

ROKAcet KO400G

PEG-6 Glyceryl Cocoate



ROKAcet KO400G

Chemical description

ROKAcet KO400G is a nonionic surfactant, mainly used in detergent applications. This product is based on renewable plant raw materials, such as polyoxyethylene fatty acid esters and glycerine. The active substance content exceeds 99%. This surfactant is in the form of a straw to light yellow liquid, with a low viscosity and a solidification temperature below -10°C, which makes it easier to handle in process conditions.

Benefits:

- based on plant crops
- safe, not classified (clp / ghs)
- complies with ecolabel and nordic swan requirements
- high biodegradability
- concentrated form

Physicochemical parameters

Appearance at temperature (20-25°C)	liquid
Colour (Haznen units) (20-25°C)	Max 120
pH of 5% solution	5.0-7.0
Saponification value, mg KOH/g	57-62
Hydroxyl number, mg KOH/g	285-305

Hydrotrope

ROKAcet KO400G is an excellent product for use in detergent formulations with very high concentration. The use of this product in the formulation eliminates the need for the use of solvents.

In order to present its very good hydrotroping properties, a formula of concentrated heavy duty liquid detergent was prepared. The use of ROKAcet KO400G allowed to obtain a stable, clear formulation. The appearance of the formulations with the use of Laureth-7 and C13-15 pareth-7 is also presented below - the effect of using these products is to obtain cloudy systems or even as a gel.



CONCENTRATION HEAVY DUTY LIQUID DETERGENT

	with ROKAcet KO0400G	with Laureth-7 ROKAnol L7	with C13-15 pareth-7 ROKAnol TMP7
SULFOROKAnol L390/1M	20	20	20
ROKAcet KO400G	30	-	-
ROKAnol L7	-	30	-
ROKAnol TMP7	-	-	30
Sodium citrate	2	2	2
Water	up to 100	up to 100	up to 100
Appearance (Visual method)	clear liquid	cloudy gel	cloudy liquid



with ROKAcet KO0400G

with Laureth-7

with C13-15 pareth-7



with ROKAcet KO0400G

with Laureth-7

with C13-15 pareth-7

Washing liquid detergent

Heavy duty liquid detergent, HDLD – Ecolabel

Inci name	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	30.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	10.0	Breaks down stains
Potassium Cocoate	EXOsoft PC35	3.0	Breaks down stains
Tetrasodium Glutamate Diacetate	N,N-Dicarboxymethyl glutamic acid tetrasodium salt (GLDA), 40%	2.0	Chelator
Sodium Citrate	Sodium citrate	2.5	Chelator
Fluorescent Brightener	Fluorescent brightener	0.1	Optical brightener
Enzymes	Multi-enzyme blend, liquid	0.2	Breaks down different types of stains
Aqua	Water	up to 100.0	Solvent



Preparation procedure:

1. Mix Optical brightener with water until dissolved.
2. Add Sodium citrate and mix until a homogeneous solution is obtained.
3. Then add SULFOROKAnol L227/1 and mix.
4. Add ROKAcet KO400G and mix.
5. Then add EXOsoft PC35 and mix a homogeneous solution is obtained.
6. Mix GLDA and finally, add the enzyme blend.
7. Mix until a clear liquid is obtained.

appearance	visual method	clear liquid
pH		7.0 - 8.0
viscosity [cP]	Brookfield LV, T: 20°C	up to 100
stability	1 month at 5°C, 20°C, 40°C	confirmed

Washing liquid detergent

Universal liquid detergent, ULD – Ecolabel

Inci name	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	40.0	Removes stains/ foaming agent
Magnesium Laureth Sulfate	EXOsoft MG	5.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	10.0	Breaks down stains
Potassium Oleate	EXOsoft PO30	3.0	Breaks down stains
Glycerin	Glycerin	6.0	Prevents products from drying out
Tetrasodium Glutamate Diacetate	N,N-Dicarboxymethyl glutamic acid tetrasodium salt (GLDA), 40%	2.5	Chelator
Fluorescent Brightener	Fluorescent brightener	0.1	Optical brightener
Enzymes	Multi-enzyme blend, liquid	0.2	Breaks down different types of stains
Aqua	Water	up to 100.0	Solvent



Preparation procedure:

1. Mix Optical brightener with water until dissolved.
2. Add SULFOROKAnol L227/1 and EXOsoft MG.
3. Mix until a homogeneous solution is obtained
4. Then add ROKAcet KO400G and mix.
5. Then add EXOsoft PC35 and mix a homogeneous solution is obtained.
6. Mix Glycerin and GLDA.
7. Finally, add the enzyme blend and mix until a clear liquid is obtained.

appearance	visual method	clear liquid
pH		7.0 - 8.0
viscosity [cP]	Brookfield LV, T: 20°C	up to 100
stability	1 month at 5°C, 20°C, 40°C	confirmed

Detergency

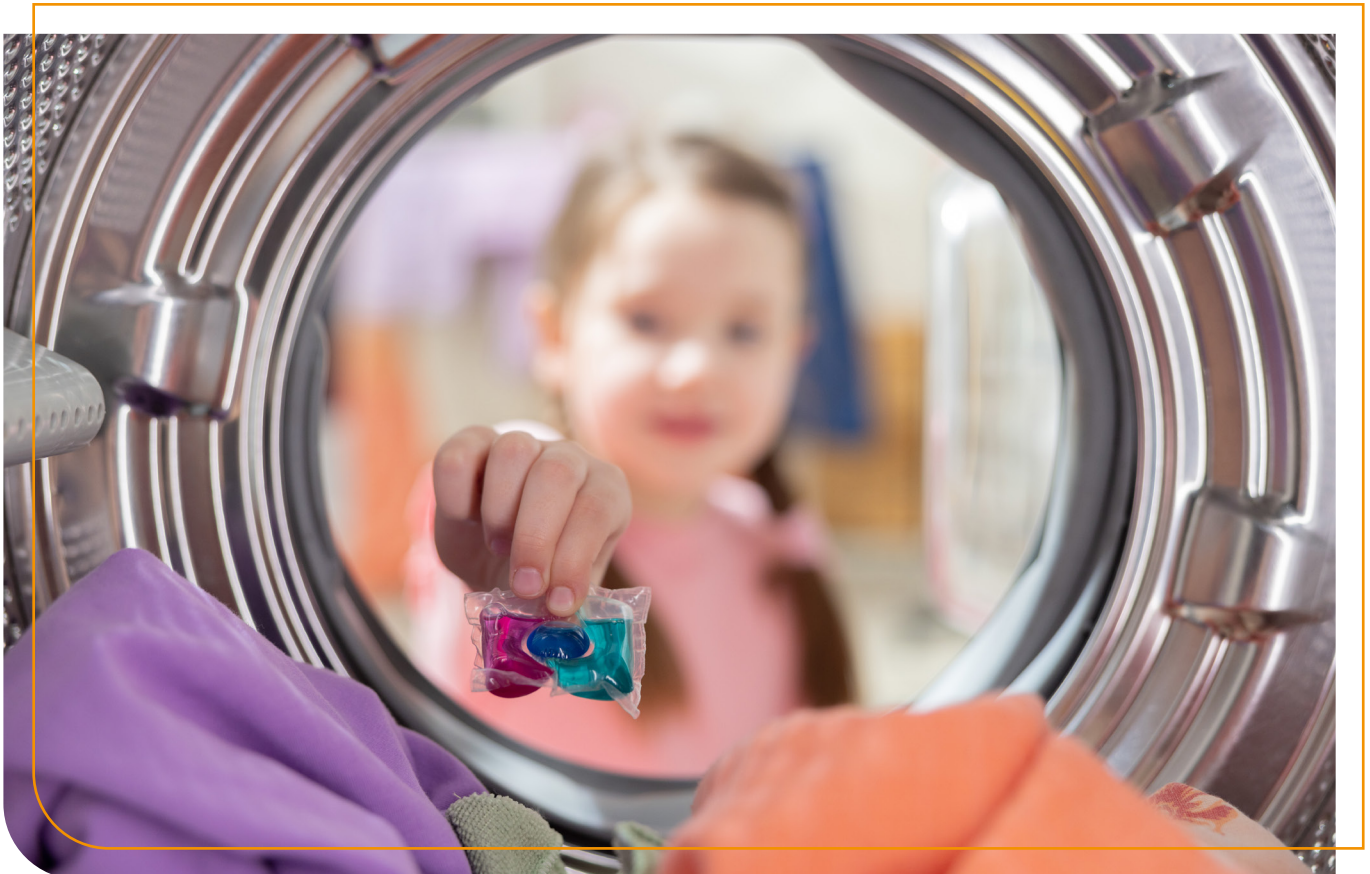
Detergency - the ability of the detergent to remove soils from the fabric surface during the laundering process. Detergency tests were performed using our own method, with a different soils:

1. Fluid make-up, 2. Curry, 3. Blood, aged, 4. Wine, aged, 5. Spaghetti sauce with beef, 6. Chocolate ice cream, aged, 7. Grass/mud, with thickening agent, 8. Highly discriminative tea, 9. Grass, pure, 10. Baby food carrot/potato, 11. Standard clay, 12. Beta-carotene on Cotton, circular stain, 13. Dirty Motor Oil (DMO), 14. Butterfat with colourant, 15. Beef fat, coloured with Sudan red.

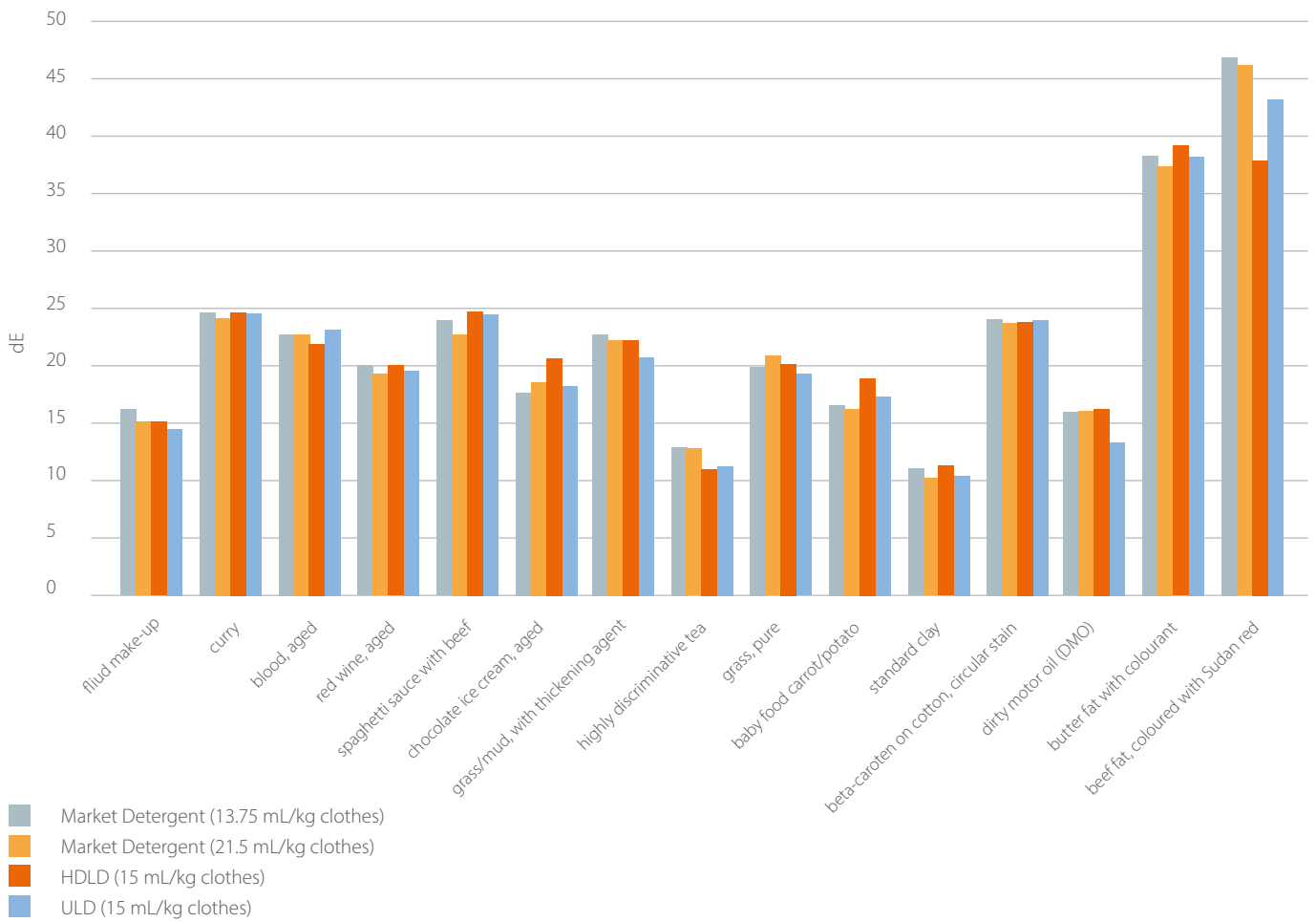
Test conditions:

- automatic washmachine
- 40°C or cold water (with one of the formulations)
- water hardness 13 °dH
- cotton program
- load - calculated for 2 kg of dry, white towels
- the dosing of the market product was verified with the information on the label
- fabric soiled with standard dirt

After the washing process was performed, the standardly disturbed fabrics were dried and ironed, and then the degree of washing was assessed by measuring parameter dE from the CIE LAB scale, as the difference between the initially disturbed stain and the degree of its washing. The greater dE value, the better the washing outcome.



Washing liquid



Washing liquid detergent

Liquid detergent for low temperature use, LDFLTU – Ecolabel

Inci name	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	38.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	9.0	Breaks down stains
Potassium Cocoate	EXOsoft PC35	7.0	Breaks down stains
Tetrasodium Glutamate Diacetate	N,N-Dicarboxymethyl glutamic acid tetrasodium salt (GLDA), 40%	3.0	Chelator
Sodium Citrate	Sodium citrate	2.5	Chelator
Fluorescent Brightener	Fluorescent brightener	0.1	Optical brightener
Enzymes	Multi-enzyme blend, liquid	0.5	Breaks down different types of stains
Aqua	Water	up to 100.0	Solvent

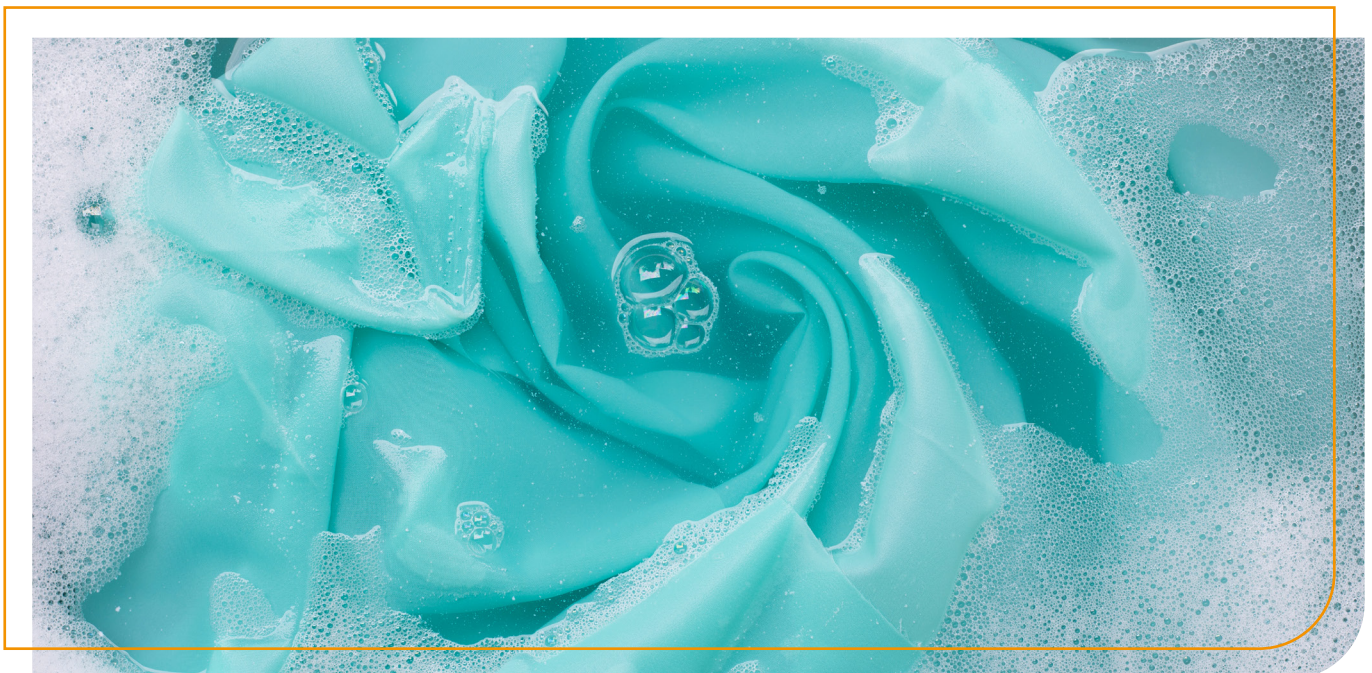
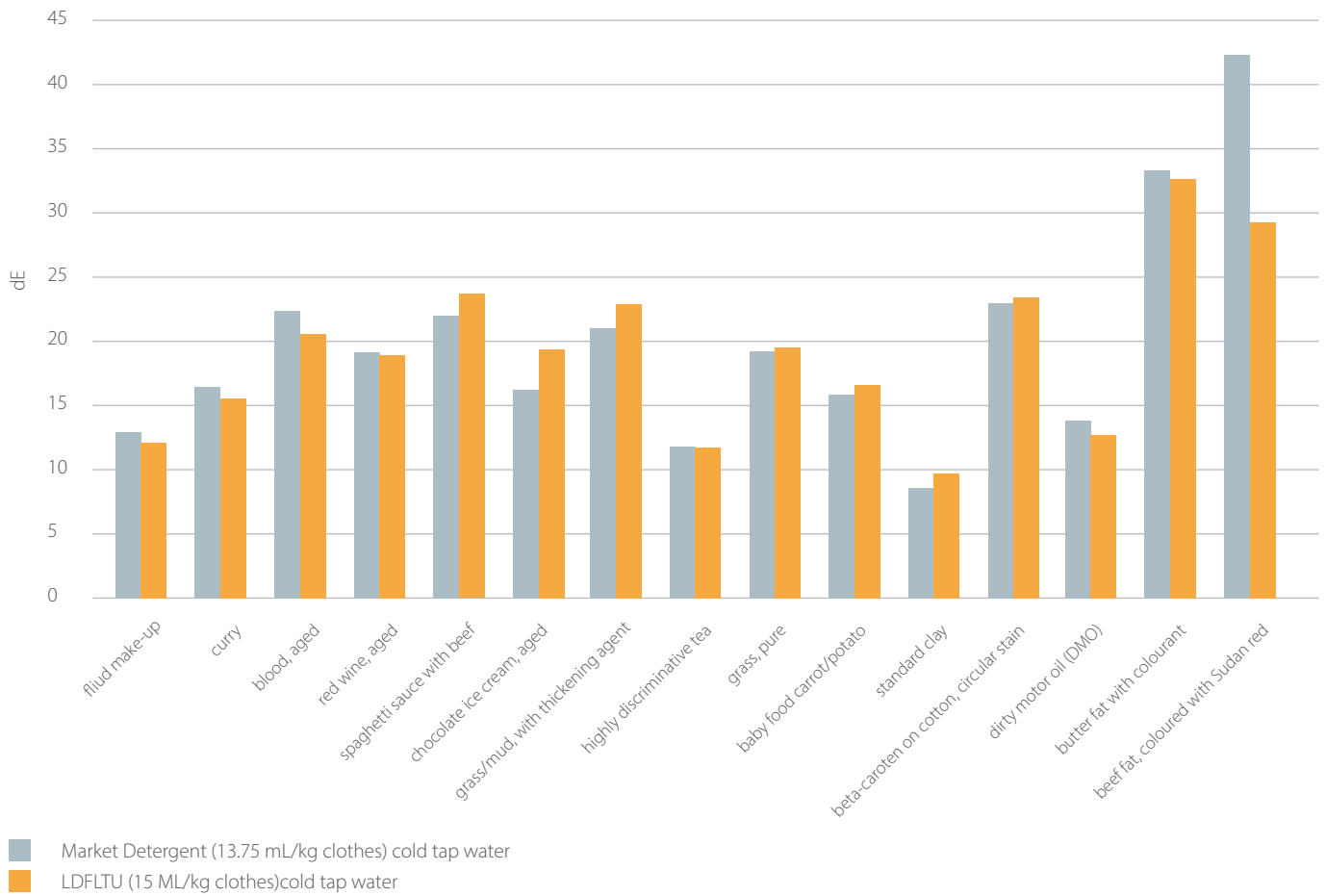


Preparation procedure:

1. Mix optical brightener with water until dissolved.
2. Add sodium citrate and mix until a homogeneous solution is obtained.
3. Then add SULFOROKAnol L227/1 and mix.
4. Add ROKAcet KO400G and mix.
5. Then add EXOsoft PC35 and mix a homogeneous solution is obtained.
6. Mix GLDA and finally, add the enzyme blend.
7. Mix until a clear liquid is obtained.

appearance	visual method	clear liquid
pH		7.5-8.5
viscosity [cP]	Brookfield LV, T: 20°C	up to 100
stability	1 month at 5°C, 20°C, 40°C	confirmed

Washing liquid - low temperature



Hand dishwashing liquid detergent

Economic hand dishwashing liquid – Ecolabel

Inci name	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L277/1	13.5	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	4.0	Cleaning agent
Cocamidopropyl Betaine	ROKAmina K30	3.0	Foaming agent/cleaning agent
Sodium Citrate	Sodium citrate	1.0	Chelator
Citric Acid	Citric acid, monohydrate, 50%	0.08	pH adjuster
Sodium Chloride	Sodium chloride	0.8	Thickener
Aqua	Water	up to 100.0	Solvent



Preparation procedure:

1. Mix water with sodium citrate until dissolved.
2. Add SULFOROKAnol L277/1 and ROKAcet KO400G - mix until a homogeneous solution is obtained.
3. Then add citric acid solution and ROKAmina K30 - mix.
4. Add NaCl and mix a homogeneous solution is obtained.

appearance	visual method	clear gel
pH		5.5-6.5
viscosity [cP]	Brookfield LV, T: 20°C	3000-3500
stability	1 month at 5°C, 20°C, 40°C	confirmed



Hand dishwashing liquid detergent

Natural hand dishwashing liquid – Ecolabel

Inci name	Brand name	Concentration [%]	Function
Ammonium Lauryl Sulfate	ROSULfan A70	6.7	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	1.0	Cleaning agent
Cocamidopropyl Betaine	ROKAmina K30	3.0	Foaming agent/cleaning agent
Sodium Polyacrylate	EXOlat ZA	0.4	Sequestrant
Sodium Chloride	Sodium chloride	0.4	Thickener
Aqua	Water	up to 100.0	Solvent



Preparation procedure:

1. Mix water with ROSULfan A70 until dissolved.
2. Add EXOlat ZA and ROKAcet KO400G - mix until a homogeneous solution is obtained.
3. Then add ROKAmina K30 - mix.
4. Add NaCl and mix a homogeneous solution is obtained.

appearance	visual method	clear gel
pH		5.5-6.5
viscosity [cP]	Brookfield LV, T: 20°C	3500-3700
stability	1 month at 5°C, 20°C, 40°C	confirmed



Hand dishwashing liquid detergent

Hand dishwashing liquid – Ecolabel

Inci name	Brand name	Concentration [%]	Function
Sodium Lauryl Sulfate	ROSULfan L	9.0	Removes stains/ foaming agent
Sodium Laureth Sulfate	SULFOROKanol L170/1	4.9	Foaming agent/cleaning agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	4.0	Cleaning agent
Cocamidopropyl Betaine	ROKAmina K30	4.8	Foaming agent/cleaning agent
Sodium Polyacrylate	EXOlat ZA	0.3	Sequestrant
Glycerine	Glycerine	5.0	Solvent
Aqua	Water	up to 100.0	Solvent



Preparation procedure:

1. Mix water with ROSULfan L and SULFOROKAnol L170/1 until dissolved.
2. Add EXOlat ZA, ROKAcet KO400G and glycerine - mix until a homogeneous solution is obtained.
3. Then add ROKAmina K30 and mix a homogeneous solution is obtained.

appearance	visual method	clear gel
pH		5.5-6.5
viscosity [cP]	Brookfield LV, T: 20°C	3 500-4 500
stability	1 month at 5°C, 20°C, 40°C	confirmed



Hand dishwashing liquid detergent

Highly concentrated hand dishwashing liquid

Inci name	Brand name	Concentration [%]	Function
Ammonium Lauryl Sulfate	ROSULfan A70	20.0-25.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	5.0	Cleaning agent
Laureth-7	ROKAnol L7	2.0	Cleaning agent
Cocamidopropyl Betaine	ROKAmina K30	3.0-10.0	Foaming agent/cleaning agent
Sodium Polyacrylate	EXOlat ZA	1.0	Sequestrant
Glycerine	Glycerine	5.0	Solvent
Aqua	Water	57.0-59.0	Solvent



Preparation procedure:

1. Mix ROSULfan A70 with water and glycerine until dissolved.
2. Add ROKAcet KO400G and mix until a homogeneous solution is obtained.
3. Then add ROKAnol L7 and mix.
4. Add EXOlat ZA and mix.
5. Then add ROKAmina K30 and mix a homogeneous solution is obtained.

appearance	visual method	clear gel
pH		5.5-6.5
dry matter, %		approx. 31
viscosity [cP]	Brookfield LV, T: 20°C	1500-4000
stability	1 month at 5°C, 20°C, 40°C	confirmed



Hand dishwashing liquid detergent

Highly concentrated hand dishwashing liquid – 2 anionic surfactants

Inci name	Brand name	Concentration [%]	Function
Ammonium Lauryl Sulfate	ROSULfan A70	20.0	Removes stains/ foaming agent
Magnesium Laureth Sulfate	EXOsoft MG	11.0	Cleaning agent/foaming agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	5.0	Cleaning agent
Laureth-7	ROKAnol L7	2.0	Cleaning agent
Cocamidopropyl Betaine	ROKAmina K30	5.0	Foaming agent/cleaning agent
Sodium Polyacrylate	EXOlat ZA	1.0	Sequestrant
Glycerine	Glycerine	5.0-9.0	Solvent
Aqua	Water	41.0-51.0	Solvent



Preparation procedure:

1. Mix ROSULfan A70 with water and glycerine until dissolved.
2. Add EXOsoft MG and mix until a homogeneous solution is obtained.
3. Then add ROKAcet KO400G and ROKAnol L7 - mix.
4. Add EXOlat ZA and mix.
5. Then add ROKAmina K30 and mix a homogeneous solution is obtained.

appearance	visual method	clear gel
pH		5.5-6.5
dry matter, %		approx. 40
viscosity [cP]	Brookfield LV, T: 20°C	3 500-3 400
stability	1 month at 5°C, 20°C, 40°C	confirmed



PCC EXOL SA

Sustainable technologies for new generations



PCC EXOL SA is a company that combines cutting-edge technologies with rich experience in production of surfactants (surface active agents). The company is located in Brzeg Dolny (Poland), where anionic, nonionic and amphoteric surfactant production plants have been launched. Due to the flexible production processes, the company offers a wide spectrum of surfactants and industrial formulations, which are often suited for the individual customers operating in plenty of various industry sectors. As one of the leading surfactant manufacturers, PCC EXOL SA carries out new investment projects and implements innovative technologies based on the global sustainability trends.

PCC EXOL SA portfolio includes surfactants with a broad range of applications. Besides of the mass production for personal care and detergents industry, the substances produced by PCC EXOL SA also include specialized products used in various branches, such as textile, agrochemical, metal cleaning, oil drilling, building & construction, paints & coatings, paper industry, extraction & drilling, and many others. The company comprehensive portfolio is continuously enriched with new innovative products, which meet even the strictest market requirements and adapt to the individual needs of customers. This is possible due to the dynamic development of the research faci-

A background graphic consisting of a grid of light blue hexagons of varying shades, creating a 3D effect. On the left side, there are faint, glowing blue and white lines and circles, resembling a molecular or network structure.

PCC EXOL SA combines innovative technologies with experience in designing, producing and selling surfactants and chemical formulations

ties, flexible production, knowledge as well as experienced personnel.

PCC EXOL SA has the key competence necessary for a worldwide production of surfactants. The ongoing projects will soon bring the new opportunities for the company's further development and expansion into new markets. The company offers not only a wide portfolio and professional servicing but most of all flexible production and comprehensive system solutions that meet individual customer demands. The strategic PCC EXOL SA investor is PCC SE, operating on international markets of the chemical raw materials, transport, energy, coal,

coke, petrol, plastics and metallurgy. PCC SE includes 80 companies operating in 39 different locations in 17 countries.



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