



Diamond
Diamond Overseas Trading Co

DISHWASHING LIQUID FORMULATIONS BY KAO



Kao Corporation, S.A.

Member of Kao Chemicals Europe

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KCE REFERENCE : D-175

COST-EFFECTIVE WASHING UP LIQUID (15%)

DESCRIPTION

- ↘ Cost-effective hand dishwashing formulation
- ↘ It has a unique ternary surfactant system designed to obtain the maximum possible effectiveness
- ↘ Designed with the ecological LEVENOL® chemistry

COMPOSITION

	%
EMAL [®] 227 E ⁽¹⁾	33.3
BETADET [®] HR ⁽²⁾	15.0
LEVENOL [®] F-200	1.5
Sodium Chloride	0.4
Citric Acid (50%)	e.q.
Preservative	e.q.
Colorant	e.q.
Deionised Water	Up to 100%

(1) 33.3% of EMAL[®] 227E can be replaced by 32.1% of EMAL[®] 228HP or by 12.8% approx. of EMAL[®] 270D or EMAL[®] 270E.

(2) 15.0% of BETADET[®] HR can be replaced by 11.3% of BETADET[®] HR-50K.

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
ACTIVE MATTER (%) :	≈ 15	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 700	KCSA-227
pH (as it is) :	7.0-7.5	KCSA-014



KCE REFERENCE : D-175

RECOMMENDED OPERATIVE METHOD

- ↘ Add EMAL[®] 227E, LEVENOL[®] F-200 and BETADET[®] HR and an approximate 90% of the total water amount and stir until a complete homogeneous mixture is obtained.
- ↘ Continue with the addition of the rest of water and enough quantity of Citric Acid (50%) in order to neutralize.
- ↘ Add NaCl to thicken the product and stir until homogenize all the mixture.
- ↘ Finally, unload the product.

COMPONENTS

EMAL[®] 227E (Sodium Laureth Sulfate, ₂₀ 27% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

LEVENOL[®] F-200 (Glycereth-6 Cocoate, ₂₀ 100% a.m.): non-ionic character. Mild surfactant that decreases the irritation level of anionic surfactants, increasing performance and dispersion of the dirt. Medium foaming and thickening surfactant. Eco-toxicologically friendly. It doesn't need any risk sentences or warnings on its label.

BETADET[®] HR (Cocamidopropyl Betaine, ₂₀ 30% a.m.): amphoteric character. Foaming and detergent surfactant. It decreases the irritation of anionic surfactants on the skin. Additional thickening effect.

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KCE REFERENCE : D-167

DESINFECTING WASHING UP LIQUID

DESCRIPTION

- γλ Very well balanced formulation to obtain an outstanding performance
- γλ Disinfecting effect
- γλ Very good foaming product thanks to EMANON[®] XLF

COMPOSITION

	%
EMAL [®] 270 D	21.4
OXIDET [®] L-75C	22.7
EMANON [®] XLF	2.5
MELIOSOL CU-40	3.0
TETRANYL [®] BC-80	1.3
Ethanol (96%)	2.0
Citric Acid (50%)	0.5
Preservative	e.q.
Colorant	e.q.
Deionised Water	Up to 100%

(1) 21.4% of EMAL[®] 270D can be replaced by 53.5% of EMAL[®] 228HP or by 55.5% approx. of EMAL[®] 227E.

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
DRY MATTER (%) :	≈ 26	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 1300	KCSA-227
pH (as it is) :	≈ 7	KCSA-014

RECOMMENDED OPERATIVE METHOD

KCE REFERENCE: D-167

- Weight ALL components except TETRANYL® BC-80 and stir (around 200-300 rpm).
- Add TETRANYL® BC-80 (also TETRANYL® BC-50 can be used, adjusting the %product required). TETRANYL® BC-80 has 80% dry matter and BC-50 has 50% dry matter.
- Adjust final pH.
- Adjust final water content to 100%.

COMPONENTS

EMAL[®] 270D (Sodium Laureth Sulfate, 70% a.m.): anionic character. Primary surfactant, highly foaming. Good detergent properties.

EMANO[®] N XLF (Glycereth-7 Caprylate/Caprata, 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

MELIOSO[®] L CU-40 (Sodium Cumenesulfonate, 40% a.m.): anionic character. Hydrotrope component. It improves the solubility and the cloud point of the formula. In this kind of formula containing phosphoric or citric acids, MELIOSOL[®] CU-40 acts as a viscosity modifier.

OXIDE[®] T L-75 C (Cocamidopropylamine Oxide, 33% a.m.): cationic/non-ionic character (depending on the pH).

Secondary surfactant. It increases the foam volume and improves the quality of it. It also acts as a thickener. Its addition reduces the surface tension and therefore improves the detergency of the formula.

TETRANYL[®] BC-80 (Benzalkonium Chloride, 80% a.m.): cationic character. Disinfecting effect

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KCE REFERENCE : D-036

WASHING-UP LIQUID

First Price

DESCRIPTION

- ☺ First price hand washing-up liquid
- ☺ Easy process at room temperature
- ☺ Low concentration

COMPOSITION

	%
DANOX™ LVC-200	15.0
NaCl	e.q. (viscosity adjust, 1.5% approx.)
Citric Acid (50%) or NaOH (10%)	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q.
Preservative	e.q.
Dye(s)	e.q.
Deionized Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Viscous Liquid	KCSA-258
COLOUR :	Usually green or yellow	KCSA-258
ODOUR :	Usually pine or citric	KCSA-267
pH (as it is) :	6.0 – 7.0	KCSA-014
VISCOSITY (cPs, 20°C) :	~ 600	KCSA-227
DRY MATTER (%) :	~ 10	KCSA-092
STABILITY :	Correct	1month at 40°C/RT/5°C

KCE REFERENCE : D-036

RECOMMENDED OPERATIVE METHOD

- ☺ Add DANOX[®] LVC-200 to the deionized water.
- ☺ Stir during 15 min approx.
- ☺ Continue adding fragrance, and stir till complete transparency.
- ☺ Adjust pH using diluted sodium hydroxide (or diluted citric acid if needed to decrease pH).
- ☺ Adjust viscosity with NaCl.
- ☺ Adjust weight (100%) with water and homogenise.
- ☺ Product can be poured away.

COMMENTS

- ☺ During the process it is recommended to avoid air incorporation.
- ☺ Fragrances usually need between 15 and 20 minutes to be solubilized.
- ☺ Before unloading, it is important to check final specifications in a representative sample.

COMPONENTS

DANOX[®] LVC-200 (concentrated mixture of surfactants, ~1 65% a.m.): anionic and non-ionic character. Concentrated detergent, with degreasing and emulsifying properties, specially designed to prepare washing-up liquids for hand wash by dilution in water. It can be also applied for preparing hard surface cleaners.

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KCE REFERENCE :

D-064

WASHING-UP LIQUID

First Price

DESCRIPTION

- ⌘ First price hand washing-up liquid
- ⌘ Easy process at room temperature
- ⌘ Low concentration

COMPOSITION

	%
DANOX ~ LVC-300	15.0
NaCl	e.q. (viscosity adjust , ≈ 1.5%)
Citric Acid 50% or NaOH 10%	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q.
Preservative	e.q.
Dye(s)	e.q.
Deionized Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Viscous Liquid	KCSA-258
pH (as it is):	8.0 – 8.5	KCSA-014
VISCOSITY (cPs, 20°C) :	≈ 700	KCSA-227
DRY MATTER (%) :	≈ 10	KCSA-092
STABILITY TEST :	Correct	1 month 40°C/RT/5°C



KCE REFERENCE : D-064

RECOMMENDED OPERATIVE METHOD

- ↘ Add DANOX[®] LVC-300 to the deionized water
- ↘ Continue adding fragrance, and stir till complete transparency.
- ↘ Adjust pH using diluted sodium hydroxide
- ↘ Adjust weight (100%) with water and homogenize. Product can be poured away.

COMPONENTS

DANOX[®] LVC-300 (concentrated blend, 60% a.m.) : anionic character. Primary surfactant, highly foaming and detergent.

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KCE REFERENCE : D-048

WASHING-UP LIQUID

40 % active

DESCRIPTION

- ☛ Concentrated hand washing-up liquid
- ☛ High performance product, mild to the skin
- ☛ Very good grease remover
- ☛ Process at room temperature

COMPOSITION

	%
EMAL™ 227E *	39.0
ALFANOX™ 46	25.0
SULFONAX™	16.0
AMIDET™ B-112	3.0
UREA 99%	1.5
Ethyl Alcohol (EtOH)	c.s (viscosity adjust, ~16%)
Fragrance	q.s.
Dye(s)	q.s.
Preservative	q.s.
Deionized Water	Up to 100%

* 39% of EMAL™ 227E (26.5% a.m.) can be substituted by 14.8% of EMAL™ 270E (70% a.m.)

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C, cPs) :	300 – 600	KCSA-227
DRY MATTER (%) :	~1 40	KCSA-092
CLOUD POINT (°C) :	~1 - 4	KCSA-246

KCE REFERENCE : D-048

RECOMMENDED OPERATIVE METHOD

- ☺ Mix the deionized water with EMAL™ 227E and stir till complete homogenization.
- ☺ Add EtOH and stir.
- ☺ Add ALFANOX™ 46 and stir till completely homogenized.
- ☺ Add AMIDET™ B-112 and stir till completely transparent.
- ☺ Add the 90% of NaOH at 50%.
- ☺ Add SULFONAX™ and homogenize till completely transparent.
- ☺ Add the other additives: preservative, perfume, dye (water diluted),...
- ☺ Adjust pH with 50% of NaOH or citric acid if necessary.

COMPONENTS

ALFANOX™ 46 (α - olefin sulphonate, 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

AMIDET™ B-112 (cocamide DEA, 100% approx. d.m.): non-ionic character. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. It acts as a viscosity modifier allowing to reduce the quantity of added NaCl.

EMAL™ 227 E (sodium alkyl ether sulphate, 27% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

SULFONAX™ (dodecyl benzene sulfonic acid, 94% a.m.): anionic character. Primary surfactant, highly foaming . Good detergent properties.

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KCE REFERENCE : D-041

WASHING-UP LIQUID 20% active – pearled

DESCRIPTION

- ↯ Pearled, hand washing-up liquid
- ↯ High performance product, mild to the skin
- ↯ Ecological and biodegradable product

COMPOSITION

COMPOSITION	%
ALFANOX~ 46	14.0
EMAL~ 270D ⁽¹⁾	11.4
BETADET~ HR	6.0
AMIDET~ B-112	1.5
DANOX~ P-15	1.5
NaCl	e.q (viscosity adjust, <1.8%)
Citric Acid 50% or NaOH 10%	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

(1) 11.4% of EMAL~ 270D (70% a.m.) can be substituted by 30% of EMAL~ 227E (27% a.m.)

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	White Pearled Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C,cPs) :	≈ 1.400	KCSA-227
DRY MATTER (%) :	≈ 20	KCSA-092
IRRITATION (1% active) :	Non Irritant (145)	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C



KCE REFERENCE : D-041

RECOMMENDED OPERATIVE METHOD

- ↘ Add EMAL[°] 227E to the deionised water.
- ↘ Continue adding ALFANOX[°] 46, and stir.
- ↘ Continue with the addition of AMIDET[°] B-112 and BETADET[°] HR. Stir till complete transparency after each addition.
- ↘ Add pearling agent DANOX[°] P-15 and homogenise for 15 minutes.
- ↘ Continue adding the additives: preservative, fragrance, dye(s) (better diluted in water),...
- ↘ Adjust pH using diluted citric acid or sodium hydroxide.
- ↘ Adjust desired viscosity adding sodium chloride.
- ↘ Product can be poured away.

COMMENTS

- ↘ Viscosity can be modified adding different quantities of NaCl or can be reduced using EtOH.

COMPONENTS

ALFANOX[°] 46 (↘ - Olefin Sulphonate, 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

AMIDET[°] B-112 (Cocamide DEA, 100% approx. d.m.): non-ionic character. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. It acts as a viscosity modifier allowing to reduce the quantity of added NaCl.

BETADET[°] HR (Cocamidopropyl Betaine, 30% a.m.): amphoteric character. Foaming and detergent surfactant. Synergism regarding cleaning effect when combined with Levenol and anionic surfactants in a HDLD.

DANOX[°] P-15 (pearling concentrate): anionic character. It allows to modify the final formula appearance, giving a beautiful pearled appearance without heating. Use % : 1.5 - 4%.

EMAL[°] 270D (Sodium Alkyl Ether Sulphate, 70% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

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KCE REFERENCE : D-040

WASHING-UP LIQUID 15% active

DESCRIPTION

- ☞ Product for manual application
- ☞ Home cleaning
- ☞ Very effective at removing the grease and particulate soils

COMPOSITION

	%
SULFONAX™	9.5
EMAL™ 227E *	10.0
AMIDET™ B-112	1.5
NaOH 10%	c.s. (pH adjust :6.0 – 7.0)
NaCl	c.s (viscosity adjust, <1%)
Fragrance	q.s.
Dye(s)	q.s.
Preservative	q.s.
Deionized Water	Up to 100%

* 10% of EMAL™ 227E (26.5% a.m.) can be substituted by 3.8% of EMAL™ 270E (70% a.m.)

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Liquid	KCS-258
pH (as it is)	6.0 – 7.0	KCSA-014
VISCOSITY (20°C,cPs)	~ 800	KCSA-227
DRY MATTER (%)	~ 15	KCSA-092
CLOUD POINT (°C)	~ - 4	KCSA-246

KCE REFERENCE : D-040

RECOMMENDED OPERATIVE METHOD

- ☞ Add 90% of the total needed quantity of NaOH to the deionized water.
- ☞ Add SULFONAX™ to the above mentioned mixture. A neutralisation exothermic chemical reaction will occur.
- ☞ Check pH before to add the other components, and adjust it between 6 and 7 with diluted NaOH or Triethanolamine.
- ☞ Continue adding EMAL™ 227E, and stir.
- ☞ Add AMIDET™ B-112 and keep stirring till complete homogeneity.
- ☞ Continue with the addition of the other additives: preservative, fragrance, dye(s) (diluted in water),...
- ☞ Adjust viscosity using Sodium Chloride.
- ☞ Product can be poured away.

COMMENTS

- ☞ Viscosity can be modified adding different quantities of NaCl or can be reduced using EtOH.

COMPONENTS

AMIDET™ B-112 (cocamide DEA, 100% approx. d.m.): non-ionic character. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. It acts as a viscosity modifier allowing to reduce the quantity of added NaCl.

EMAL™ 227 E (sodium alkyl ether sulphate, 27% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

SULFONAX™ (dodecyl benzene sulfonic acid, 94% a.m.): anionic character. Primary surfactant, highly foaming . Good detergent properties.

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KCE REFERENCE : D-046

CONCENTRATED WASHING-UP LIQUID

37 % active

DESCRIPTION

- ☛ Concentrated hand washing-up liquid
- ☛ High performance product, mild to the skin
- ☛ Very good grease remover
- ☛ Process at room temperature

COMPOSITION

	%
ALFANOX™ 46	50.3
EMAL™ 270E	17.7
BETADET™ HR	3.0
AMIDET™ B-112	3.0
Ethyl Alcohol	4.0 (viscosity adjust, ~1 3%)
Citric Acid 50%	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C,cPs) :	~1 700	KCSA-227
DRY MATTER (%) :	~1 37	KCSA-092
CLOUD POINT (°C) :	~1 - 6	KCSA-246
IRRITATION (1% active) :	Moderately Irritant (240)	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C

RECOMMENDED OPERATIVE METHOD

KCE REFERENCE : D-046

- ⊘ Mix BETADET™ HR and EtOH and stir till complete homogenization.
- ⊘ Add AMIDET™ B-112 and stir till completely mixed.
- ⊘ Add EMAL™ 270E and stir till complete homogenization.
- ⊘ Add ALFANOX™ 46 and stir till completely transparent.
- ⊘ Add deionized water and homogenize.
- ⊘ Continue adding the other additives: preservative, perfume (it need 15 minutes minimum to reach total solubility), dye (water dilution),...
- ⊘ Adjust pH (citric or lactic acids are advised).

COMMENTS

- ⊘ If EMAL™ 270E is used, it is better to add AMIDET B-112 to the mixture of ethylenglycol and deionised water and after stirring, to continue with the addition of the EMAL 270E. To reduce the time of incorporation it is advisable to heat water up to 40°C approx.

COMPONENTS

ALFANOX™ 46 (^ - olefin sulphonate, 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

AMIDET™ B-112 (cocamide DEA, 100% approx. d.m.): non-ionic character. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. It acts as a viscosity modifier allowing to reduce the quantity of added NaCl.

BETADET™ HR (cocamidopropyl betaine, 30% a.m.): amphoteric character. Foaming and detergent surfactant. Synergism regarding cleaning effect when combined with Levenol and anionic surfactants in a HDLD.

EMAL™ 270 E (sodium alkyl ether sulphate, 70% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

EtOH (ethyl alcohol): solvent. Recommended component to maintain the fluidity of the final formula and to improve the cloud point by cooling it.

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KCE REFERENCE : D-166

STANDARD WASHING UP LIQUID

DESCRIPTION

It is a typical example of a concentrated liquid hand dishwashing formulation where efficacy and active matter are well balanced to obtain a cost effective formulation which meets the sustainability principles of concentrates.

COMPOSITION

	%
EMAL ~ 227 E	64.3
BETADET ~ HR	5.0
EMANON ~ XLF	3.3
Ethanol	5.0
NaOH (50%)	0.2
Preservative	e.q.
Colorant	e.q.
Deionised Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
DRY MATTER (%) :	≈ 33.1	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 1300	KCSA-227
pH (as it is) :	≈ 6.5	KCSA-014

KCE REFERENCE : D-166

RECOMMENDED OPERATIVE METHOD

- ↘ Add EMAL[°] 227E, EMANON[°] XLF, ethanol and homogenize.
- ↘ Add approximately the 90% of the total water content. Stir until homogenization.
- ↘ Continue with the addition of BETADET[°] HR stirring until complete homogenization.
- ↘ Adjust pH by adding Citric Acid (50%) and add the rest of the water.
- ↘ Finally, unload the product.

COMPONENTS

BETADET[°] HR (cocamidopropyl betaine, _{an} 30% a.m.): amphoteric character. Foaming and detergent surfactant. It decreases the irritation of anionic surfactants on the skin. Additional thickening effect.

EMAL[°] 227E (sodium laureth sulfate, _{an} 27% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

EMANON[°] XLF (glycereth-7 caprylate/caprato, _{an} 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

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KCE REFERENCE : D-174

SOLVENT FREE WASHING UP LIQUID (30%)

DESCRIPTION

- ↵ Solvent free hand dishwashing formulation
- ↵ It has a unique ternary surfactant system designed to obtain the maximum possible effectiveness
- ↵ The solvent free concept is the maximum expression of sustainable formulation

COMPOSITION

	%
EMAL [^] 270 D	25.70
BETADET [^] HR	27.00
MELIOSOL [^] CU-40	7.50
EMANON [^] XLF	3.00
Citric Acid (50%)	e.q.
Preservative	e.q.
Colorant	e.q.
Deionised Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
ACTIVE MATTER (%) :	≈ 30	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 900	KCSA-227
pH (as it is) :	7.0-7.5	KCSA-014

KCE REFERENCE : D-174

RECOMMENDED OPERATIVE METHOD

- Add EMAL[°] 270D, EMANON[°] XLF, MELIOSOL[°] CU-40 and the 90% of the water without stirring. Homogenize all these components together.
- Continue with the addition of BETADET[°] HR and stir until homogenization
- Continue with the addition of enough quantity of Citric Acid (50%) in order to neutralize.
- Add the rest of the water.
- Finally, unload the product.

COMPONENTS

EMAL[°] 270D (sodium laureth sulfate, _{an} 70% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

BETADET[°] HR (cocamidopropyl betaine, _{an} 30% a.m.): amphoteric character. Foaming and detergent surfactant. It decreases the irritation of anionic surfactants on the skin. Additional thickening effect.

MELIOSOL[°] CU-40 (sodium cumenesulfonate, _{an} 40% a.m.): anionic character. Hydrotrope component. It improves the solubility and the cloud point of the formula.

EMANON[°] XLF (glycereth-7 caprylate/caprata, _{an} 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

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KCE REFERENCE : D-164

SOLVENT FREE WASHING UP LIQUID (27 %)

DESCRIPTION

- ↯ Solvent free dishwashing formulation
- ↯ It has a unique ternary surfactant system designed to obtain the maximum possible effectiveness.
- ↯ The solvent free concept is the maximum expression of sustainable formulation

COMPOSITION

	%
EMAL [®] 270 D	23.14
OXIDET [®] DM-20	27.00
EMANON [®] XLF	2.70
MELIOSOL [®] CU-40	2.25
Citric Acid (50%)	1.25
Preservative	e.q.
Colorant	e.q.
Deionised Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
ACTIVE MATTER (%) :	≈ 27	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 2000	KCSA-227
pH (as it is) :	7.0-7.5	KCSA-014

KCE REFERENCE : D-164

RECOMMENDED OPERATIVE METHOD

- ↯ Add EMAL[®] 270D, EMANON[®] XLF, MELIOSOL[®] CU-40 and the 90% of the water. Stir after each addition until homogenization.
- ↯ Continue with the addition of the 0.50% of Citric Acid (50%) and homogenize in order to facilitate the incorporation of OXIDET[®] DM-20.
- ↯ Continue with the addition of OXIDET[®] DM-20 and stir until homogenization.
- ↯ Adjust pH by adding a 0.75% of Citric Acid (50%) and add the rest of the water.
- ↯ Finally, unload the product.

COMPONENTS

EMAL[®] 270D (sodium laureth sulfate, _{an} 70% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

EMANO_N[®] XLF (glycereth-7 caprylate/caprata, _{an} 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

MELIOSOL[®] CU-40 (sodium cumenesulfonate, _{an} 40% a.m.): anionic character. Hydrotrope component. It improves the solubility and the cloud point of the formula.

OXIDE[®] DM-20 (lauramine oxide, _{an} 30% a.m.): non-ionic/cationic character (depending on the pH). Stable at acidic and alkaline pH. Foaming and detergent.

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KCE REFERENCE : D-176

DERMO WASHING UP LIQUID (25%)

DESCRIPTION

- ⌘ High performance product, mild to skin
- ⌘ Product without ethanol
- ⌘ Ecological and biodegradable product
- ⌘ Designed with the ecological LEVENOL® chemistry

COMPOSITION

	%
EMAL [®] 227 E ⁽¹⁾	55.6
OXIDET [®] DMCLD	13.3
EMANON [®] XLF	4.0
AMIDET [®] N	2.1
DANOX [®] PL-10	2.0
Citric Acid (50%)	0.7
Preservative	e.q.
Colorant	e.q.
Deionised Water	Up to 100%

(1) 55.6% of EMAL[®] 227E can be replaced by 53.6% of EMAL[®] 228HP or by 21.40% approx. of EMAL[®] 270D or EMAL[®] 270E

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Pearled viscous liquid	KCSA-258
ACTIVE MATTER (%) :	≈ 25	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 1600	KCSA-227
pH (as it is) :	7.0 - 7.5	KCSA-

KCE REFERENCE : D-176

RECOMMENDED OPERATIVE METHOD

- ↘ Add EMAL[®] 227E, OXIDE[®] DMCLD, EMANON[®] XLF and AMIDE[®] N and citric acid stirring until a complete homogeneous mixture is obtained.
- ↘ Continue with the addition of the rest of the water slowly stirring during all the dilution process.
- ↘ Add DANOX[®] PL-10 if pearled effect is desired and stir until homogenize all the mixture.
- ↘ Finally, unload the product.

COMPONENTS

EMAL[®] 227E (Sodium Laureth Sulfate, \approx 27% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

EMANON[®] XLF (Glycereth-7 Caprylate/Caprata, \approx 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

OXIDE[®] DMCLD (Cocamine Oxide, \approx 30% a.m.): non-ionic/cationic character (depending on the pH). Stable at acidic and \uparrow

alkaline pH. Foaming and detergent. Thickening and fragrance solubilizing agent in sodium hypochlorite solutions.

AMIDE[®] N (PEG-4 Rapeseedamide, \approx 95% a.m.): non-ionic character. It acts as a viscosity modifier allowing to reduce \uparrow

the quantity of added NaCl. Nitrosamines free thickener. It improves the quality of the foam and avoids the excessive degreasing effect and the irritation of the anionic surfactants on the skin. Multi-functional surfactant (*previous name: AMINOL N*)

DANOX[®] PL-10 (pearling concentrate, \approx 52% dry matter) : anionic and non-ionic character. Nitroso-amines free product (its composition doesn't contain any Nitrogen derivative). It allows modifying the final appearance of the formula, providing it with

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KCE REFERENCE : D-043

MILD WASHING-UP LIQUID

20% active

DESCRIPTION

- γλ Concentrated hand washing-up liquid
- γλ High performance product, mild to the skin
- γλ Ecological and biodegradable product

COMPOSITION

COMPOSITION	%
LEVENOL ~ C-421	3.0
EMAL ~ 270E *	10.7
BETADET ~ HR-50K	5.0
ALFANOX ~ 46	13.5
OXIDET ~ L-75	5.0
NaCl	e.q (viscosity adjust, <0.5%)
Citric Acid 50% or NaOH 10%	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

* 10.7% of EMAL ~ 270E (70% a.m.) can be substituted by 28.3% of EMAL ~ 227E (26.5% a.m.)

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C,cPs) :	≈ 700	KCSA-227
DRY MATTER (%) :	≈ 20	KCSA-092
CLOUD POINT (°C)	≈ -6	KCSA-246
IRRITATION (1% active) :	Non Irritant (< 100)	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C

KCE REFERENCE : D-043

RECOMMENDED OPERATIVE METHOD

- ↯ Add LEVENOL[°] C-421 to the deionised water.
- ↯ Continue adding EMAL[°] 270E, and stir.
- ↯ Add ALFANOX[°] 46 and continue with the addition of the other surfactants: BETADET[°] HR-50K and OXIDET[°] L-75. Stir till complete transparency after each addition.
- ↯ Continue adding the additives: preservative, fragrance, dye(s) (better diluted in water),...
- ↯ Adjust pH using diluted citric acid or sodium hydroxide.
- ↯ Adjust desired viscosity adding sodium chloride.
- ↯ Product can be poured away.

COMMENTS

- ↯ Viscosity can be modified adding different quantities of NaCl or can be reduced using EtOH.

COMPONENTS

ALFANOX[°] 46 (↯ olefin sulphonate, 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

BETADET[°] HR-50K (cocamidopropyl betaine, 40% a.m.): anfoteric character. It decreases the irritation level of the anionic surfactants, improving the volume and quality of the foam.

EMAL[°] 270 E (sodium alkyl ether sulphate, 70% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[°] C-421 (glycereth-2 cocoate , 100% a.m.): nonionic character. Thickener effect, allowing to reduce sodium chloride content in the final formula. It improves the quality of the foam and it avoids the excessive degreasing effect of the anionic surfactants on the skin. Very mild surfactant.

OXIDET[°] L-75 (cocamidopropylamine oxide, 30% a.m.): cationic/non-ionic character (depending on the pH). Secondary surfactant, it increases foam volume and improves the quality of it. It also acts as a thickener.

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KCE REFERENCE : D-042

MILD WASHING-UP LIQUID 15% active – COLOURLESS

DESCRIPTION

- ↯ Water-clear, colourless, hand washing-up liquid
- ↯ High performance product, mild to the skin
- ↯ Ecological and biodegradable product

COMPOSITION

	%
LEVENOL ~ C-421	3.0
EMAL ~ 227E *	32.0
OXIDET ~ L-75	12.8
NaCl	e.q (viscosity adjust, <0.5%)
Citric Acid 50% or NaOH 10%	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

* 32% of EMAL ~ 227E (26.5% a.m.) can be substituted by 12.1% of EMAL ~ 270E (70% a.m.)

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	White-clear Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C, cPs) :	≈ 700	KCSA-227
DRY MATTER (%) :	≈ 15	KCSA-092
CLOUD POINT (°C)	≈ -8	KCSA-246
IRRITATION (1% active) :	Non Irritant	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C

KCE REFERENCE : D-042

RECOMMENDED OPERATIVE METHOD

- ↵ Add LEVENOL[°] C-421 to the deionised water.
- ↵ Continue adding EMAL[°] 227E, and stir.
- ↵ Continue with the addition of OXIDET[°] L-75. Stir till complete transparency after each addition.
- ↵ Continue adding the additives: preservative, fragrance, dye(s) (better diluted in water),...
- ↵ Adjust pH using diluted citric acid or sodium hydroxide.
- ↵ Adjust desired viscosity adding sodium chloride.
- ↵ Product can be poured away.

COMMENTS

- ↵ Viscosity can be modified adding different quantities of NaCl or can be reduced using EtOH.

COMPONENTS

EMAL[°] 227 E (sodium alkyl ether sulphate, 27% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[°] C-421 (glycereth-2 cocoate , 100% a.m.): nonionic character. Thickener effect, allowing to reduce sodium chloride content in the final formula. It improves the quality of the foam and it avoids the excessive degreasing effect of the anionic surfactants on the skin. Very mild surfactant.

OXIDET[°] L-75 (cocamidopropylamine oxide, 30% a.m.): cationic/non-ionic character (depending on the pH). Secondary surfactant, it increases foam volume and improves the quality of it. It also acts as a thickener.

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KCE REFERENCE : D-050

CONCENTRATED WASHING-UP LIQUID

37 % active

DESCRIPTION

- ↯ Concentrated hand washing-up liquid
- ↯ High performance product, mild to skin
- ↯ Ecological and biodegradable product

COMPOSITION

	%
LEVENOL ~ C-421	7.1
EMAL ~ 270E *	13.1
BETADET ~ HR-50K	13.3
ALFANOX ~ 46	37.3
Ethyl Alcohol (EtOH)	c.s (viscosity adjust, ≈ 5 %)
Citric Acid 50% or NaOH 10%	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

* 13.3% of BETADET ~ HR-50K can be substituted by 17.7% of BETADET ~ HR

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C,cPs) :	≈ 850	KCSA-227
DRY MATTER (%) :	≈ 37	KCSA-092
CLOUD POINT (°C) :	≈ +2	KCSA-246
IRRITATION (1% active) :	Non Irritant (<140)	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C

KCE REFERENCE : D-050

RECOMMENDED OPERATIVE METHOD

- ↯ Mix BETADET[®] HR-50K and EtOH.
- ↯ Add LEVENOL[®] C-421 to the above mentioned mixture.
- ↯ Continue adding EMAL[®] 270E, and stir.
- ↯ Add deionized water and keep stirring till complete homogeneity.
- ↯ Add ALFANOX[®] 46 and continue with the addition of the other additives: preservative, fragrance, dye(s) (diluted in water),...
- ↯ Adjust pH using diluted citric acid or sodium hydroxide.
- ↯ Product can be poured away.

COMPONENTS

ALFANOX[®] 46 (sodium olefin sulphonate, 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

BETADET[®] HR-50K (cocamidopropyl betaine, 48% d.m.): amfoteric character. Foaming and detergent surfactant. It decreases the irritation of anionic surfactants on the skin. Additional thickening effect.

BETADET[®] HR (cocamidopropyl betaine, 30% a.m.): amphoteric character. Foaming and detergent surfactant. It decreases the irritation of anionic surfactants on the skin. Additional thickening effect.

EMAL[®] 270E (sodium laureth sulfate, 70% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[®] C-421 (glycereth-2 cocoate, 100% a.m.): non-ionic character. Thickening effect. Its use allows to reduce the sodium chloride content in the final formula. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. Completely innocuous surfactant for human uses. Environmentally friendly. It doesn't need any risk or safety sentences and warnings on its label.

Ethyl Alcohol (Ethanol or EtOH): water soluble solvent. It acts as a dirt emulsifier, mainly when it is directly applied. It improves the final stability of the formula.

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KCE REFERENCE : D-052

CONCENTRATED WASHING-UP LIQUID 32% active WITHOUT SOLVENTS

DESCRIPTION

- ⌘ Concentrated hand washing-up liquid, mild to the skin
- ⌘ High performance product
- ⌘ Very good grease remover
- ⌘ Product without ethanol
- ⌘ Process at room temperature
- ⌘ Ecological and biodegradable product

COMPOSITION

COMPOSITION	%
ALFANOX~ 46	45.4
EMAL~ 227E *	42.3
LEVENOL~ C-421	2.0
OXIDET~ L-75	2.0
NaCl	c.s (viscosity adjust, ≈ 0.8%)
Citric Acid	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
De-ionized Water	Up to 100%

* 42.3% of EMAL~ 227E can be substituted by 16% of EMAL~ 270E

TECHNICAL SPECIFICATIONS

		Kao Method
APPEARANCE (20°C) :	Transparent liquid	KCSA-258
pH (as it is) :	6.0 – 7.0	KCSA-014
BROOKFIELD VISCOSITY (20°C, cPs) :	≈ 500	KCSA-227
DRY MATTER (%) :	≈ 32	KCSA-092
CLOUD POINT (°C) :	≈ -4	KCSA-246
IRRITATION (1% active) :	Moderately Irritating (235)	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C

KCE REFERENCE : D-052

RECOMMENDED OPERATIVE METHOD

- ↯ Add ALFANOX[°] 46 to the de-ionized water and stir till complete transparency.
- ↯ Add EMAL[°] 227E and stir till complete homogenization.
- ↯ Add LEVENOL[°] C-421 and OXIDET[°] L-75 and stir till the mixture is completely transparent.
- ↯ Continue adding the other additives: preservative, perfume (it need 15 minutes minimum to reach total solubility), dye (water dilution).
- ↯ Adjust pH (citric or lactic acids are advised).

COMMENTS

- ↯ If EMAL[°] 270E is used, it is better to add at the beginning LEVENOL[°] C-421 to the de-ionized water and to continue with the addition of the EMAL[°] 270E. To reduce the time of incorporation it is advisable to heat water up to 40°C approx.

COMPONENTS

ALFANOX[°] 46 (sodium ↯-olefin sulphonate, en 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

EMAL[°] 227E (sodium laureth sulfate, en 27% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[°] C-421 (glycereth-2 cocoate, en 100% a.m.): non-ionic character. Thickening effect. It uses allows to reduce the sodium chloride content in the final formula. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. Completely innocuous surfactant for human uses. Environmentally friendly. It doesn't need any risk or safety sentences and warnings on the label. No labelling is needed.

OXIDET[°] L-75 (cocamidopropylamine oxide, en 30% a.m.): cationic/non-ionic character (depending on the pH). Secondary surfactant, it increases foam volume and improves the quality of it. It also acts as a thickener. Its addition reduces the surface tension and therefore improves the detergency of the formula.

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KCE REFERENCE : D-051

CONCENTRATED WASHING-UP LIQUID

32% active

WITHOUT SOLVENTS

DESCRIPTION

- ⌘ Concentrated hand washing-up liquid, mild to the skin
- ⌘ High performance product
- ⌘ Very good grease remover
- ⌘ Product without ethanol
- ⌘ Process at room temperature
- ⌘ Ecological and biodegradable product

COMPOSITION

	%
ALFANOX~ 46	45.4
EMAL~ 227E *	42.3
LEVENOL~ C-421	2.0
OXIDET~ DMCL-D	2.0
NaCl	c.S (viscosity adjust, ≈ 0.8%)
Citric Acid	e.q (pH adjustment at 6.0 - 7.0)
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

* 42.3% of EMAL~ 227E can be substituted by 16% of EMAL~ 270E

KCE REFERENCE : D-051

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent Liquid	KCSA-258
pH (as it is) .	6.0 – 7.0	KCSA-014
VISCOSITY (20°C,cPs) :	≈ 500	KCSA-227
DRY MATTER (%) :	≈ 32	KCSA-092
CLOUD POINT (°C) :	≈ -4	KCSA-246
IRRITATION (1% active) :	Moderately Irritating (235)	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C

RECOMMENDED OPERATIVE METHOD

- Add ALFANOX[°] 46 to the deionised water and stir till complete transparency.
- Add EMAL[°] 227E and stir till complete homogenization.
- Add LEVENOL[°] C-421 and OXIDET[°] DMCL-D and stir till completely transparent.
- Continue adding the other additives: preservative, perfume (it needs 15 minutes minimum to reach total solubility), dye (water dilution).
- Adjust pH (citric or lactic acids are advised).

COMMENTS

- If EMAL[°] 270E is used, it is better to add at the beginning LEVENOL[°] C-421 to the deionised water and to continue with the addition of the EMAL[°] 270E. To reduce the time of incorporation it is advisable to heat water up to 40°C approx.

COMPONENTS

ALFANOX[°] 46 (→ olefin sulphonate, 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

EMAL[°] 227 E (sodium alkyl ether sulphate, 27% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[°] C-421 (glycereth-2 cocoate , 100% a.m.): nonionic character. Thickener effect, allowing to reduce sodium chloride content in the final formula. It improves the quality of the foam and it avoids the excessive degreasing effect of the anionic surfactants on the skin. Very mild surfactant.

OXIDET[°] DMCL-D (cocamine oxide, 30% a.m.): non-ionic/cationic character (depending on the pH). Stable at pH acid and alkaline. Foaming surfactant and fragrance solubilizing agent.

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KCE REFERENCE : D-168

WASHING-UP LIQUID 24 % active matter

DESCRIPTION

- γλ Water-clear, hand washing-up liquid
- γλ High performance product
- γλ Ecological and biodegradable product

COMPOSITION

	%
EMAL 270 D	20.6
OXIDET~L-75 C	21.8
LEVENOL~ F-200	2.4
Ethanol	2.6
Citric Acid (50%)	0.5
Fragrance	e.q
Dye(s)	e.q
Preservative	e.q
Deionized Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Clear Liquid	KCSA-258
pH (as it is) :	≈ 7.0	KCSA-014
VISCOSITY (20°C,cPs) :	~800	KCSA-227
DRY MATTER (%) :	≈ 24	KCSA-092
CLOUD POINT (°C)	≈ -6	KCSA-246
IRRITATION (1% active) :	Non Irritant	ZEIN TEST
STABILITY :	Correct	1 at month 40°C/RT/5°C



KCE REFERENCE : D-168

RECOMMENDED OPERATIVE METHOD

- Add EMAL[®] 270D, LEVENOL[®] F-200, OXIDET[®] L-75C, ethanol, citric acid and approximately the 90% of the total water. Stir at the end of additions until homogenization.
- Once the mixture is homogenized, continuing with the addition of the rest of additives and water.
- Finally, unload the product.

COMPONENTS

EMAL[®] 270 D (Sodium Lauryl Ether Sulphate, 70% a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[®] F-200 (Glycereth-6 Cocoate, 100% a.m.): non-ionic character. Mild surfactant that decreases the irritation level of anionic surfactants, increasing performance and dispersion of the dirt. Medium foaming and good hydrotropic properties. Eco-toxicologically friendly. It doesn't need any risk sentences or warnings on its label.

OXIDET[®] L-75 C (Cocamidopropylamine Oxide, 33% a.m.): cationic/non-ionic character (depending on the pH). Secondary surfactant, it increases foam volume and improves the quality of it. It also acts as a thickener.

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KCE REFERENCE : D-177

SOLVENT FREE WASHING UP LIQUID (24 %)

Effectiveness

DESCRIPTION

- ↯ Solvent free dishwashing formulation
- ↯ It has a unique ternary surfactant system designed to obtain the maximum possible effectiveness.
- ↯ The solvent free concept is the maximum expression of sustainable formulation

COMPOSITION

	%
EMAL~ 270 D	20.6
OXIDET~ L-75C	21.8
EMANON~ XLF	2.4
Citric Acid (50%)	0.6
Preservative	q.s.
Perfume	q.s.
Deionised Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
ACTIVE MATTER (%) :	24	KCSA-092
VISCOSITY (cPs, 20°C) :	900	KCSA-227
pH (as it is) :	6.8	KCSA-014



KCE REFERENCE : D-177

RECOMMENDED OPERATIVE METHOD

- ↯ Add EMAL[°] 270D, OXIDET[°] L-75C, EMANON[°] XLF and 90% of the water. Stir after each addition until homogenization.
- ↯ Adjust pH by adding a 0.6% of Citric Acid (50%) and add the rest of the water.
- ↯ Finally, unload the product.

COMPONENTS

EMAL[°] 270D (sodium laureth sulfate, _{an} 70% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

EMANON[°] XLF (glycereth-7 caprylate/caprato, _{an} 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

OXIDET[°] L-75 C (Cocamidopropylamine Oxide, _{an} 33% a.m.): cationic/non-ionic character (depending on the pH). Secondary surfactant. It increases the foam volume and improves the quality of it. It also acts as a thickener. Its addition reduces the surface tension and therefore improves the detergency of the formula.

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KCE REFERENCE : D-113

CONCENTRATED WASHING-UP LIQUID 40 % active

DESCRIPTION

- γλ High concentrated hand washing-up liquid
- γλ Very mild for the skin
- γλ Highly effective
- γλ Very good grease remover
- γλ Process at room temperature
- γλ Ecological and biodegradable product

COMPOSITION

	%
ALFANOX~ 46	63.8
EMAL~ 270D ⁽¹⁾	11.3
LEVENOL~ C-421	4.0
OXIDET~ L-75 C	9.5
Solvents (Ethyl alcohol / Propilenglycol)	e.q (6% / 1.5%)
Citric Acid (10% solution)	e.q (pH adjustment at 7.0)
Fragrance (Great Lemon PD93309)	e.q (0.6%)
Dye(s) (Azul BTE BR 260, 0.1% sol.) (Amarillo ANT Super, 0.1% sol.)	e.q (0.46%) (1.0 %)
Preservative	e.q
Deionized Water	Up to 100%

(1) EMAL~ 270D can be substituted by 29.3% EMAL~ 227E

TECHNICAL SPECIFICATIONS

		Kao Method
APPEARANCE (25°C) :	Transparent liquid	KCSA-258
pH (as it is) :	≈ 7.0	KCSA-014
BROOKFIELD VISCOSITY (25°C, cPs) :	≈ 265	KCSA-227
DRY MATTER (%) :	≈ 40	KCSA-092
IRRITATION (1% dry matter) :	Non irritant	ZEIN TEST
STABILITY :	Correct	1month at 40°C/RT/5°C



KCE REFERENCE : D-113

RECOMMENDED OPERATIVE METHOD

- λ Add solvents (Ethyl alcohol and Propilenglycol) to the deionized water at room temperature.
- λ Add EMAL[®] 270D and stir till complete homogenization.
- λ Add LEVENOL[®] C-421 and OXIDET[®] L-75 C and stir till the mixture is completely transparent.
- λ Add ALFANOX[®] 46 and stir till complete homogenization.
- λ Continue adding the other components: preservative, perfume (it takes minimum 15 minutes to completely solubilize it), dye (diluted in water).
- λ Adjust pH with diluted citric acid (or NaOH at 10% solution, if the pH has to be increased)

COMMENTS

- λ It is recommended to keep the above mentioned process to avoid dispersion and gelling problems.
- λ Quantity of solvents depend on the final desired viscosity.

COMPONENTS

ALFANOX[®] 46 (sodium λ -olefin sulphonate, \approx 37% a.m.): anionic character. Primary surfactant. It increases foam volume and improves dispersion of the dirt.

EMAL[®] 270D (sodium laureth sulfate, \approx 70 % a.m.): anionic character. Primary surfactant, highly foaming and detergent.

LEVENOL[®] C-421 (glycereth-2 cocoate, \approx 100% a.m.): non-ionic character. Thickening effect. It uses allows to reduce the sodium chloride content in the final formula. It improves the quality of the foam and avoids the excessive degreasing effect of the anionic surfactants on the skin. Completely innocuous surfactant for human uses. Environmentally friendly. It doesn't need any risk or safety sentences and warnings on the label. No labelling is needed.

OXIDET[®] L-75 C (cocamidopropylamine oxide, \approx 33% a.m.): cationic/non-ionic character (depending on the pH). Secondary surfactant, it increases foam volume and improves the quality of it. It also acts as a thickener. Its addition reduces the surface tension and therefore improves the detergency of the formula.

Ethyl Alcohol (Ethanol or EtOH) : water soluble solvent. It acts as a dirt emulsifier, mainly when it is directly applied. It improves the final stability of the formula.

Propilenglycol (polyol): hydrotrope. Especially recommended to maintain the liquid form of the product.

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KCE REFERENCE : D-165

PREMIUM WASHING UP LIQUID

DESCRIPTION

It is a highly concentrated formulation designed to reach the maximum possible performance in terms of foam volume as well as in number of cleaned dishes.

The quantity of solvent necessary to formulate such a high active matter product is significantly reduced thanks to EMANON® XLF.

COMPOSITION

	%
EMAL [®] 270 D	40.2
OXIDET [®] DM-20	18.6
EMANON [®] XLF	3.8
Ethanol	5.2
Propyleneglycol	2.0
NaCl	1.6 (approx.)
Citric acid (50%)	0.5 (pH ≈ 7)
Preservative	q.s.
Colorant	q.s.
Deionised Water	Up to 100%

TECHNICAL CHARACTERISTICS

		Kao Method
APPEARANCE (20°C) :	Transparent viscous liquid	KCSA-258
DRY MATTER (%) :	≈ 37.5	KCSA-092
VISCOSITY (cPs, 20°C) :	≈ 1000	KCSA-227
pH (as it is) :	≈ 7.0	KCSA-014



KCE REFERENCE : D-165

RECOMMENDED OPERATIVE METHOD

- Add EMAL[®] 270D, EMANON[®] XLF, OXIDET[®] DM-20, citric acid, propylenglycol, ethanol and NaCl and approximately the 90% of the total water. Stir at the end of the additions until complete homogenization.
- Once the mixture is homogenized, continue with the addition of the rest of additives (preservative, fragrance and dyes).
- Adjust pH (if needed) and remaining water till 100%.
- Finally, unload the product.

COMPONENTS

EMAL[®] 270D (Sodium Laureth Sulfate, \approx 70% a.m.) : anionic character. Primary surfactant, highly foaming. Good detergent properties.

EMANON[®] XLF (Glycereth-7 Caprylate/Caprata, \approx 100% a.m.): non-ionic character. Optimized non-ionic surfactant for liquid hand dishwashing formulations, which provides foam in presence of dirt. Eco-toxicologically friendly. Acts as hydrotrope in concentrated formulations.

OXIDET[®] DM-20 (Lauramine Oxide, \approx 30% a.m.): non-ionic/cationic character (depending on the pH). Stable at acidic and alkaline pH. Foaming and detergent.

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