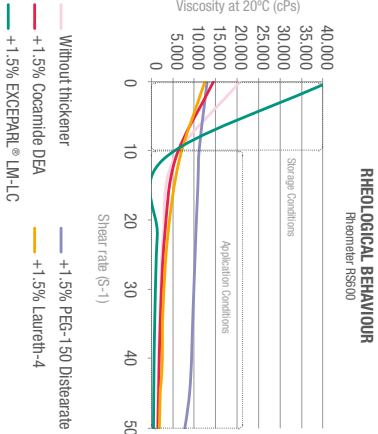
SHOWER GEL



MAIN PROPERTIES

RHEOLOGY

EXCEPARL® LM-LC, being a hydrophobic thickener, provides a shear thinning flow behaviour, which means that the viscosity decreases with increasing shear rate. Dispersed particles, like pearlisng agents or some anti-dandruff additives like Zinc Pyrithione, tend to separate in a surfactant's mixture. The use of EXCEPARL® LM-LC improves stabilisation against sedimentation during storage conditions, and has a positive effect on pumping and application, which is well appreciated by consumers.



Bet. C-211
SHAMPOO ANTI-DANDRUFF %

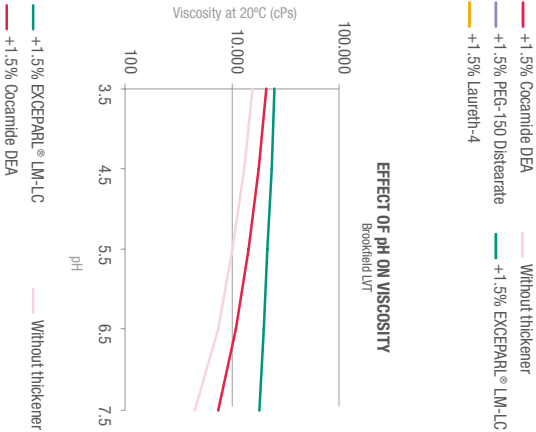
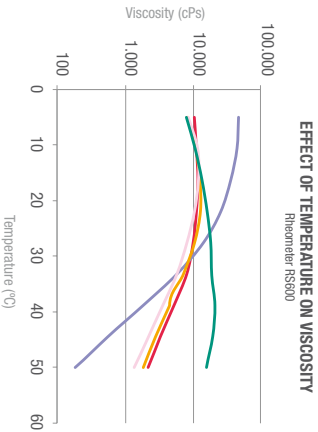
EMAL® 270D Sodium Laureth Sulfate	14.0
AKYPO® FOAM RL 40 Sodium Laureth-5 Carboxylate	5.0
DANOXY® PL-10 Pearlizing Agent	4.0
LEVENOL® H&B Glycerin-2 Cocotate	2.5
EXCEPARL® LM-LC Lauryl Lactate	1.5
TETRAMYL® U	0.5
Zinc Pyrithione	2.0
Dimethicone 350cst	0.5
Jaguar C-162	0.1
EDTA Na₄	0.2
Ulcane LR400	0.2
Dye(s)	q.s.
Preservative	q.s.
NaCl	q.s.
Water	Up to 100
Appearance	Blue viscous gel
pH (100%)	6.5
Viscosity at 20°C (cPs)	≈ 30000

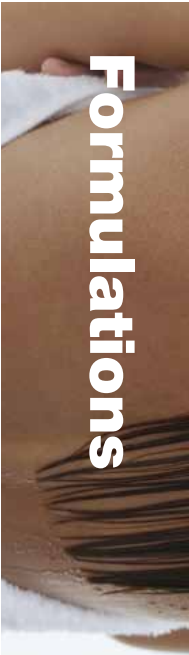
VISCOSITY STABILISER

In addition to the rheological behaviour, formulations thickened with EXCEPARL® LM-LC show better viscosity stability in a wide range of pH and temperatures than when other thickeners are used. The viscosity remains almost the same over a wide range of pH and temperatures, which is an advantage when dispersed particles are present in the formulation.

Bet. C-245
CONDITIONING SHAMPOO %

EMAL® 270D Sodium Laureth Sulfate	16.2
BETADET® S-20 Lauryl Hydroxysulfate	3.4
AKYPO® RLM 45CA Laureth-6 Carboxylic Acid	1.7
EXCEPARL® LM-LC Lauryl Lactate	1.5
Hydroxypropyl Guar	0.3
Hydroxypropyltrimonium Chloride	0.2
Tocopheryl Acetate	q.s.
Preservative	q.s.
Water	Up to 100
Appearance	Clear
pH (100%)	≈ 5.5
Viscosity at 20°C (cPs)	≈ 3000





Formulations

SLES-FREE FORMULATIONS

Ref. C-246
SHOWER GEL %

ALFANDY® 46 Sodium Cl-4-16 Olein Sulfonate	27.0
BETADE® S-20 Lauryl hydroxysulfate	10.5
EXCEPARL® LM-LC Lauryl Lactate	0.95
Preservative	q.s.
Water	Up to 100
Appearance	Clear
pH (100%)	≈ 5.0
Viscosity at 20°C (cP's)	≈ 8000

Ref. C-228
BABY SHAMPOO %

OXIDET® L-75C Cocamidopropylamine Oxide	25.0
AKYPO® RLM 45CA Laureth-6-Carboxylic Acid	7.9
AMIDET® N PEG-4 Rapeseedamide	5.0
EXCEPARL® LM-LC Lauryl Lactate	0.3
Tocopheryl Acetate	0.2
Preservative	q.s.
Water	Up to 100
Appearance	Clear
pH (100%)	≈ 6.0
Viscosity at 20°C (cP's)	≈ 3000

Ref. C-229
INTIMATE HYGIENE %

BETADE® HR Cocamidopropyl Betaine	18.3
AMIDET® N PEG-4 Rapeseedamide	5.3
AKYPO® SOFT 100 BVC Sodium Laureth-11 Carboxylate	4.3
EXCEPARL® LM-LC Lauryl Lactate	0.6
Chamomile Extract	0.25
Preservative	0.05
Water	Up to 100
Appearance	Clear
pH (100%)	≈ 5.0
Viscosity at 20°C (cP's)	≈ 4000

Ref. C-247
STRENGTHENING SHAMPOO %

BETADE® HR Cocamido propyl Betaine	16.3
AKYPO® FOAM RL 40 Sodium Laureth-5 Carboxylate	13.3
BETADE® THC-2 Disodium Cocamidopropylacetate	12
EXCEPARL® LM-LC Lauryl Lactate	2
Triton® C6-50 Decyl Glucoside	7.5
NaCl	0.5
Panthenol 50%	0.4
Keratin	0.2
Preservative	q.s.
Water	Up to 100
Appearance	Clear yellowish
pH (100%)	≈ 5.5
Viscosity at 20°C (cP's)	≈ 1800

EXCEPARL® LM-LC is a natural, "green" thickener, suitable as a raw material for personal cleansing products. Some formulation guidelines are provided to show the benefits of using EXCEPARL® LM-LC in different mixtures of surfactants. These formulations have been developed with different final applications

EO-FREE FORMULATIONS

Ref. C-248
ULTRA MILD SKIN CLEANSER %

BETADE® HR® Cocamidopropyl Betaine	16.3
BETADE® THC-2 Disodium Cocamidopropylacetate	12
EXCEPARL® LM-LC Lauryl Lactate	1.9
Triton® C6-50 Decyl Glucoside	7.5
NaCl	0.5
Exfoliative	0.2
Preservative	q.s.
Water	Up to 100
Appearance	Clear yellowish
pH (100%)	≈ 6.0
Viscosity at 20°C (cP's)	≈ 2500

Ref. C-249
FRESH FACE CLEANSER %

OXIDET® L-75C Cocamidopropylamine Oxide	10.5
BETADE® HR Cocamidopropyl Betaine	8.3
EXCEPARL® LM-LC Lauryl Lactate	1.5
GLC® 99% Glycerin	2.0
Aloe Vera	0.5
NaCl	0.05
Preservative	q.s.
Water	Up to 100
Appearance	Clear colourless
pH (100%)	≈ 5.6
Viscosity at 20°C (cP's)	≈ 2800

and end users in mind. In all cases, EXCEPARL® LM-LC performs as a thickening agent with viscosity stabilising properties. The use percentage depends on the composition and on the viscosity level desired for the final consumer product. It can vary from 0.3% up to 3% approximately.

Ref. C-232
SHOWER GEL %

BETADE® S20 Lauryl hydroxysulfate	14.0
BETADE® HR® Cocamidopropyl Betaine	10.0
GLC® 99% Glycerin	2.0
EXCEPARL® LM-LC Lauryl Lactate	1.0
Hostapur® SG Sodium N-Dodecyl Glycine	16.6
Merquat® 550 Polyquaternium-7	0.3
Preservative	q.s.
Water	Up to 100
Appearance	Hazy gel
pH (100%)	≈ 6.5
Viscosity at 20°C (cP's)	≈ 6300



KAO CHEMICALS EUROPE

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in harmony with nature.

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