

A photograph of a wicker basket containing two bottles of liquid laundry products and a folded blue towel. The bottle on the left is orange with a pink spray nozzle, and the bottle on the right is yellow with a white spray nozzle. In the background, a washing machine is visible.

Liquid laundry detergents and fabric softeners for household use

Operating in 18 countries, in 41 different locations, PCC Group currently employs more than 3 100 people.



About Us

PCC Exol SA is a major player in the European surfactants market. In the eastern and central-eastern part of the continent, it is the undisputed leader in its industry. Most of the production facilities and the company's headquarters are located in Brzeg Dolny, Poland. Here we develop, test and manufacture a wide range of anionic, non-ionic and amphoteric surfactants and speciality industrial formulations.

New products are continuously added to the portfolio in response to market trends and individual customer requirements. The surfactants produced at the plants have a very wide range of industrial applications. They are used as wetting agents, emulsifiers, auxiliaries in paper, metallurgy and many other industries, as well as in

household chemicals, personal care products and textiles.

Sustainable development is an important element of PCC EXOL's business approach. The company develops its management practices and processes to address environmental, social and ethical challenges. The scope of these activities is determined by the company's strategic priorities, operational capabilities and available, verifiable supporting documentation. Among other areas, PCC EXOL undertakes initiatives aimed at supporting the circular economy, improving energy and resource efficiency, enhancing safety performance, and promoting sustainability-related practices within selected elements of its value chain through cooperation with suppliers and customers.

PCC ROKITA SA PCC PCG OXYALKYLATES IRPC	PCC ROKITA SA	PCC ROKITA SA	PCC EXOL SA PCC CHEMAX INC PCC PCG OXYALKYLATES	PCC SYNTEZA
Polyols 	Chlorine 	Phosphorus 	Surfactants 	Alkylphenols 
• Polyether polyols • Polyester polyols • Prepolymers • Polyurethane Systems	• Chlorine • MCAA • Other Chlorine Downstream Product	• Phosphorus derivatives • Naphthalene derivatives • Polycarboxyethers (PCE)	• Anionic surfactants • Cationic surfactants • Nonionic surfactants • Amphoteric surfactants (betaines) • Chemical formulation	• Nonylphenol • Dodecylphenol • Tristyrylphenol
PCC CONSUMER PRODUCTS SA	PCC ROKITA SA	PCC INTERMODAL SA	PCC BAKKISILICON HF.	PCC SE
Consumer Products 	Energy 	Logistics 	Silicon 	Holding & Projects 
• Household & industrial Cleaners, Detergents and Personal Care Products	• Energy Production	• Intermodal transport • Road Haulage • Rail Transport	• Microsilica • Silicon Metal	• Portfolio Management • Project Development

Liquid laundry detergents and fabric softeners for household use

The main task of laundry detergents for home use is to effectively remove stains and dirt from fabrics, including at low wash temperatures, while providing proper fabric care and maintaining softness and a pleasant feel after washing.

Modern laundry detergents are increasingly expected to deliver excellent cleaning performance at lower temperatures, helping to reduce energy consumption. Effective low-temperature washing requires carefully selected raw materials that provide efficient soil removal, stain dispersion and cleaning performance even under milder washing conditions.

The choice and dosage of detergent depend on factors such as load size, water hardness, fabric type and color, as well as the

desired washing and care properties. The effectiveness of a detergent depends not only on the amount used, but also on the appropriate balance of ingredients within the formulation. Optimized formulations can help achieve high cleaning performance while reducing the amount of product required and supporting more sustainable use.

PCC Exol products can be used in liquid laundry detergents, detergent capsules, as well as formulations combining cleaning and fabric-softening properties. The raw materials we offer enable the development of modern, high-performance formulations designed to meet evolving consumer expectations, including effective washing at low temperatures, fabric care, resource efficiency.

The developed formulation is shown below:

- Heavy Duty Liquid Detergent, HDLD
- Universal Liquid Detergent, ULD
- Low-Temp Liquid Detergent, LTLD
- Baby Laundry Detergent, BLD
- Laundry Capsules, LC
- Washing Gel, WG
- Washing & Softening, 2in1
- Fabric Softener

Detergency

Detergency – the ability of the detergent to remove soils from the fabric surface during the laundering process. Detergency tests were performed using to own method on fabric soiled with standard, different dirt: 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.

Tested dirt divided into three categories:

Enzymatic

- Blood, aged
- Chocolate ice cream, aged

Bleachable

- Curry
- Wine, aged
- Grass/mud, with thickening agent
- Highly discriminative tea
- Grass, pure
- Standard clay
- Beta-carotene on cotton, circular stain
- Baby food carrot/potato

Greasy

- Fluid make-up
- Spaghetti sauce with beef
- Butter with colourant
- Beef fat, coloured with Sudan Red
- Dirty Motor Oil (DMO)

Test conditions:

- automatic washing machine
- 40°C
- water hardness (13 °dH)
- cotton program
- load – 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 soiled fabrics were dried and then the degree of washing was assessed by measuring parameter dE* from the CIELab scale, as the difference between the initially stain and the degree of its washing.



Figure 1. Soiled fabric before washing



Figure 2. Fabric after washing



Heavy Duty Liquid Detergent, HDLD

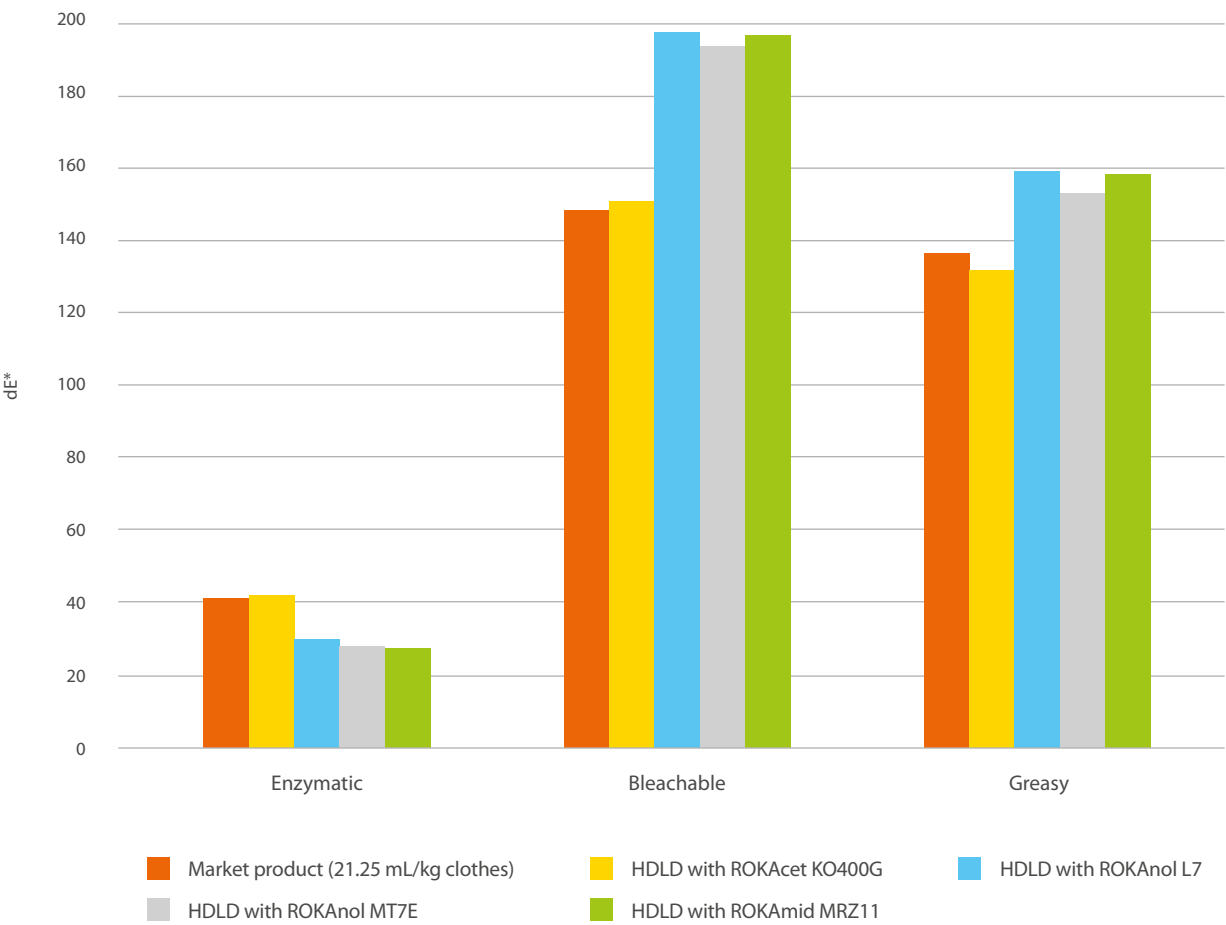
Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	30.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate/ Laureth-7/ Alcohols, C8-18-ethoxylated/ PEG 11-Rapeseedamide	ROKAcet KO400G/ ROKAnol L7/ ROKAnol MT7E/ ROKAmid MRZ11	10.0	Breaks down stains
Potassium Cocoate	EXOsoft PC35	3.0	Breaks down stains
Trisodium Citrate	–	2.5	Chelator
Tetrasodium Glutamate Diacetate	–	2.0	Chelator
Enzymes	–	0.2	Breaks down different types of stains
Fluorescent brightener	–	0.1	Optical brightener
Citric Acid	–	for pH 7.5-8.5	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	liquid
pH		7.5 – 8.5
Viscosity [cP]	Brookfield LV, T: 20°C	<100

Procedure:

1. Mix Fluorescent brightener with water.
2. Add Trisodium Citrate and mix until a homogeneous solution is obtained.
3. Then add **SULFOROKAnol L227/1** and mix.
4. Add **ROKAcet KO400G / ROKAnol L7 / ROKAnol MT7E / ROKAmid MRZ11** and mix.
5. Then add **EXOsoft PC35** and mix.
6. Add GLDA- Na_4 , mix.
7. Add Citric Acid to obtained pH in the mass around 7.5 – 8.5.
8. Finally, add Enzymes and mix until a clear liquid is obtained.

Heavy Duty Liquid Detergents (15 mL/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.



Universal Liquid Detergent, ULD

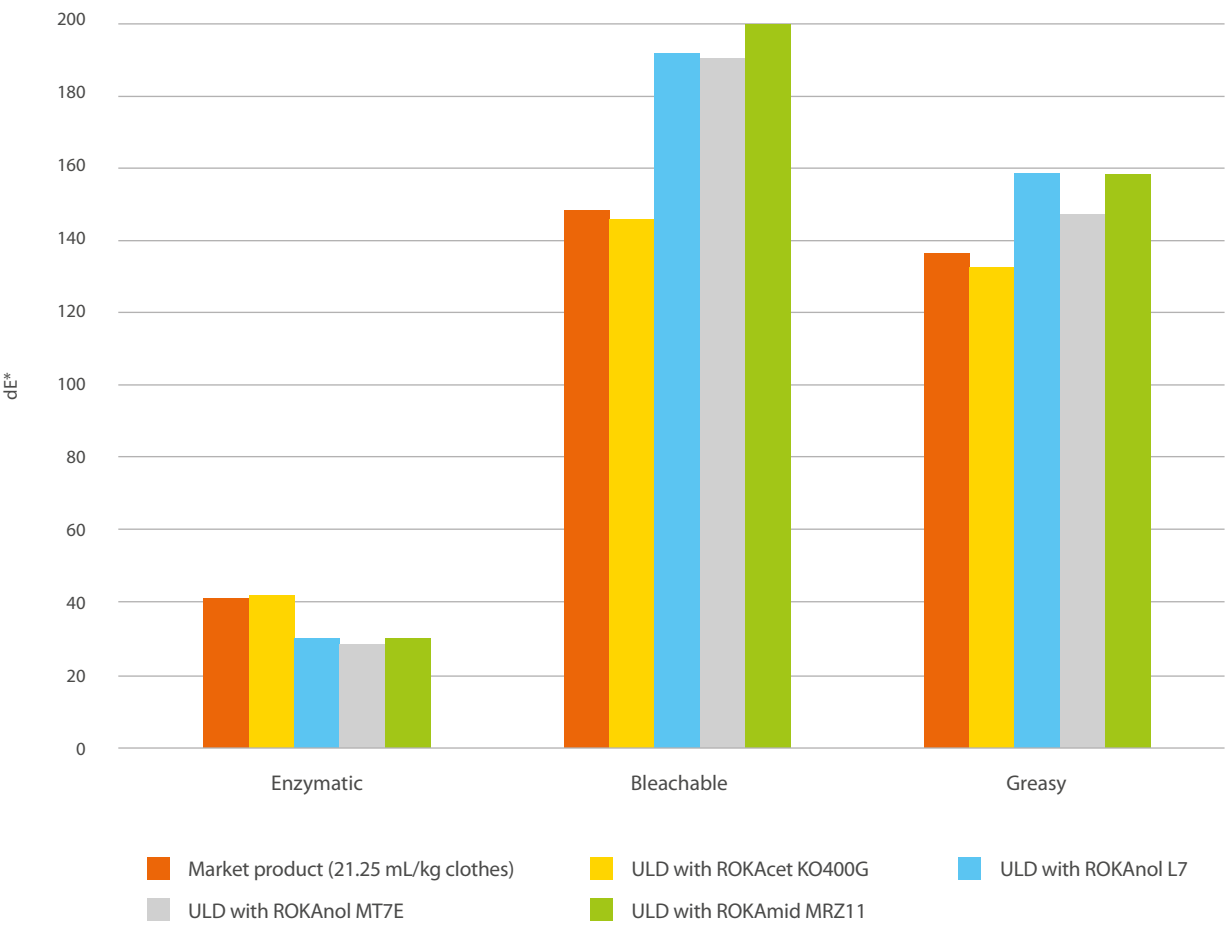
Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	40.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate/ Laureth-7/ Alcohols, C8-18-ethoxylated/ PEG 11-Rapeseedamide	ROKAcet KO400G/ ROKAnol L7/ ROKAnol MT7E/ ROKAmid MRZ11	10.0	Breaks down stains
Potassium Oleate	EXOsoft PO30	5.0	Breaks down stains
Magnesium Laureth Sulfate	–	5.0	Removes stains/ foaming agent
Glycerin	–	6.0	Humectant
Tetrasodium Glutamate Diacetate	–	2.5	Chelator
Enzymes	–	0.2	Breaks down different types of stains
Fluorescent brightener	–	0.1	Optical brightener
Citric Acid	–	for pH 7.5-8.5	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	liquid
pH		7.5 – 8.5
Viscosity [cP]	Brookfield LV, T: 20°C	<100

Procedure:

1. Mix Fluorescent brightener with water until dissolved.
2. Add **SULFOROKAnol L227/1** and Magnesium Laureth Sulfate and mix until a homogeneous solution is obtained.
3. Then add **ROKAcet KO400G / ROKAnol L7 / ROKAnol MT7E / ROKAmid MRZ11** and mix.
4. Then add **EXOsoft PO30** and mix a homogeneous solution is obtained.
5. Add Glycerin and mix.
6. Add GLDA-Na₄, mix.
7. Add Citric Acid to obtained pH in the mass around 7.5 – 8.5.
8. Finally, add Enzymes and mix until a clear liquid is obtained.

Universal Liquid Detergents (15 mL/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.



Low-Temp Liquid Detergent, LTLD/1

Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate/ Sodium C12-15 Pareth Sulfate/ Sodium Trideceth Sulfate	SULFOROKAnol L270/1 or SULFOROKAnol L370 or SULFOROKAnol IT370	14.6	Removes stains/ foaming agent
Alcohols, C8-18-ethoxylated	ROKAnol MT7E	9.0	Breaks down stains
Potassium Oleate	EXOsoft PO30	9.0	Breaks down stains
Tetrasodium Glutamate Diacetate	–	3.0	Chelator
Trisodium Citrate	–	2.5	Chelator
Enzymes	–	0.5	Breaks down different types of stains
Fluorescent brightener	–	0.1	Optical brightener
Citric Acid	–	for pH ~ 7.5	pH regulator
Aqua	–	up to 100.0	Solvent

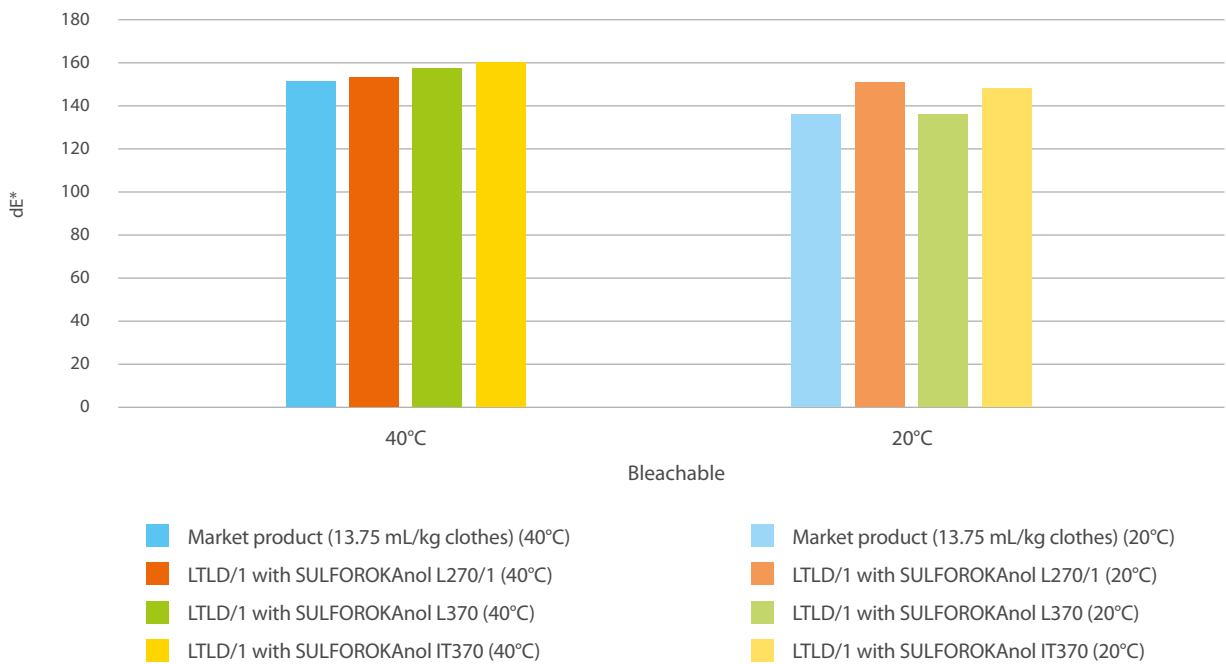
Appearance	visual method	clear liquid
pH		7.0 – 8.0
Viscosity [cP]	Brookfield LV, T: 20°C	1800 – 3000 (SULFOROKAnol L270/1) 1800 – 3000 (SULFOROKAnol L370) 300 – 500 (SULFOROKAnol IT370)

Procedure:

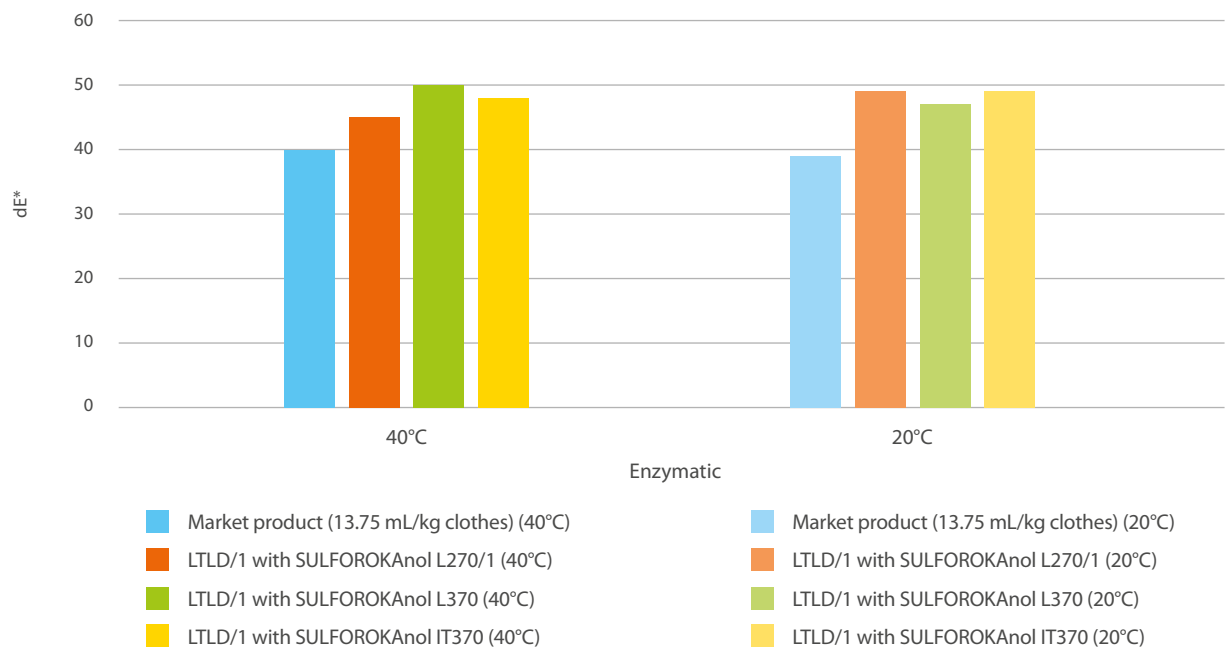
1. Mix fluorescent brightener with water until dissolved.
2. Add Trisodium Citrate and mix until a homogeneous solution is obtained.
3. Then add **SULFOROKAnol L270/1** or **SULFOROKAnol L370** or **SULFOROKAnol IT370** and mix.
4. Add **ROKAnol MT7E** and mix.
5. Then add **EXOsoft PO30** and mix a homogeneous solution is obtained.
6. Add Tetrasodium Glutamate Diacetate, mix.
7. Add Citric Acid to obtained pH in the mass around 7.5.
8. Finally, add Enzymes and mix until a clear liquid is obtained.



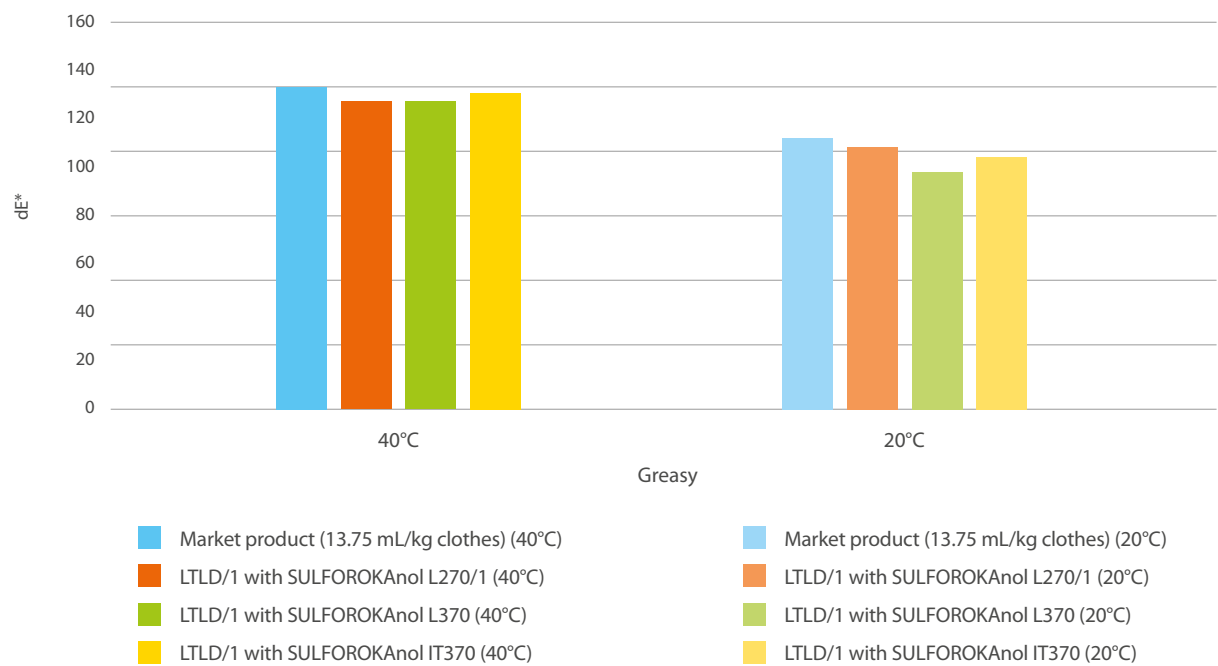
Low-Temp Liquid Detergents (15 mL/kg clothes)



Low-Temp Liquid Detergents (15 mL/kg clothes)



Low-Temp Liquid Detergents (15 mL/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.



Low-Temp Liquid Detergent, LTLD/2

Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	38.0	Removes stains/ foaming agent
PEG-6 Glyceryl Cocoate/ Laureth-7/ Alcohols, C8-18-ethoxylated/ PEG 11-Rapeseedamide	ROKAcet KO400G/ ROKAnol L7/ ROKAnol MT7E/ ROKAmid MRZ11	9.0	Breaks down stains
Potassium Cocoate	EXOsoft PC35	7.0	Breaks down stains
Tetrasodium Glutamate Diacetate	–	3.0	Chelator
Trisodium Citrate	–	2.5	Chelator
Enzymes	–	0.5	Breaks down different types of stains
Fluorescent brightener	–	0.1	Optical brightener
Citric Acid	–	for pH ~ 7.5	pH regulator
Aqua	–	up to 100.0	Solvent

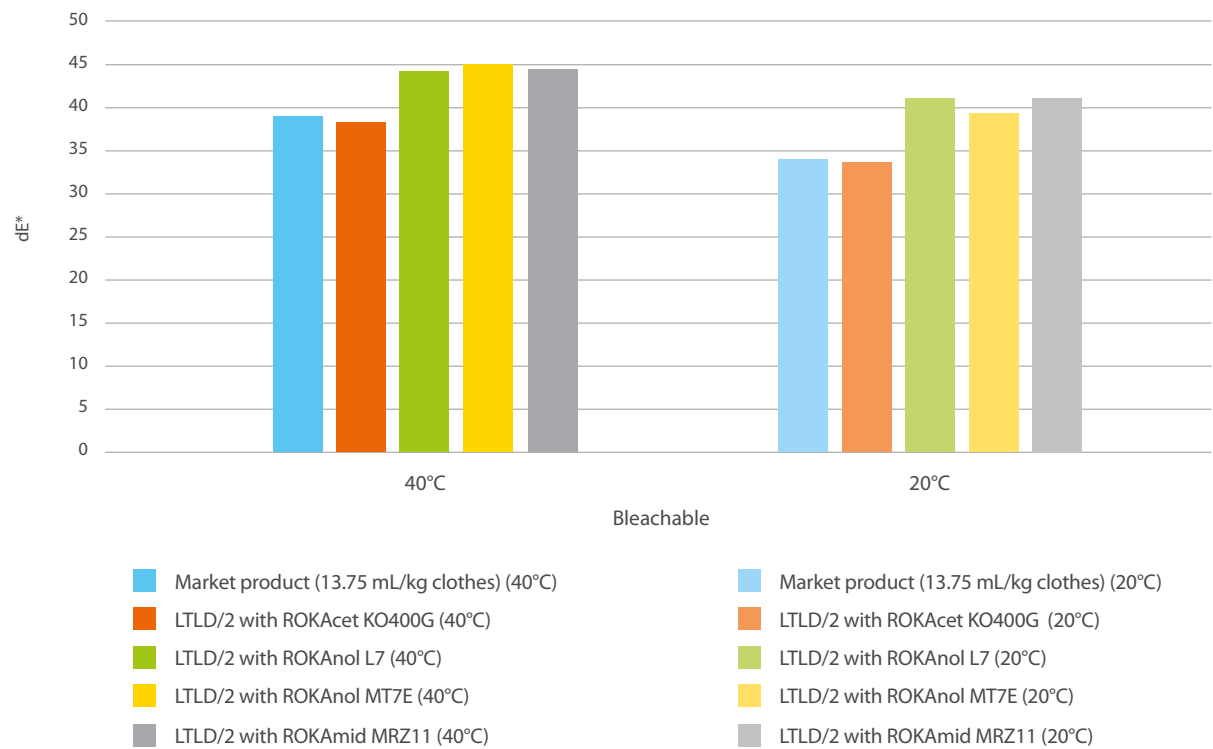
Appearance	visual method	liquid
pH		8.0 – 8.5
Viscosity [cP]	Brookfield LV, T: 20°C	up to 100

Procedure:

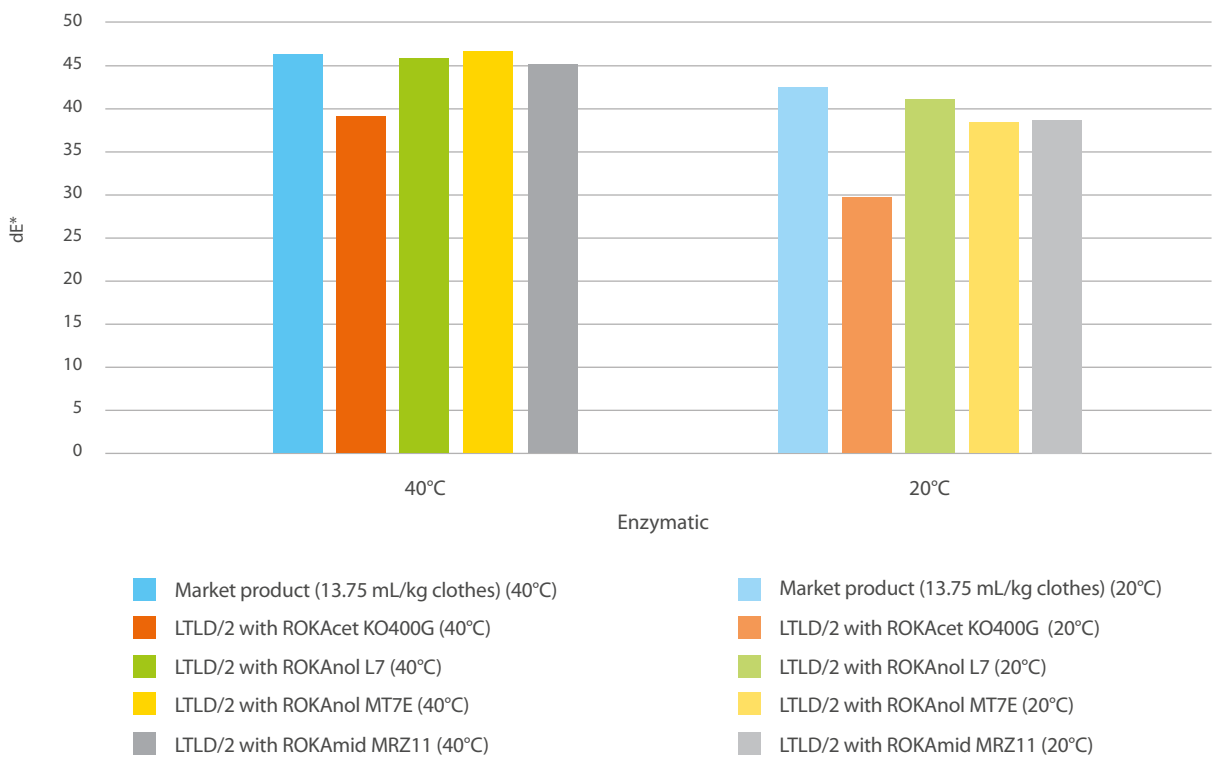
1. Mix Fluorescent brightener with water until dissolved.
2. Add Trisodium Citrate and mix until a homogeneous solution is obtained.
3. Then add **SULFOROKAnol L227/1** and mix.
4. Add **ROKAcet KO400G / ROKAnol L7 / ROKAnol MT7E / ROKAmid MRZ11** and mix.
5. Then add **EXOsoft PC35** and mix a homogeneous solution is obtained.
6. Add GLDA- Na_4 , mix.
7. Add Citric Acid to obtained pH in the mass around 7.5.
8. Finally, add Enzymes and mix until a clear liquid is obtained.



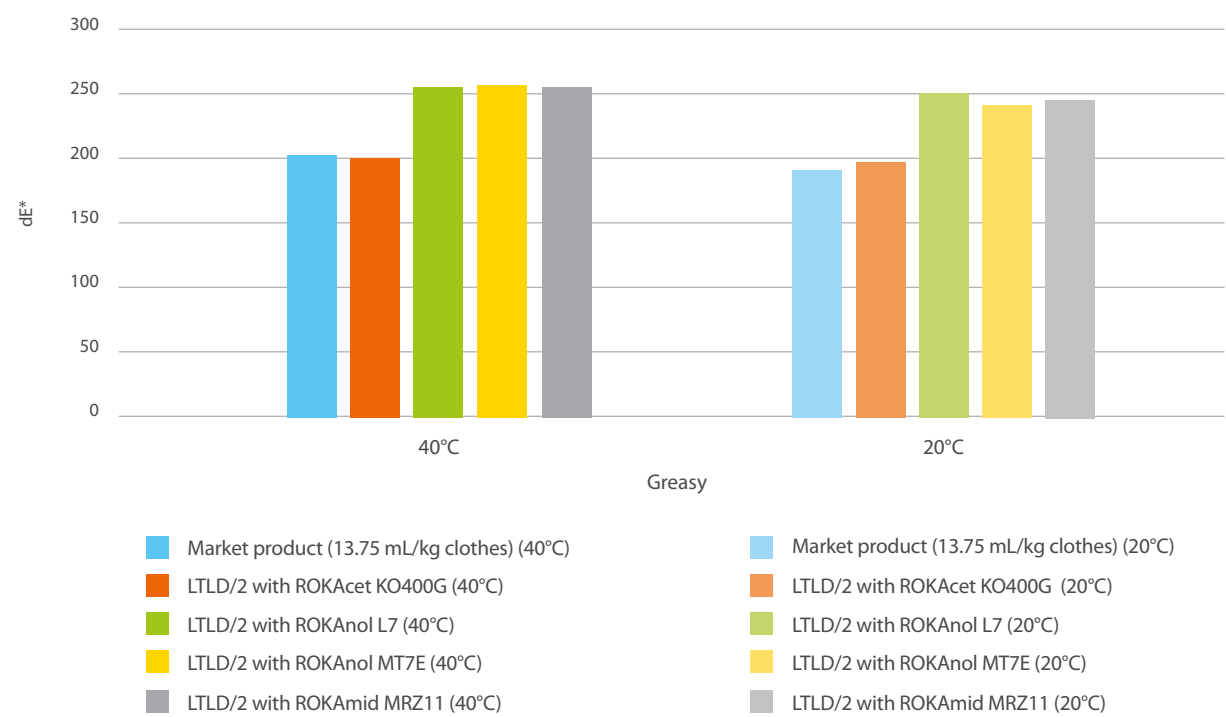
Low-Temp Liquid Detergents (15 mL/kg clothes)



Low-Temp Liquid Detergents (15 mL/kg clothes)



Low-Temp Liquid Detergents (15 mL/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.



Baby Laundry Detergent, BLD

Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	35.0	Removes stains/ foaming agent
Potassium Oleate	EXOsoft PO30	5.0	Breaks down stains
PEG-6 Glyceryl Cocoate/ Laureth-7/ Alcohols, C8-18-ethoxylated/ PEG 11-Rapeseedamide	ROKAcet KO400G/ ROKAnol L7/ ROKAnol MT7E/ ROKAmid MRZ11	3.0	Breaks down stains
Magnesium Laureth Sulfate	-	5.0	Removes stains/ foaming agent
Glycerin	-	6.0	Humectant
Tetrasodium Glutamate Diacetate	-	2.5	Chelator
Styrene/Acrylic Copolymer	-	0.5	Opacifier
Citric Acid	-	for pH ~ 9.0	pH regulator
Aqua	-	up to 100.0	Solvent

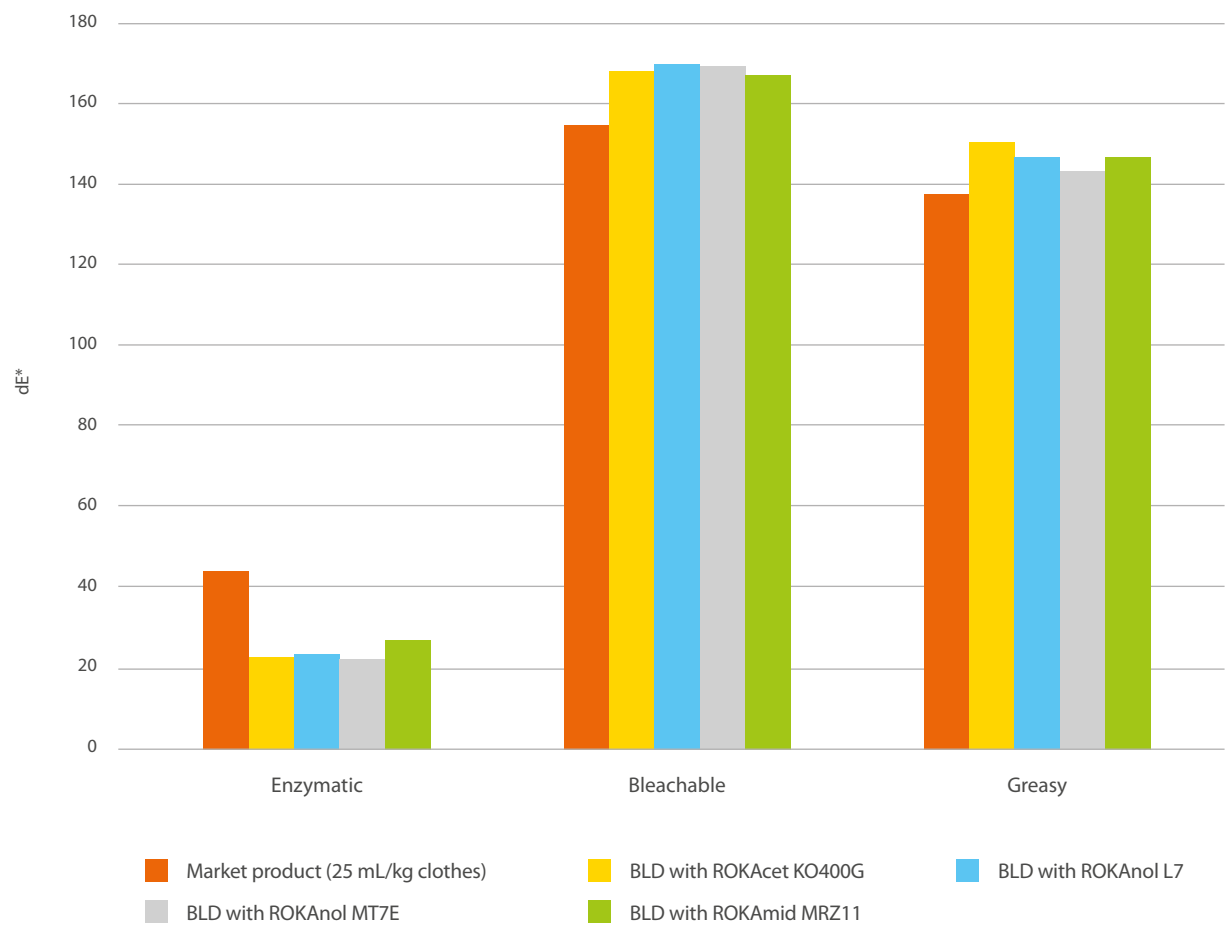
Appearance	visual method	Milky emulsion
pH		9.0
Viscosity [cP]	Brookfield LV, T: 20°C	<100

Procedure:

1. Mix **SULFOROKAnol L227/1** with water until dissolved.
2. Add **ROKAcet KO4W00G / ROKAnol L7/ ROKAnol MT7E / ROKAmid MRZ11** and mix.
3. Then add Magnesium Laureth Sulfate and mix.
4. Add **EXOsoft PO30** and mix.
5. Then add Styrene/Acrylic Copolymer and mix.
6. Add Glycerin, mix.
7. Add GLDA-Na₄, mix.
8. Finally, add Citric Acid to obtained pH in the mass around 9.



Baby Laundry Detergent (15 mL/kg clothes)



Parameter dE^* is the difference between the initial stain and the degree of its washing, higher dE^* , better detergency.



Laundry Capsules, LC/1

Compound	Brand name	Concentration [%]	Function
MIPA Laureth Sulfate (and) Propylene Glycol	SULFOROKAnol L290/1M	40.00	Removes stains/ wetting agent
PEG-6 Glyceryl Cocoate/ Laureth-7/ PEG 11-Rapeseedamide	ROKAcet KO400G/ ROKAnol L7/ ROKAmid MRZ11	32.00	Removes stains
Glycerin	–	18.00	Humectant
Tetrasodium Glutamate Diacetate	–	4.00	Chelator
Enzymes	–	1.00	Breaks down different types of stains
Fluorescent brightener	–	0.05	Optical brightener
Sodium Hydroxide	–	for pH 8.0 – 8.5	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	Gel
pH		7.5 – 8.5
Viscosity [cP]	Brookfield LV, T: 20°C	600 – 1300
Water content [%]	Karl Fischer method	<10

Procedure:

1. Mix Fluorescent brightener with water until dissolved.
2. Add Glycerin and GLDA-Na₄ mix.
3. Add ROKAcet KO400G / ROKAnol L7 / ROKAmid MRZ11 and mix.
4. Then add SULFOROKAnol L290/1M mix.
5. Add Sodium Hydroxide to obtained pH in the mass around 8.0-8.5
6. Finally, add Enzymes and mix.



Laundry Capsules, LC/2

Compound	Brand name	Concentration [%]	Function
MIPA Laureth Sulfate (and) Propylene Glycol	SULFOROKAnol L290/1M	40.00	Removes stains/ wetting agent
PEG-6 Glyceryl Cocoate	ROKAcet KO400G	17.00	Removes stains
Laureth-7	ROKAnol L7	15.00	Removes stains
Glycerin	–	18.00	Humectant
Tetrasodium Glutamate Diacetate	–	4.00	Chelator
Enzymes	–	1.00	Breaks down different types of stains
Fluorescent brightener	–	0.05	Optical brightener
Sodium Hydroxide	–	for pH ~ 8	pH regulator
Aqua	–	up to 100.0	Solvent

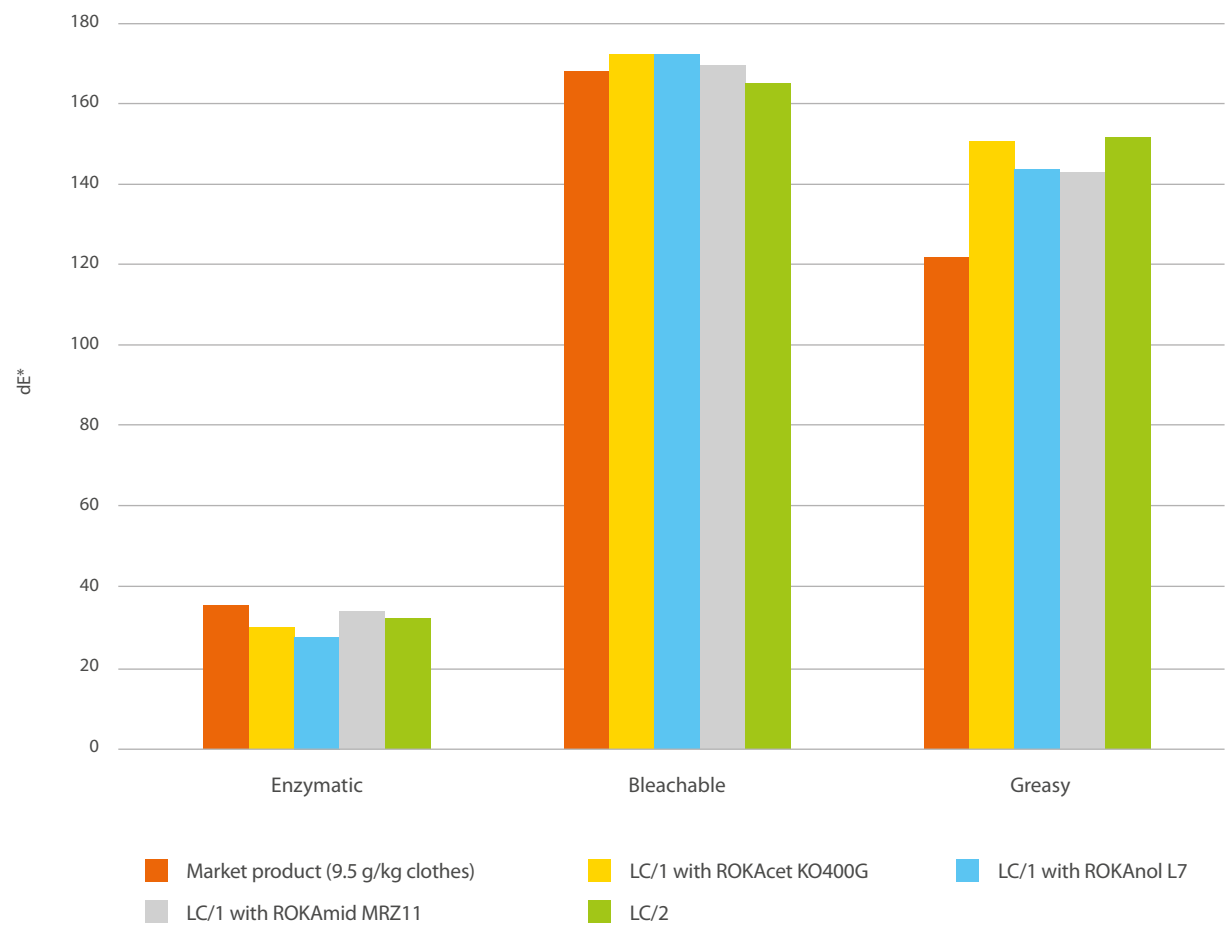
Appearance	visual method	Gel
pH		7.5 – 8.0
Viscosity [cP]	Brookfield LV, T: 20°C	600 – 900
Water content [%]	Karl Fischer method	<10

Procedure:

1. Mix Fluorescent brightener with water until dissolved.
2. Add Glycerin and GLDA-Na₄, mix.
3. Add **ROKAcet KO400G** and mix.
4. Then add **ROKAnol L7**, mix.
5. Then add **SULFOROKAnol L290/1M** and mix.
6. Add Sodium Hydroxide to obtained pH in the mass around 8.0.
7. Finally, add Enzymes and mix.



Laundry Capsules (8 g/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.





Washing Gel, WG

Compound	Brand name	Concentration [%]		Function
		Formulation 1	Formulation 2	
Sodium C12-15 Pareth Sulfate	SULFOROKAnol L370	14.6		Removes stains/ foaming agent
Alcohols, C8-18-ethoxylated	ROKAnol MT7E	9.0		Breaks down stains
Potassium Oleate	EXOsoft PO30	9.0	-	Breaks down stains
Potassium Cocoate	EXOsoft PC35	-	6.75	Breaks down stains
Tetrasodium Glutamate Diacetate	-	3.0		Chelator
Trisodium Citrate	-	2.5		Chelator
Enzymes		0.5		Breaks down different types of stains
Fluorescent brightener		0.1		Optical brightener
Citric Acid	-	for pH ~ 7.5		pH regulator
Aqua	-	up to 100.00		Solvent

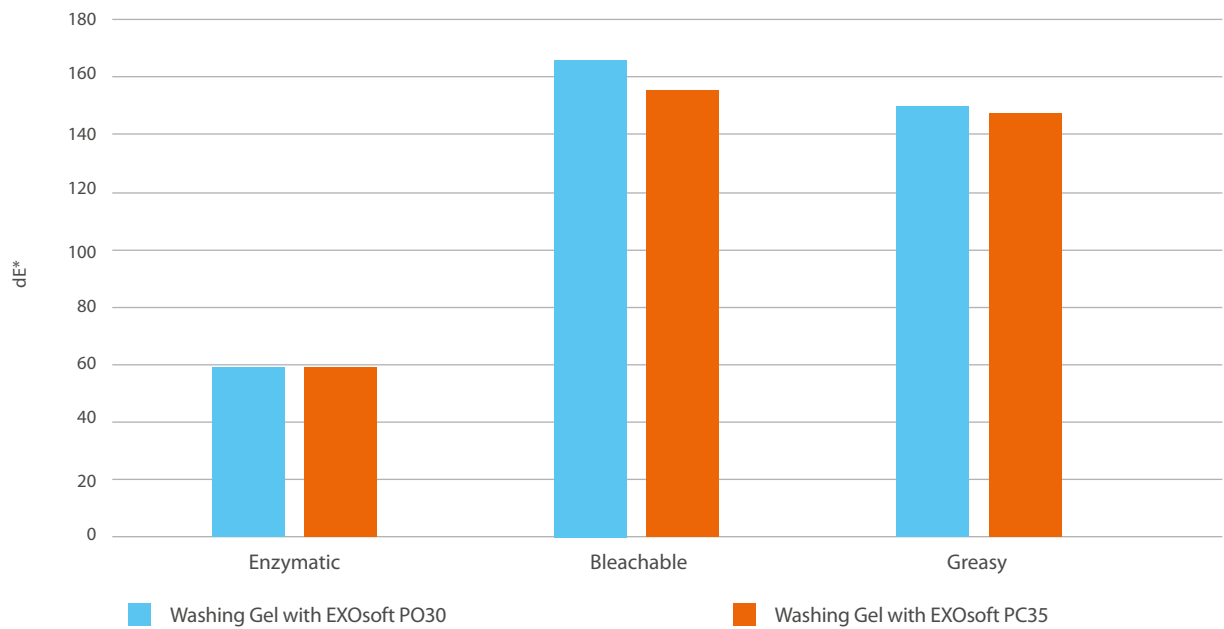
Appearance	visual method	Liquid
pH		~ 7.5
Viscosity [cP]	Brookfield LV, T: 20°C	<100

Procedure:

1. Mix fluorescent brightener with water until dissolved.
2. Add Trisodium Citrate and mix until a homogeneous solution is obtained.
3. Then add **SULFOROKAnol L370** and mix.
4. Add **ROKAnol MT7E** and mix.
5. Then add **EXOsoft PO30/EXOsoft PC35** and mix a homogeneous solution is obtained.
6. Add Tetrasodium Glutamate Diacetate, mix.
7. Add Citric Acid to obtained pH in the mass around 7.5.
8. Finally, add Enzymes and mix until a clear liquid is obtained.



Washing Gel (15 mL/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.



Fabric softness

The primary function of fabric softeners is to make fabrics soft and pleasant to the touch after washing.

The softness test was conducted using a proprietary method based

on a sensory (organoleptic) evaluation of the feel of cotton towels that had undergone a washing process using the tested fabric softeners.

Test conditions

- automatic washing machine
- cotton programme, 40°C
- water hardness (13 °dH)
- load – 2 kg of dry, white, new towels
- before testing, all towels were rinsed twice without detergent
- a reference sample was included for comparison
- the dosing of the market product was verified with the information on the label

Softness assessment

After the wash cycle was complete, the towels were dried at room temperature on a clothes drying rack. Once dry, fabric softness was evaluated organoleptically by a panel of five assessors through tactile assessment (hand feel).

Softness was assessed using a comparative ranking method against the reference sample. Each sample was assigned a rank from 1 to 3, where 1 represented the softest perceived hand feel and 3 the lowest perceived softness. The obtained rankings were used to compare the relative softening performance of the tested formulations.



Washing & Softening 2IN1, 2IN1/1

Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	16.7	Removes stains/ foaming agent
Isotrideceth-9	ROKAnol IT9	2.0	Softness-improving additive
Laureth-7	ROKAnol L7	1.0	Softness-improving additive
Dodecylbenzenesulfonic Acid	ABS Acid	0.4	Breaks down stains
Sodium Chloride	–	4.0	Rheology modifier
Enzymes	–	0.4	Breaks down different types of stains
Phenoxyethanol	–	0.1	Preservative
Parfum	–	0.2	Fragrance
Sodium Hydroxide	–	for pH 7.0-9.0	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	Clear liquid
pH		7.0 – 9.0
Viscosity [cP]	Brookfield LV, T: 20°C	600 – 1300

Procedure:

1. Mix **SULFOROKAnol L227/1** with water until dissolved.
2. Add **ROKAnol IT9** and **ROKAnol L7** and mix.
3. Add **ABS Acid** and mix.
4. Add sodium chloride and mix.
5. Add Sodium Hydroxide to obtained pH in the mass around 7.0 – 9.0.
6. Finally, add Phenoxyethanol, Parfum and Enzymes

Washing & Softening 2IN1, 2IN1/2

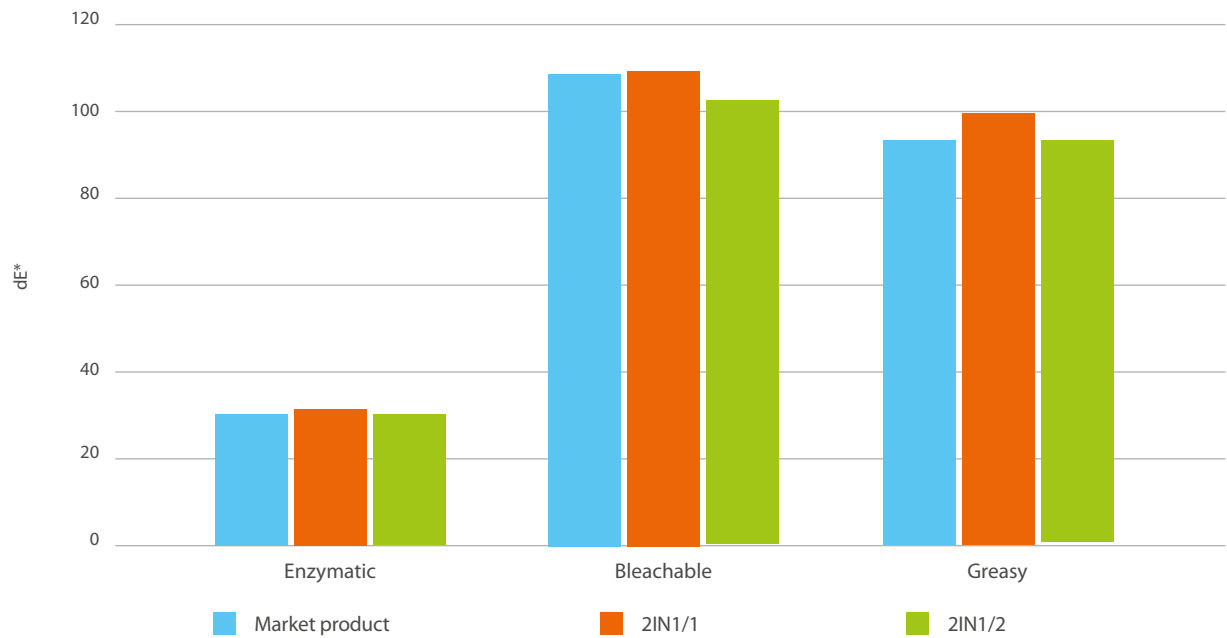
Compound	Brand name	Concentration [%]	Function
Sodium Laureth Sulfate	SULFOROKAnol L227/1	16.7	Removes stains/ foaming agent
PEG-15 Cocomonium Methosulfate	ROKAmin K15K	3.0	Anti-static agents/ softness-improving additive
Laureth-7	ROKAnol L7	1.0	Breaks down stains
Dodecylbenzenesulfonic Acid	ABS Acid	0.4	Breaks down stains
Sodium Chloride	–	4.4	Rheology modifier
Enzymes	–	0.4	Breaks down different types of stains
Phenoxyethanol	–	0.1	Preservative
Parfum	–	0.2	Fragrance
Sodium Hydroxide	–	for pH 7.0-9.0	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	Clear liquid
pH		7.0 – 9.0
Viscosity [cP]	Brookfield LV, T: 20°C	300 – 500

Procedure:

1. Mix **SULFOROKAnol L227/1** with water until dissolved.
2. Add **ROKAnol L7** and mix.
3. Then add **ROKAmin K15K** and mix.
4. Add **ABS Acid** and mix.
5. Add Sodium Chloride and mix until a clear liquid is obtained.
6. Add Sodium Hydroxide to obtained pH in the mass around 7.0 – 9.0.
7. Finally, add Phenoxyethanol, Parfum and Enzymes.

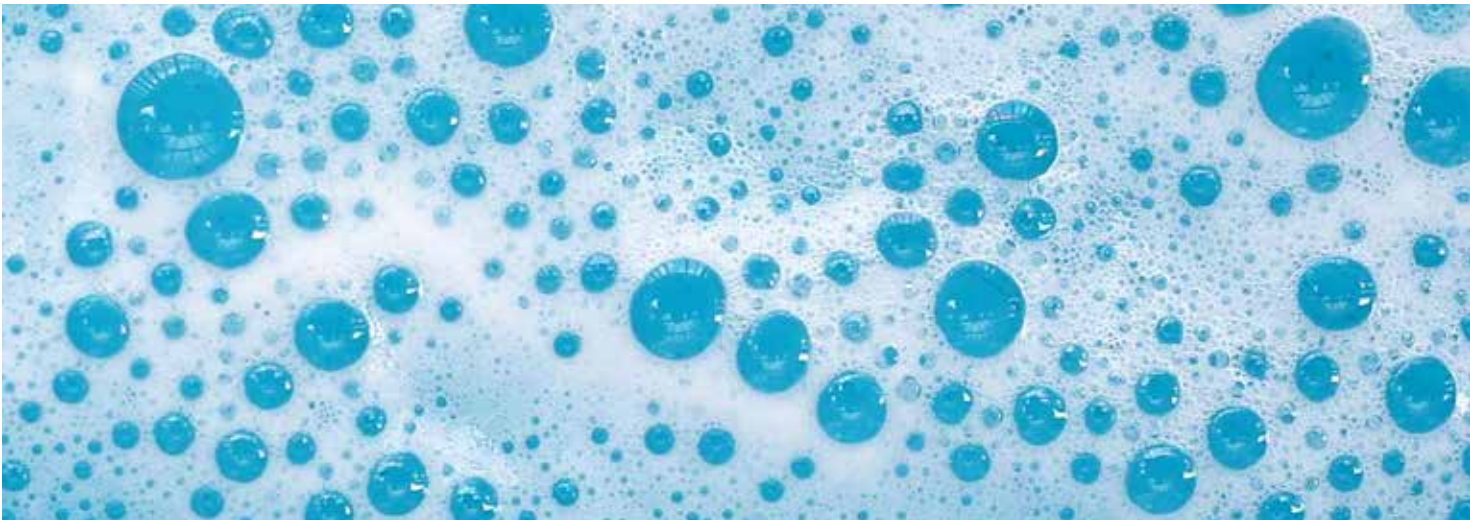
Washing & Softening 2IN1 (15 g/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.

Softness Test Results

	2IN1/1	2IN1/2	Market product
Result	2	1	1



Washing & Softening 2IN1 Concentrated, 2IN1/C1

Compound	Brand name	Concentration [%]	Function
Polyoxyalkylene Glycol Ether	ROKAnol LP420	10.0	Breaks down stains
MIPA Laureth Sulfate, Propylene Glycol	SULFOROKAnol L290/1M	9.2	Removes stains/ foaming agent
Potassium Oleate	EXOsoft PO30	7.4	Breaks down stains
PEG-15 Cocomonium Methosulfate	ROKAmin K15K	5.0	Anti-static agents/ softness-improving additive
Dodecylbenzenesulfonic Acid	ABS Acid	4.1	Rheology modifier
Glycerin	–	4.0	Humectant
Enzymes	–	1.0	Breaks down different types of stains
Tetrasodium Glutamate Diacetate	–	0.8	Chelator
Sodium Chloride	–	0.4	Rheology modifier
Phenoxyethanol	–	0.2	Preservative
Parfum	–	0.2	Fragrance
Sodium Hydroxide	–	for pH 7.0 – 9.0	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	Clear liquid
pH		7.0 – 9.0
Viscosity [cP]	Brookfield LV, T: 20°C	300 – 500

Procedure:

1. Mix **SULFOROKAnol L290/1M** with water until dissolved.
2. Then add **ROKAmin K15K** and mix.
3. Add **ABS Acid** and mix.
4. Add **EXOsoft PO30** a homogeneous solution is obtained.
5. **ROKAnol LP420** and mix.
6. Add Glycerin, GLDA, Sodium Chloride mix.
7. Add Sodium Hydroxide to obtained pH in the mass around 7.0 – 9.0.
8. Finally, add Phenoxyethanol, Parfum and Enzymes.

Washing & Softening 2IN1 Concentrated, 2IN1/C2

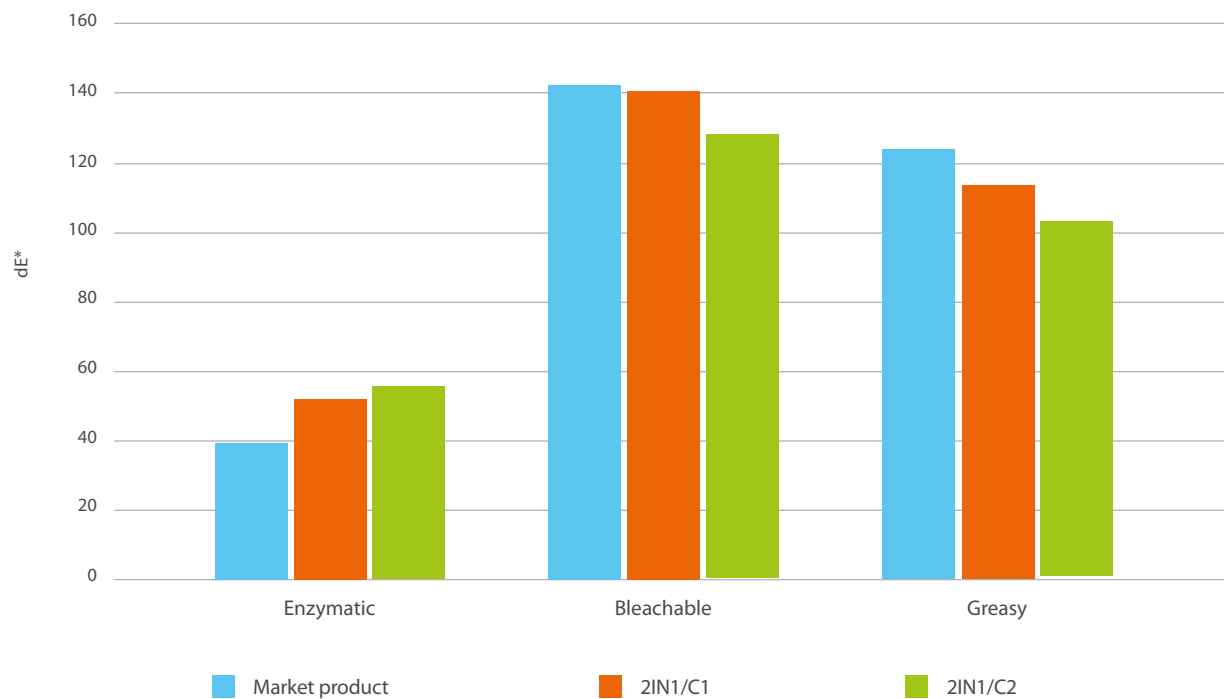
Compound	Brand name	Concentration [%]	Function
Polyoxyalkylene Glycol Ether	ROKAnol LP420	24.0	Breaks down stains/ low-foaming agents
Potassium Oleate	EXOsoft PO30	7.4	Breaks down stains
Sodium C12-15 Pareth Sulfate	SULFOROKAnol L370	7.1	Removes stains/ foaming agent
PEG-15 Cocomonium Methosulfate	ROKAmin K15K	5.0	Anti-static agents/ softness-improving additive
Glycerin	–	4.0	Humectant
Enzymes	–	1.0	Breaks down different types of stains
Tetrasodium Glutamate Diacetate	–	0.8	Chelator
Sodium Chloride	–	0.4	Rheology modifier
Phenoxyethanol	–	0.2	Preservative
Parfum	–	0.2	Fragrance
Citric Acid	–	for pH 7.0 – 9.0	pH regulator
Aqua	–	up to 100.0	Solvent

Appearance	visual method	Clear liquid
pH		7.0 – 9.0
Viscosity [cP]	Brookfield LV, T: 20°C	300 – 500

Procedure:

1. Mix **SULFOROKAnol L370** with water until dissolved.
2. Add **ROKAmin K15K** and mix.
3. Then add **EXOsoft PO30** and mix a homogeneous solution is obtained.
4. Add **ROKAnol LP420** and mix.
5. Add Glycerin, GLDA, Sodium Chloride, mix.
6. Add Citric Acid slowly to obtained pH in the mass around 7.0 – 9.0.
7. Finally, add Phenoxyethanol, Parfum and Enzymes.

Washing & Softening 2in1 Concentrated (15 ml/kg clothes)



Parameter dE* is the difference between the initial stain and the degree of its washing, higher dE*, better detergency.

Softness Test Results

	2IN1/C1	2IN1/C2	Market product
Result	1	2	3



Fabric Softener

Compound	Brand name	Concentration [%]	Function
Fatty acids, C10-20 and C16-18-unsatd., reaction products with triethanolamine, di-Me sulfate-quaternized, with addition of isopropyl alcohol	Tequat LC90i	6.0	Softening
Parfum	–	0.5	Fragrance
Aqua	–	up to 100.0	Solvent

Appearance	visual method	Milky liquid
pH		2.5 – 3.5

Procedure:

- 1. Heat the water to 50 – 55°C.
- 2. Warm the Tequat (50°C), add it to the water and mix (300 RPM).
- 3. Add the parfum.

Softness Test Results

	Faric softener	Market product
Result	1	1





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September 2026

The information in the catalogue is believed to be accurate and compiled to the best of our knowledge; however, it should be considered as introductory only. Detailed information about our products is available in TDS and MSDS.

The suggestions for product applications are based on our best knowledge.

The responsibility for the use of products in conformity or otherwise with the suggested application, and for determining product suitability for the user's own purposes rests with the user.

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