

PCC

Autocare

Formulations. Performance. Protection. Shine.

Local. Global. Integrated.


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

Polyols

- Polyether polyols
- Polyester polyols
- Prepolymers
- Polyurethane Systems

PCC ROKITA SA

Chlorine

- Chlorine
- MCAA
- Other Chlorine Downstream Product

PCC ROKITA SA

Phosphorus

- Phosphorus derivatives
- Naphthalene derivatives
- Polycarboxyethers (PCE)

PCC EXOL SA
PCC CHEMAX INC
PCC PCG OXYALKYLATES

Surfactants

- Anionic surfactants
- Cationic surfactants
- Nonionic surfactants
- Amphoteric surfactants (betaines)
- Chemical formulation

PCC SYNTEZA

Alkylphenols

- Nonylphenol
- Dodecylphenol
- Tristyrylphenol

PCC CONSUMER PRODUCTS SA

Consumer Products

- Household & industrial Cleaners, Detergents and Personal Care Products

PCC ROKITA SA

Energy

- Energy Production

PCC INTERMODAL SA

Logistics

- Intermodal transport
- Road Haulage
- Rail Transport

PCC BAKKISILICON HF.

Silicon

- Microsillica
- Silicon Metal

PCC SE

Holding & Projects

- Portfolio Management
- Project Development

Table of contents

01 / Introduction

Foaming Agents 8
Cleaning 8
Foamboosters 10
Emulsifiers-Solubilisers 10
Thickening Agents 11
Speciality products 12

02 / Body cleaning

2.1 Snow foam 15
Snow foam – premium 16
2.2 Car shampoo 17
Car shampoo – economical 18
Car shampoo – premium 18
Car shampoo with wax 19
2.3 Rinse aid 20
2.4 Windshield washer – summer 21
2.5 Windshield washer – winter 22

03 / Interior cleaning

3.1 Textile upholstery cleaners 25
Textile upholstery cleaner version 1 25
Textile upholstery cleaner version 2 27
Textile upholstery cleaner version 3 28
3.2 Leather upholstery cleaner 29
Leather upholstery cleaner – economic 30
Leather upholstery cleaner – standard 31
Leather upholstery cleaner – premium 32

3.3 All purpose cleaners 34
Multi-purpose cleaner version 1 34
Multi-purpose cleaner version 2 34
Multi-purpose cleaner version 3 35
Multi-purpose cleaner version 4 35
Interior cleaner concentrate 36
3.4 Dashboard matte and shine agents 38
Matte agent 38
Shine agent 39

04 / Products for removing stubborn stains

4.1 Traffic film remover 43
4.2 Rim cleaners 44
Rim cleaner – acidic pH 44
Rim cleaner – neutral pH 44
Rim cleaner – alkaline pH 45
Bloody Rim 46
4.3 Tyre cleaner 47
4.4 Bug removers 48
Bug remover – standard 48
Bug remover – pro 49
Bug remover – economic 50
Bug remover – premium 51
4.5 Degreasers 53
Car body degreaser version 1 53
Car body degreaser version 2 54
Car body degreaser version 3 55
4.6 Paste for cleaning chrome-plated parts 56

05 / Air fresheners

Air freshener in an applicator 58
Spray air freshener 58



01 / Introduction

The Auto Care industry encompasses a broad range of products designed for vehicle washing, cleaning and maintenance.
The dynamic growth of the market, increasing consumer awareness and rising expectations regarding product performance and ease of use are driving professional car washes, detailing studios and individual users alike to seek increasingly advanced solutions. This segment includes products for washing vehicle bodies and windows, cleaning and maintaining vehicle interiors, as well as specialist formulations used, among others, for removing road grime, tar and metal deposits, and for the care of tyres and exterior components.

Surfactants manufactured by PCC EXOL are key ingredients in the majority of formulations used in the Auto Care industry. Thanks to their functional properties, they ensure effective soil removal, efficient surface wetting, the formation of rich and stable foam, emulsification of hydrophobic substances and solubilisation of active ingredients. They are also used in degreasing products applied during decontamination processes, as well as in formulations containing natural and synthetic protective waxes.

This brochure is divided into two complementary sections. The first presents the PCC EXOL surfactant portfolio, organised according to the main functions and application areas of the products in Auto Care formulations. The second section provides examples of finished product formulations, demonstrating the practical use of the presented raw materials in the development of effective solutions for vehicle washing, cleaning and maintenance.

Roles of surfactants in vehicle cleaning and maintenance preparations

- Foaming Agent
- Cleaning
- Foamboosters
- Emulsifiers – Solubilizers
- Thickening Agents
- Speciality products



Foaming Agents

Product name	Chemical structure	Foaming Ability	Foam Density	Cleaning	Thickening	Economical-Premium (0 – economic, 5 – premium)
SULFOROKAnol L227/1	SLES 27%	●●●●●	●●●○○	●●●●○	●●●●●	4
SULFOROKAnol L270/1	SLES 70%					
SULFOROKAnol L327	Synthetic SLES 27%	●●●●●	●●●●○	●●●●●	●●○○○	2
SULFOROKAnol L370	Synthetic SLES 70%					
SULFOROKAnol LT227/1	Synthetic C12-14	●●●●●	●●●○○	●●●●●	○○○○○	3
SULFOROKAnol LT270/1	Synthetic C12-14				●○○○○	
ROSULfan D	Sodium Decyl Sulfate (SDS)	●●●●●	●●●●●	●●●○○	●●●○○	5
ROSULfan O	Sodium Olley Sulfate	●●○○○	●●○○○	●●●○○	●●●○○	4
ROSULfan L	Sodium Lauryl Sulfate (SLS)	●●●●○	●●●○○	●●●○○	●●●○○	3
ROSULfan AOS	Olefins, C14-C16, sulfonated, sodium salts	●●●●●	●●●●●	●●●●○	●●●●●	5
ROSULfan A	Ammonium Lauryl Sulfate	●●○○○	●●○○○	●●●●○	●●○○○	4
ABSNa (15%, 25%, 30%, 50%, 60%)	ABS Paste	●●●●●	●●●●○	●●●●●	●●●●○	2
ROKAtend LS	Sodium Lauroyl Sarcosinate	●●●○○	●●●●○	●●●●○	○○○○○	5

Cleaning

Product name	Chemical name	Foaming	Degreasing	Wetting	Detergency	Eco-Premium
ROKAnol GA3	C10 alcohol, ethoxylated	○○○○○	●●●●●	●●●●○	●●●○○	●●●○○
ROKAnol GA5	C10 alcohol, ethoxylated	○○○○○	●●●●○	●●●●●	●●●○○	●●●○○
ROKAnol GA5W	C10 alcohol, ethoxylated	●○○○○	●●●●○	●●●●○	●●●●○	●●○○○
ROKAnol GA7W	C10 alcohol, ethoxylated	●○○○○	●●●●○	●●●●○	●●●●●	●●○○○
ROKAnol GA8W	C10 alcohol, ethoxylated	●○○○○	●●●●○	●●●●○	●●●●●	●●○○○
ROKAnol NL6	C9-11 alcohol, ethoxylated	●●○○○	●●●○○	●●●○○	●●●●○	●●●○○
ROKAnol NL8	C9-11 alcohol, ethoxylated	●●●○○	●●●●○	●●○○○	●●●○○	●●●○○
ROKAnol NL9	C9-11 alcohol, ethoxylated	●●○○○	●●●●○	●●○○○	●●●○○	●●●○○
ROKAnol NL12W/80	C9-11 alcohol, ethoxylated	●○○○○	●●●○○	○○○○○	●●●○○	●●●○○
ROKAnol IT3	Trideceth-3	●○○○○	●●●○○	●●●○○	●●○○○	●●●●○
ROKAnol IT5	Trideceth-5	●●○○○	●●●○○	●●●●○	●●●●○	●●●●○
ROKAnol IT6	Trideceth-6	●●○○○	●●●○○	●●●●○	●●●●○	●●●○○

ROKANol IT7	Isotrideceth-7	●●○○○	●●●○○	●●●●○	●●●●○	●●●○○
ROKANol IT8	Isotrideceth-7	●●●○○	●●●○○	●●●●○	●●●●○	●●●○○
ROKANol IT8W	Isotrideceth-8	●●○○○	●●●○○	●●●●○	●●●●●	●●●○○
ROKANol IT9	Isotrideceth-9	●●○○○	●●●●○	●●●●○	●●●●●	●●●○○
ROKANol IT9W	Isotrideceth-9	●●●○○	●●●○○	●●●●○	●●●●●	●●●○○
ROKANol ID5	C9-C11 alcohol, C10 rich, ethoxylated	●●●○○	●●●○○	●●●●●	●●●●○	●●●●●
ROKANol ID7	C9-C11 alcohol, C10 rich, ethoxylated	●●●○○	●●●○○	●●●●○	●●●●●	●●●●●
ROKANol ID8	C9-C11 alcohol, C10 rich, ethoxylated	●●●○○	●●●○○	●●●●○	●●●●●	●●●●●
ROKANol L7	Alcohols, C12-14, ethoxylated	●●●○○	●●●○○	●●●○○	●●●●●	●●●○○
ROKANol M7	Alcohols, C10-C18, ethoxylated	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○
ROKANol TMP7	Alcohols, C13-15, branched and linear, ethoxylated	●●●●○	●●●○○	●●●○○	●●●●●	●●●○○
ROKANol UD3	C6-12 alcohol, ethoxylated	●●●○○	●●○○○	●●●●○	●●●●●	●●●●○
ROKANol DB7	Alcohols, C12-15, ethoxylated	●●●●○	●●●○○	●●●●○	●●●●○	●●●●●
ROKANol DB9	C12-15 alcohol, ethoxylated	●●●○○	●●●○○	●●●●○	●●●●○	●●●●●
ROKANol GT7	C9-16 alcohol ethoxylated	●●●●○	●●●●○	●●●●○	●●●●○	●●●○○
ROKANol GT8	C9-16 alcohol ethoxylated	●●●●○	●●●●○	●●●●○	●●●●●	●●●○○
ROKANol GT9	C9-16 alcohol ethoxylated	●●●●○	●●●●○	●●●●○	●●●●○	●●●○○
ROKANol GT9W	C9-16 alcohol ethoxylated	●●●●○	●●●●○	●●●●○	●●●●○	●●●○○
ROKANol LP1012	C12-C14 alcohol, ethoxylated, propoxylated	○○○○○	●●●○○	●●○○○	●●○○○	●●●●●
ROKANol LP2024W/95	Decanol, ethoxylated, propoxylated	○○○○○	●●●●●	●●●●○	●●●○○	●●●●●
ROKANol LP31	Alcohols, C12-14, ethoxylated, propoxylated	○○○○○	●●●●○	●●●○○	●●●●○	●●●●●
ROKANol LP2227	Oxirane, 2-methyl-, polymer with oxirane, mono (2-propylheptyl) ether	○○○○○	●●●○○	●●●○○	●●○○○	●●●●●
ROKANol LP3135	Fatty alcohol polyglycol ether	○○○○○	●●●●●	●●●○○	●●●○○	●●●●●
ROKANol LP3943	Alcohol, C12-15, ethoxylated propoxylated	○○○○○	●●○○○	●●○○○	●●○○○	●●●●●
ROKANol LP3841	C8-18 alcohol, ethoxylated propoxylated	●●●○○	●●○○○	●●●○○	●●●○○	●●●●●
ROKANol LP420	Undecyl alcohol, ethoxylated, propoxylated	○○○○○	●●●●○	●●●●○	●●●●○	●●●●●
EXOcon B27	mixture of anionic surfactants	●●●●●	●●○○○	●●●○○	●●●○○	●●●○○
ROKAmid MRZ4	PEG-4 RAPESEEDAMIDE	●●○○○	●●●○○	●●○○○	●●●●○	●●●●●

Foamboosters

Product name	Chemical structure	Foaming	Foam density	Foam Stability	Eco-premium
ROKAmina K30	Cocamidopropyl betaine	●●●○○	●●●●○	●●●○○	●●○○○
ROKAmina K40/K40HC	Cocamidopropyl betaine	●●●●○	●●●●○	●●●○○	●●●○○
ROKAmina K30K	Cocamidopropyl betaine	●●●●●	●●●●●	●●●●○	●●●●●
ROKAmina K30B	Coco-betaine	●●●●●	●●●●●	●●●●●	●●●●●
ROKAmid KAD	Cocamide DEA	●●●○○	●●●○○	●●●●●	●●●●○
ROKAmid KAD/2A	Cocamide DEA	●●●○○	●●●○○	●●●●●	●●●○○
ROKAcet KO400G	PEG-6 Glyceryl Cocoate	●●●●○	●●●●○	●●●●○	●●●●●
ROKAcet KO300G	PEG-7 Glyceryl Cocoate	●●●●○	●●●●○	●●●●○	●●●●●

Emulsifiers-Solubilisers

Product name	Chemical name	HLB	Emulsifier/Solubilizator
ROKAnol IT3	Trideceth-3	8.0	E
ROKAnol IT5	Trideceth-5	10.5	E
ROKAnol IT7	Trideceth-6	12.1	E
ROKAnol IT9	Isotrideceth-9	13.3	E/S
ROKwinol 20	Polysorbate 20	16.7	E/S
ROKwin 80	Sorbitan oleate	4.3	E
ROKwinol 80	Polysorbate 80	15.0	E
ROKAcet R26	Castor oil, ethoxylated	11.0	E
ROKAcet R40	Castor oil, ethoxylated	13.0	E
ROKAcet HR40	Hydrogenated castor oil, ethoxylated	13.5	S
ROKAcet HR40W	Hydrogenated castor oil, ethoxylated	13.5	S
ROKAnol K18	Alcohols, C16-18 and C18-unsatd., ethoxylated	15.8	E
ROKAnol S6	Steareth-6	8.0	E
ROKAnol S20	Steareth-20	14.0	E
ROKAnol S30W/30	Steareth-30, aqueous solution	16.8	E
EXOemul OM4	Emulsyfing blend	8.2	E
ROKAnol GA5	Alcohols C10, ethoxylated	12.6	E

ROKAnol GA7	Alcohols C10, ethoxylated	14.0	E
ROKAnol GA8	Alcohols C10, ethoxylated	14.5	E
ROKAmin K5	Amines, C12-18 alkyl, ethoxylated	6.0	E
ROKAmin K15	Amines, C12-18 alkyl, ethoxylated	16.0	E
ROKAnol L5P5	Alcohols, C12-14, ethoxylated propoxylated	7.0	S
ROKAnol L4	Laureth-4	10.0	S
EXOcare HTW1	Mixture of nonionic surfactants	–	S

Thickening Agents

Product name	Chemical name	Foaming
ROKAmid KAD	Cocamide DEA	●●●●○
ROKAmid KAD/2A	Cocamide DEA	●●●●○
ROKAmid RAD	Rapamide DEA	●●●○○
Rokamia K30	Cocamidopropyl betaine	●●●●○
ROKAmina K40	Cocamidopropyl betaine	
Rokamina K30K	Cocamidopropyl betaine	●●●●○
ROKAmina K30B	Coco-betaine	●●●●●



Speciality products

Product Name	Function
ROSULfan E	Solubilisation
SULFOROKAnol IT330	Insects removal
Sulfobursztynian DOSS70GP	Super wetting agent
Sulfobursztynian DOSS70E	Super wetting agent
EXOtrope CS	Antistatic agent / drying agent
ROKAmin K5	Emulsifier
ROKAmin K15	Emulsifier
ROKAmin K15K	Antistatic agent / drying agent
EXOlat MC60	Sequestrant
EXOlat C40	Seqeustrant
ROKAmin SRk8	Antistatic agent
ROKAmer 2000	Foam control agent
EXOsoft PC35	Soft cleanig
EXOsoft PO30	Soft cleanig
Exoclean AC	Acidic autotank cleaner
EXOclean AL.	Alkaline autotank cleaner
Exoclean BCK	Super degreasing agent
EXOantifoam S100	Anti foaming agent







02 / Body cleaning
Snow foam, car shampoo, rinse aid

2.1 Snow foam

Ingredient	Percentage [%]	Function
ROSULfan D	17.0	Cleaning agent, foaming agent
ROKAmina K30K	7.0	Foam stabiliser
SULFOROKAnol L227/1	7.0	Foaming agent
EXOlat C40	2.0	Sequestrant
2-(2-butoxyethoxy)ethanol (BDG)	2.0	Solvent, foam enhancer
Water	up to 100%	Solvent

The product should be used at a dilution of 1:5 to 1:20, depending on the severity of staining

Preparation procedure

1. Add **SULFOROKAnol L227/1** to a measured quantity of water and mix thoroughly
1. Add **ROSULfan D**, **ROKAmina K30K** and **EXOlat C40** (in that order), mixing each time.
2. Add BDG and mix until a homogeneous liquid is obtained.

Parameters

physical appearance	Clear liquid
pH at 25°C	6-7
Viscosity at 20°C, cP	<10
Solidification point, °C	< 0

Snow foam – in-use tests

Snow foam 1 – 1:9 concentration



Directly after application



After 1 minute from application

Reference formulation – 1:9 concentration



Directly after application



After 1 minute from application

Test methodology:

A test of foaming capacity of the products on the surface of a car bonnet was carried out. The test was carried out using a Karcher model K7 pressure washer with a P.A. SpA model LS 3 foam lance. After diluting the product to the indicated concentration in the tank of the foam lance, the surface of the bonnet was sprayed with the product at the maximum capacity of the foam lance. After application, a review photo was taken; after waiting 1 minute from application, another photo was taken. Evaluation of the product is based on a visual comparison of the foam obtained at the time of application and after 1 minute.

Snow foam – premium

Ingredient	Percentage [%]	Function
SULFOROKAnol L270/1	14.5	Cleaning agent, foaming agent
ROSULfan AOS	10.0	Foaming agent, foam stabiliser
ROKAnol GA9	5.0	Cleaning agent, degreasing agent
Tetrasodium EDTA salt (40%)	2.0	Chelating agent
Citric acid – monohydrate	up to pH=7	pH regulator
Water	up to 100%	Solvent

The product should be used at a dilution of 1:5 to 1:20, depending on the severity of staining

Preparation procedure

1. Add **SULFOROKAnol L270/1** to a measured quantity of water and mix thoroughly.
2. Then add **ROSULfan AOS** and **ROKAnol GA9,** mixing each time.
3. Then add citric acid and an aqueous solution of sodium EDTA salt. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	6-7
Viscosity at 20°C, cP	<10
Solidification point, °C	< 0

Snow foam – premium – in-use tests

Snow foam 1 – 1:9 concentration



Directly after application



After 1 minute from application

Reference formulation – 1:9 concentration



Directly after application



After 1 minute from application

Test methodology:

A test of foaming capacity of the products on the surface of a car bonnet was carried out. The test was carried out using a Karcher model K7 pressure washer with a P.A. SpA model LS 3 foam lance. After diluting the product to the indicated concentration in the tank of the foam lance, the surface of the bonnet was sprayed with the product at the maximum capacity of the foam lance. After application, a review photo was taken; after waiting 1 minute from application, another photo was taken. Evaluation of the product is based on a visual comparison of the foam obtained at the time of application and after 1 minute.

2.2 Car shampoo

Ingredient	Percentage [%]	Function
ROSULfan E	27.0	Cleaning agent
SULFOROKAnol L227/1 SULFOROKAnol L327	11.0	Cleaning agent, foaming agent
ROKAmina K40HC	5.0	Foam stabiliser
EXOlat C40	2.0	Sequestrant
Sodium carbonate	1.5	pH regulator, detergency enhancer
Sodium metasilicate	1.5	pH regulator, detergency enhancer
Water	up to 100%	Solvent

The product should be used at a dilution of 1:5 to 1:20, depending on the severity of staining

Preparation procedure

1. Mix **SULFOROKAnol L325 / SULFOROKAnol L227/1** with half the required quantity of water until dissolved.
2. Then add **ROKAmina K40HC** to the solution and mix. Then add **ROSULfan E** and mix until a homogeneous solution is obtained.
3. Prepare a second solution in a separate vessel. Mix sodium carbonate and sodium metasilicate with the remaining water. While mixing, add **EXOlat C40** and mix until a homogeneous solution is obtained.
4. Finally, pour solution 2 in portions into the still mixed solution 1.

Parameters

physical appearance	Clear liquid
pH at 25°C	12-13
Viscosity at 20°C, cP	<100
Solidification point, °C	Approx. – 10



Car shampoo – economical

Ingredient	Percentage [%]	Function
EXOCon B27	8.0	Cleaning agent, foaming agent
ROKAmina K40HC	5.0	Cleaning agent, foam stabiliser
EXOlat MC60	2.0	Sequestrant
Sodium carbonate	2.0	Detergency enhancer
Sodium metasilicate	3.0	pH regulator, detergency enhancer
Water	up to 100%	Solvent

The product should be used at a dilution of 1:3 to 1:10, depending on the severity of staining.

Preparation procedure

1. First, mix **EXOcon B27** with half the required quantity of water until dissolved.
2. Then add **ROKAmina K40HC** to the solution and mix until a homogeneous mass is obtained.
3. Prepare solution no. 2 in a separate container. To do this, mix the sodium carbonate and sodium metasilicate with the remaining water. While mixing, add **EXOlat MC60** to the remaining ingredients and mix until a homogeneous solution is obtained.
4. Finally, pour solution no. 2 in portions into the still mixed solution no. 1.

Parameters

physical appearance	Yellow opaque liquid
pH at 25°C	12-13
Viscosity at 20°C, cP	< 4000
Solidification point, °C	Approx. –10

Car shampoo – premium

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol L7	8.0	Cleaning agent, foaming agent
SULFOROKAnol L227/1	10.0	Cleaning agent, foaming agent
ROKAmina K40HC	5.0	Cleaning agent, foam stabiliser
Sodium carbonate	2.0	Detergency enhancer
Cetyl alcohol	0.1	Foam stabiliser
Trisodium salt of methylglycinediacetic acid (MGDA*Na4)	2.0	Chelating agent
Water	up to 100%	Solvent

The product should be used at a dilution of 1:5 to 1:20, depending on the severity of staining.

Preparation procedure

1. A weighed quantity of cetyl alcohol was poured over with water at a temperature of 40-50°C. The mixture of alcohol and water was mixed until the alcohol melted.
2. Sodium carbonate was added and mixed until dissolved. The temperature was maintained between 40 and 50°C throughout the process.
3. Then, **SULFOROKAnol L227/1, ROKAnol L7** and **ROKAmina K40HC** were added (in that order), each time mixing until dissolved before adding the next ingredient.
4. Finally, MGDA*Na4 was added, after which the heating was turned off and the preparation was mixed until stabilized at ambient temperature.

Parameters

physical appearance	Clear liquid
pH at 25°C	10-11
Viscosity at 20°C, cP	200-300
Solidification point, °C	Approx. – 10

Car shampoo with wax

Ingredient	Percentage [%]	Function
ROKAnol K18	1.0	Wax emulsifier
ROKAnol IT9	15.0	Cleaning agent
Carnauba wax	2.2	Polishing agent
Oleic acid	0.3	Wax emulsifier, car body protectant
Monoethanolamine (MEA)	0.3	pH stabiliser
Water	up to 100%	Solvent

The product should be used at a dilution of 1:3 to 1:10, depending on the severity of staining.

Preparation procedure

1. In a vessel, the wax was melted with oleic acid at 85°C.
2. A mixture of **ROKAnol K18**, MEA and 12.2% water was prepared in a separate vessel. The ingredients were mixed thoroughly by heating to approximately 90°C.
3. The solution prepared in item 2 was slowly added, via dripping, into the mixture prepared in item 1.
4. A heated mixture of **ROKAnol IT9** and the remaining water was then slowly added, while the preparation was continuously mixed.
5. The entire preparation was mixed and gradually cooled to ambient temperature.

Parameters

physical appearance	Opaque milky beige liquid
pH at 25°C	9-10
Viscosity at 20°C, cP	<100
Solidification point, °C	Approx. – 10



2.3 Rinse aid

Ingredient	Percentage [%]	Function
ROKAmin K15K	8.0	Cleaning agent, foaming agent
ROKAmin K5	31.0	Cleaning agent, foam stabiliser
Isopropyl myristate	2.0	Sequestrant
Water	up to 100%	Solvent

The product should be used at a dilution of 1:3 to 1:10

Preparation procedure

1. A measured quantity of water placed in a vessel was heated in a warm water bath (to 40°C). Isopropyl myristate was added to the water and the preparation mixed,
2. Then **Rokamin K5** was added and the preparation was mixed thoroughly. When a homogeneous solution was obtained, **Rokamin K15K** was added and the preparation was mixed again.
3. The entire solution was removed from the water bath and slowly cooled while continuously mixed.

Parameters

physical appearance	Yellow/amber clear liquid
pH at 25°C	7-8
Viscosity at 20°C, cP	Approx. 50
Solidification point, °C	< 0



A section of a car body with and without the polish applied after rinsing with water. Observed hydrophobic effect of the product.

2.4 Windshield washer – summer

Ingredient	Percentage [%]	Function
SULFORKAnol LT227/1 / SULFOROKAnol L227/1	2	Cleaning agent
ROKAnol IT3	0.5	Wetting agent
Ethanol	3	Solvent
Water	up to 100%	Solvent

Ready to use

Preparation procedure

1. Mix ethanol with water, then add **SULFOROKAnol LT227/1 / SULFOROKAnol L227/1** and **ROKAnol IT3,** mix each time.

Parameters

physical appearance	Clear liquid
pH at 25°C	7-8
Viscosity at 20°C, cP	< 10
Solidification point, °C	< 0

Windshield washer – summer



Sumer windshield washer before



Summer windshield washer after



Water before



Water after

In use test:

Soiled glass with hydrofobic dirt was removed with car wiper mounted on scrub tester during windshield washer spraying c.a. 30 ml. Determianation of result is based on scaned pictures of glas plates before and after cleaning.

2.5 Windshield washer – winter

Ingredient	Percentage [%]	Function
SULFORKAnol LT227/1	3	Cleaning agent
ROKAnol GT7	2	Wetting agent
BDG	2	Solvent
Ethanol	35	Solvent , anti freezing agent
Sodium benzoate	0.2	Corrosion inhibitor
Water	up to 100%	Solvent

Ready to use

Preparation procedure

1. Mix ethanol and BDG with water, then add **SULFOROKAnol LT227/1** and **ROKAnol GT7**, mix each time. Add sodium benzoate and mix.

Parameters

physical appearance	Clear liquid
pH at 25°C	7-8
Viscosity at 20°C, cP	< 10
Solidification point, °C	< -20

Windshield washer – winter



Winter windshield washer before



Winterer windshield washer after



Water before



Water after

In use test:

Soiled glass with salty was removed with car wiper mounted on scrub tester during windshield washer spraying c.a. 30 ml. Determianation of result is based on scaned pictures of glas plates before and after cleaning.





03 / Interior cleaning

upholstery cleaners, APC, dashboard matte and shine agents

3.1 Textile upholstery cleaner version 1

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROSULfan L	2.0	Cleaning agent, foaming agent
ROKAtend LS	1.0	Cleaning agent
ROKAmina K30	0.5	Cleaning agent, foam stabiliser
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

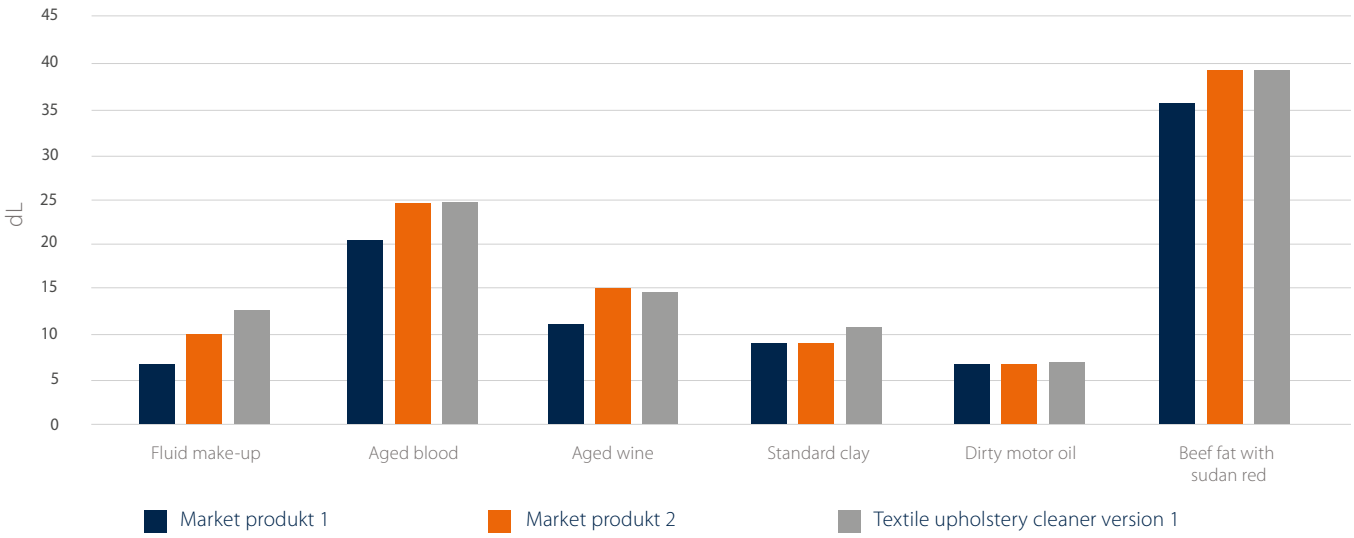
Weigh out an appropriate quantity of water. Then add surfactants, i.e. **ROSULfan L, ROKAtend LS, ROKAmina K30**. Mix each time until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	10-11
Viscosity at 20°C, cP	< 10
Solidification point, °C	1



Textile upholstery cleaner version 1 – detergency test on cotton fabric



For the evaluation of detergency, different types of stains for which a particular formulation has the best cleaning properties were selected.

Fabric cleaning test:

Model test fabric MON-PCC02 (cotton) – soiled with 15 different types of stains. The stains are divided into three categories, depending on the removal mechanism: enzymatic, bleach and greasy. Prepare 30 ml of preparations, which should be poured on the test fabric before washing. Put the test fabrics and 2kg of white cotton towels into an automatic washing machine. Run the program dedicated to cotton „40°C". Washing time is 2h 50 min. At the end of the rinse cycle, remove the fabrics from the washing machine and leave to dry. After washing, perform a spectrophotometric measurement of the parameter of total colour difference dE* as the difference before and after washing, following the CIELab method.

The total colour difference dE* is determined as follows:

$$dE^* = \sqrt{dL^{*2} + da^{*2} + db^{*2}}$$

dL* – luminance (brightness) difference = $L^*_{AFTER} - L^*_{BEFORE}$
da* – difference of colour parameter, from green to magentic = $a^*_{AFTER} - a^*_{BEFORE}$
db* – difference of colour parameter, from blue to yellow = $b^*_{AFTER} - b^*_{BEFORE}$



Textile upholstery cleaner version 2

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROSULfan A	2.0	Cleaning agent, foaming agent
ROKAnol L7	2.0	Cleaning agent
ROKAmina K30B	3.0	Cleaning agent, foam stabiliser
Water	up to 100%	Solvent

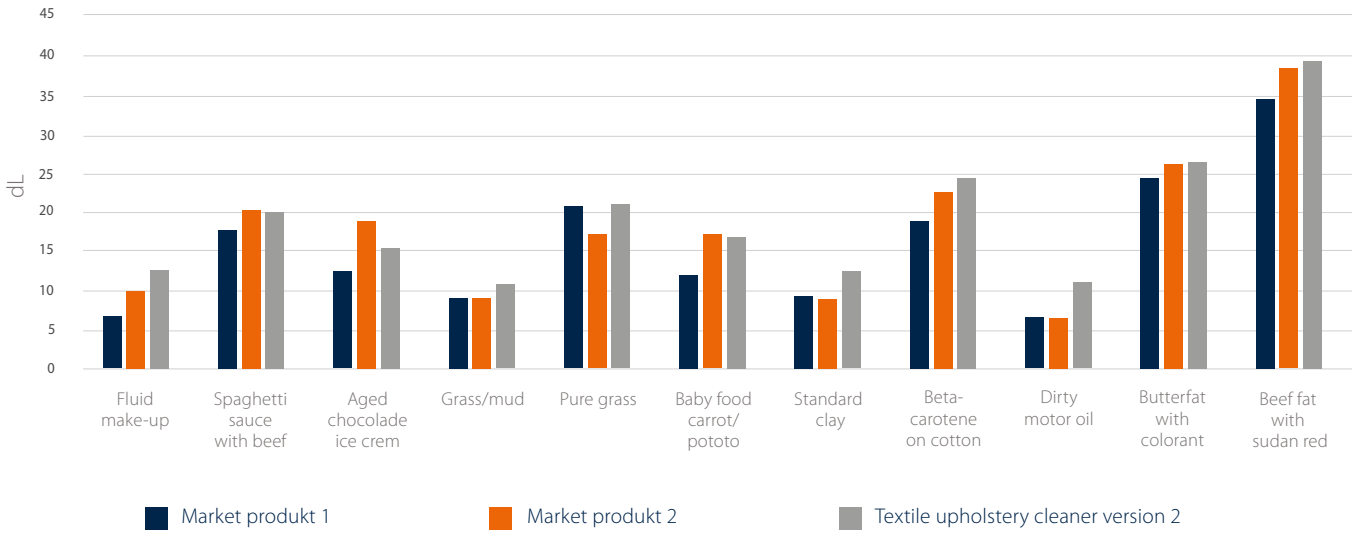
Preparation procedure

Weigh out an appropriate quantity of water. Then add surfactants, i.e. **ROSULfan A, ROKAnol L7, ROKAmina K30B.**
Mix each time until uniform was mixed until stabilized at ambient temperature.

Parameters

physical appearance	Clear liquid
pH at 25°C	5-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 0
The product meets the criteria for ingredients in formulations certified by the Nordic Swan	√

Textile upholstery cleaner version 2 – detergency test on cotton fabric



Textile upholstery cleaner version 3

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
SULFOROKAnol L227/1	10.0	Cleaning agent, foaming agen
ROKAnol NL8/NL9	5.0	Cleaning agent
ROKAmina K40HC	3.0	Foam stabiliser
Water	up to 100%	Solvent

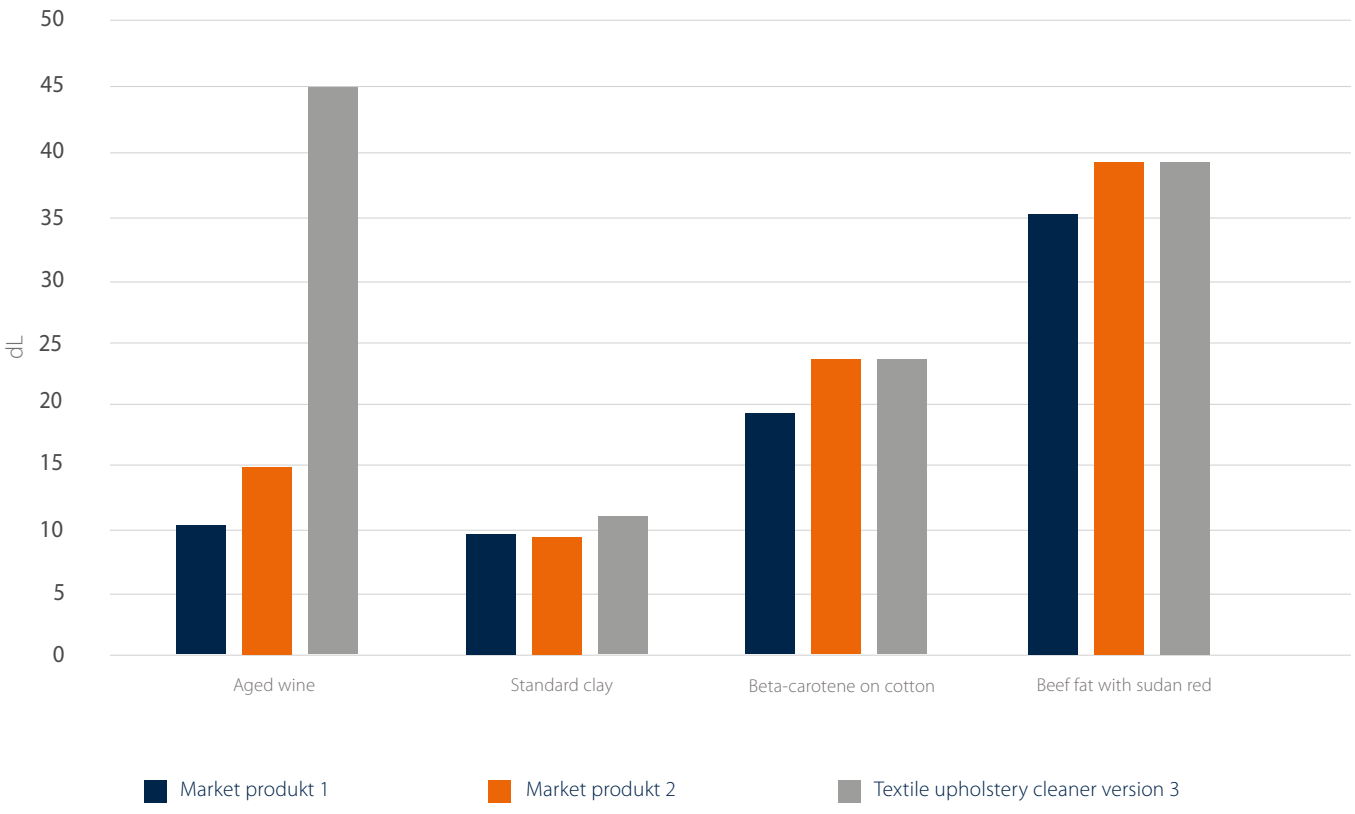
Preparation procedure

Weigh out an appropriate quantity of water. Then add the following products, in the specified order: **SULFOROKAnol L227/1, ROKAnol NL8/NL9** and **ROKAmina K40 HC**. Mix each time until uniform.

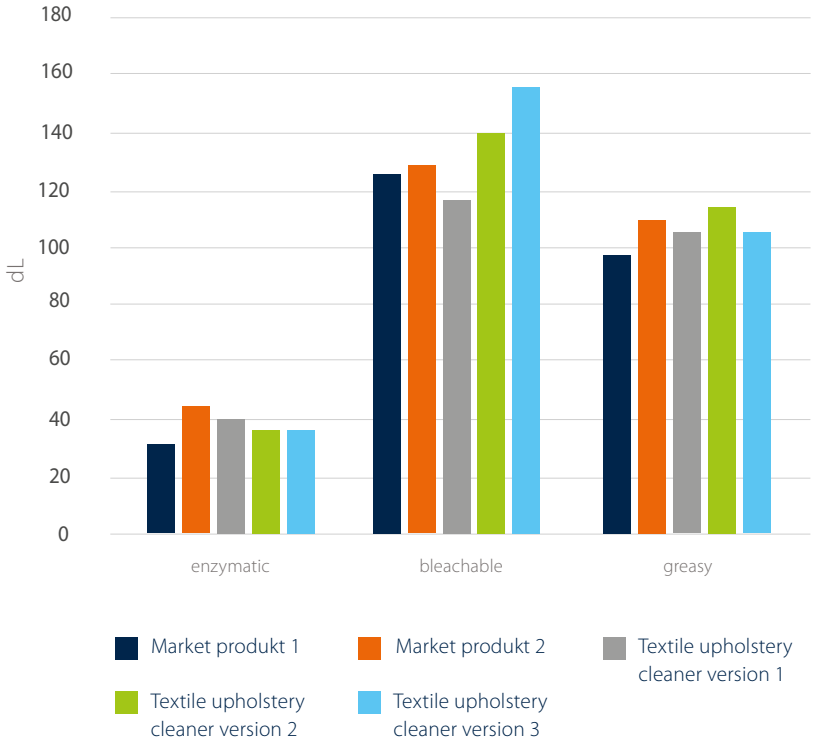
Parameters

physical appearance	Clear liquid
pH at 25°C	5-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	1

Textile upholstery cleaner version 1 – detergency test on cotton fabric



Detergency test on fabric – comparison



Stain category	Type of stain
Enzymatic stains	Aged bood
	Aged chocolate ice cream
Bleach stains	Curry
	Aged wine
	Grass/mud
	Tea
	Pure grass
	Standard clay
	Beta-carotene on cotton
	Baby food carrot/potato
Greasy stains	Fluid make-up
	Spaghetti sauce with beef
	Butterfat with colorant
	Beef fat with sudan red
	Dirty motor oil

3.2 Leather upholstery cleaner

Ingredient	Percentage [%]	Function
EXOemul OM4	14.0	Silicone oil emulsifier
ROKAnol GA7W	5.0	Cleaning agent
Silicone oil	17.0	Wetting agent, film-forming agent
Propylene glycol	2.0	Humectant
Methoxydipropanol	2.0	Solubiliser
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Mix **EXOemul OM4** and silicone oil together.
2. Add water at a temperature of approx. 80°C to the mixture and mix vigorously.
3. Then add **ROKAnol GA7W**, propylene glycol and methoxydipropanol (in that order), mixing each time
4. Homogenise the whole mixture until uniform.

Parameters

physical appearance	White, milky liquid
pH at 25°C	7-8
Viscosity at 20°C, cP	< 13,000
Solidification point, °C	< 0

Leather upholstery cleaner – economic

Ingredient	Percentage [%]	Function
ROKAnol UD3	2.5	Cleaning agent
ROKAmina K40HC	1,0	Co-surfactant
BIT	0.01	Preservative
Water	up to 100%	Solvent

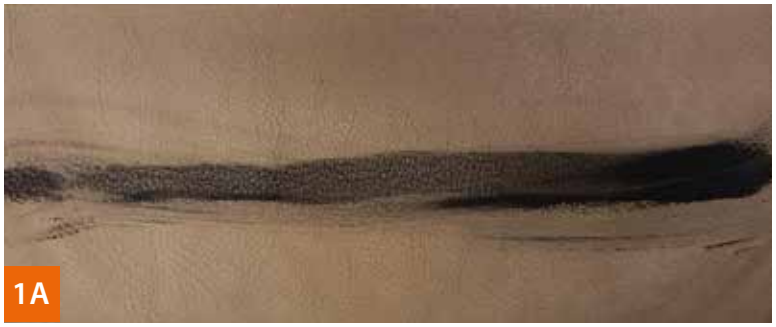
Ready-to-use product.

Preparation procedure

Weigh out an appropriate quantity of water. Then add surfactants, i.e. **ROSULfan A, ROKAnol L7, ROKAmina K30B.**
Mix each time until uniform was mixed until stabilized at ambient temperature.

Parameters

physical appearance	Clear liquid
pH at 25°C	5-7
Viscosity at 20°C, cP	< 10



Before



After

Cleaning method:

Leather car seat was soiled with perpetrated dirt based on oils and inorganic particles. A few hours later the cleaning test was performed with putting even amount of cleaning product on the brush for cleaning leather car upholstery. Determination of result is observation before and after effect.

Leather upholstery cleaner – standard

Ingredient	Percentage [%]	Function
SULFOROKAnol L270/1 / SULFOROKAnol LT270/1	21.0	Cleaning agent
ROKAmina K30K	5.0	Co-surfactant, foam booster
BIT	0.01	Preservative
Water	up to 100%	Solvent

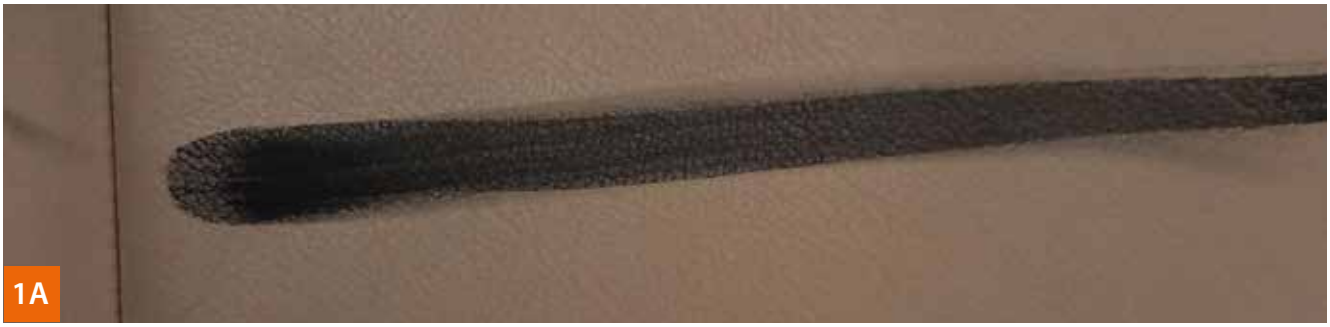
Ready-to-use product.

Preparation procedure

Weigh out an appropriate quantity of water. Then add the following products, in the specified order: **SULFOROKAnol L270/1** or **SULFOROKAnol LT270/1** and **ROKAmina K30K.** Mix each time until uniform. Add preservative and mix.

Parameters

physical appearance	Clear liquid
pH at 25°C	7-8
Viscosity at 20°C, cP	< 10



Before



After

Leather upholstery cleaner – premium

Ingredient	Percentage [%]	Function
EXOsoft PO30	2.5	Cleaning agent, leather care
ROKAnol TMP7	1.0	Cleaning agent
ROKAnol DB7	1.0	Wetting agent
BDG	0.5	Solvent, foam booster
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

Weigh out an appropriate quantity of water. Then add the following products, in the specified order: **EXOsoft PO30, ROKAnol TMP7, ROKAnol DB7.** Mix each time until uniform. Add BDG and mix

Parameters

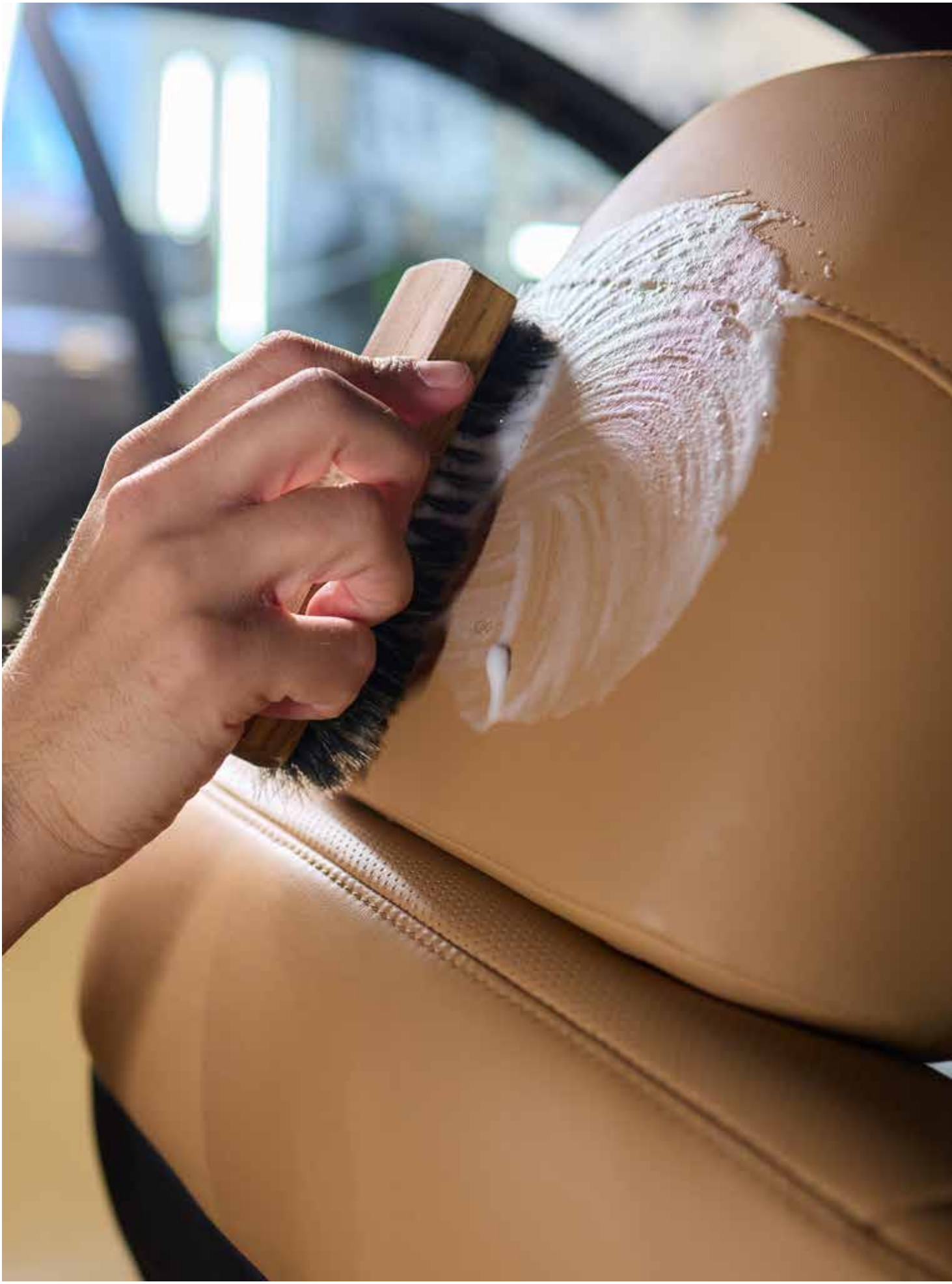
physical appearance	Clear liquid
pH at 25°C	8-10
Viscosity at 20°C, cP	< 10



Before



After



3.3 All purpose cleaners

Multi-purpose cleaner version 1

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol IT5	2.0	Cleaning agent, degreasing agent
ROKAmina K40HC	2.0	Cleaning agent, foam stabiliser
2-butoxyethanol (BG)	7.0	Solubiliser
Isopropyl alcohol (IPA)	10.0	Solubiliser, degreasing agent
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water. Then add surfactants, i.e. **ROKAnol IT5** and **ROKAmina K40HC** , mixing each time.
2. Then add butyl glycol (BG) and isopropyl alcohol.
3. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	5-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. – 5

Multi-purpose cleaner version 2

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol GA7	2.5	Cleaning agent, degreasing agent
Butoxyethanol (BG)	2.5	Solubiliser
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water.
2. Then add **ROKAnol GA7** and butoxyethanol, mixing each time.
3. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	5-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	<0

Multi-purpose cleaner version 3

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROSULfan O	5.0	Cleaning agent, degreasing agent
ROKAmina K40HC	2.0	Cleaning agent, foam stabiliser
2-butoxyethanol (BG)	7.0	Solubiliser
Isopropyl alcohol (IPA)	10.0	Solubiliser, degreasing agent
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water. Then add surfactants, i.e **ROSULfan O** and **ROKAmina K40HC** , mixing each time. Then add BG and isopropyl alcohol. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	6-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	< – 10

Multi-purpose cleaner version 4

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol GT8	2.0	Cleaning agent, degreasing agent
ROKAcet KO400G	1.0	Cleaning agent, foam stabiliser
methoxydipropanol	2.0	Degreasing agent, aroma
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water. Then add surfactants, i.e. **ROKAnol GT8** and **ROKAcet KO400G**, mixing each time. Then add methoxydipropanol. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	6-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 0

Interior cleaner concentrate

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROSULfan D	15.0	Cleaning agent, foaming agent
ROKAnol GT8	10.0	Cleaning agent, degreasing agent
ROKAcet KO400G	2.0	Cleaning agent, foam stabiliser
methoxydipropanol	5.0	Degreasing agent, aroma
Water	up to 100%	Solvent

Use a dilution of 1:100 for light staining, 1:20 for normal staining and 1:3 for severe staining.

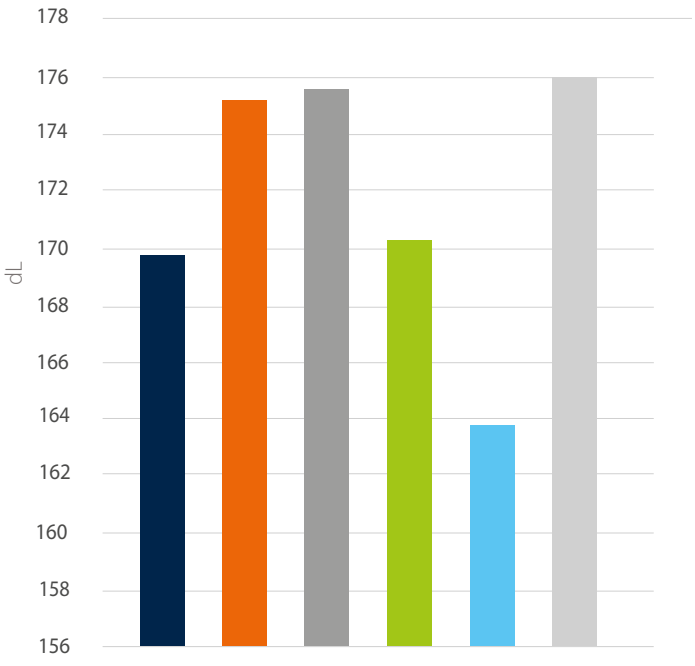
Preparation procedure

1. Weigh out an appropriate quantity of water. Then add surfactants, i.e. **ROSULfan D, ROKAnol GT8** and **ROKAcet KO400G**, mixing each time.
2. Then add methoxydipropanol.
3. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	5-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	< – 5

All purpose cleaners – detergency test



Fabric cleaning test:

Model test fabric MON-PCC02 (cotton) – soiled with 15 different types of stains. The stains are selected as typical stains occurring in cars: make-up, spaghetti sauce, chocolate dessert, mud with grass, baby food, dirty engine oil, butter fat, beef fat. Prepare 30 ml of preparation in a suitable dilution, which should be poured on the test fabric before washing. Put the test fabrics and 2kg of white cotton towels into an automatic washing machine. Run the program dedicated to cotton „40°C". Washing time is 2h 50 min. At the end of the rinse cycle, remove the fabrics from the washing machine and leave to dry. After washing, perform a spectrophotometric measurement of the parameter of total colour difference dE* as the difference before and after washing, following the CIELab method.

- Market produkt 1
- Multi-purpose cleaner version 1
- Multi-purpose cleaner version 2
- Multi-purpose cleaner version 3
- Multi-purpose cleaner version 4
- Interior cleaner concentrate

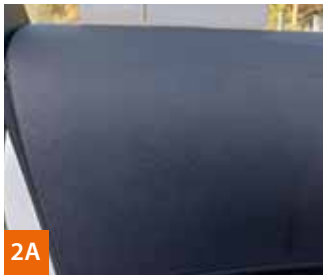
All purpose cleaners – in-use tests

The photos shown are from a test carried out on the side door of a passenger car. The tested factor was the degree to which greasy food stains (food sauce) were cleaned. The preparations in the appropriate dilution were spread over the surface using a detailing brush. Once the preparation was spread, the surface was wiped with a microfibre cloth. Detergency was assessed by visually observing the degree to which sections of the board were cleaned.

Before



After



Reference preparation

Before



After



Multi-purpose cleaner – 1

Before



After



Multi-purpose cleaner – 2

Before



After



Multi-purpose cleaner – 3

Before



After



Multi-purpose cleaner – 4

Before



After



Interior cleaner concentrate

Product name	Market product	Multi-purpose cleaner – 1	Multi-purpose cleaner – 2	Multi-purpose cleaner – 3	Multi-purpose cleaner – 4	Interior cleaner concentrate
Dilution	1:20	1:20	1:20	1:20	1:20	3:200

3.4 Dashboard matte and shine agents

Matte agent

Ingredient	Percentage [%]	Function
ROKAnol GA5/ROKAnol IT6	6/4	Cleaning agent, degreasing agent
Aqueous emulsion of polydimethylsiloxane*	20.0	Matting
Methoxydipropanol	2.0	Degreasing agent, aroma
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out half of the appropriate quantity of water and mix vigorously with the polydimethylsiloxane emulsion.
2. In another vessel, add methoxydipropanol and **ROKAnol GA5/ROKAnol IT6** to the remaining half and mix.
3. Add the prepared surfactant solution via dripping, with intervals, into the vessel with emulsion placed in a water bath.
4. Mix vigorously while slowly cooling.

Parameters

physical appearance	White emulsion
pH at 25°C	4.5-5.5
Viscosity at 20°C, cP	< 10
Solidification point, °C	< – 5

Before After Before After



Matte agent Market product

Photographs of the inside of a plastic door with applied preparations: market preparation and„matting agent (based on ROKAnol GA5)" formulation – before and after versions



Shine agent

Ingredient	Percentage [%]	Function
ROKAnol GA5	3.0	Cleaning agent, degreasing agent
ROKAcet KO400G	2.0	Emollient
Aqueous emulsion of amino-functional polydimethylsiloxane*	20.0	Agent responsible for the gloss effect
Water	up to 100%	Solvent

Ready-to-use product.

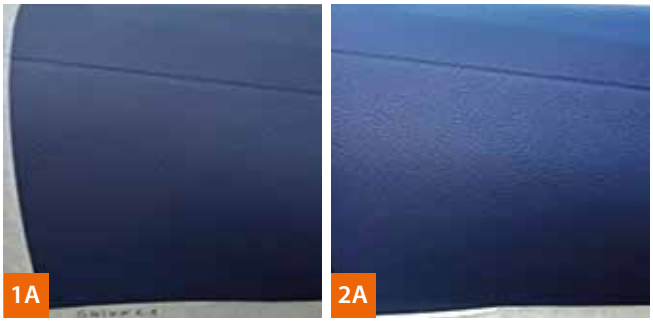
Preparation procedure

1. Weigh out an appropriate quantity of water and methoxydipropanol.
2. Add the amino-functional polydimethylsiloxane emulsion and mix thoroughly.
3. Then add the surfactant, i.e. **ROKAnol GA5** and **ROKAcet KO400G** and mix until a homogeneous emulsion is obtained.

Parameters

physical appearance	Milky, white emulsion
pH at 25°C	9-10
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 1

Before After



Shine agent

Before After



Market product

Photographs of the inside of a plastic door with applied market preparation and „polishing agent" formulation – before and after versions.

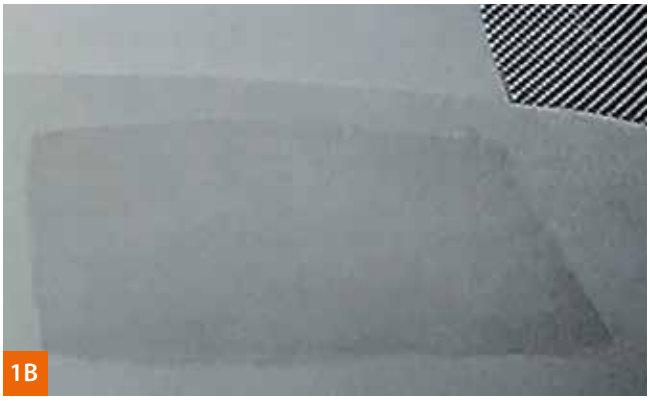


Preparations for plastic parts – test summary

Matte agent – market product	Gloss	●●●●○	Matt
	Faded	●●●●○	Blackened
Matte agent (ROKAnol GA5)	Gloss	●●●●○	Matt
	Faded	●●●●○	Blackened
Matte agent (ROKAnol IT6)	Gloss	●●●●○	Matt
	Faded	●●●●●	Blackened
Shine agent – market product	Gloss	●○○○○	Matt
	Faded	●●●○○	Blackened
Shine agent	Gloss	●●○○○	Matt
	Faded	●●●○○	Blackened



Market preparation – shine



Market preparation – matting



Shine agent



Matting agent (ROKANOL GA5)

Photographs of a plastic dashboard showing the effect after the application of preparations.





04 / Products for removing stubborn stains

Traffic film remover, Rim cleaners, Tyre cleaner, Bug removers, Degreasers, Paste for cleaning chrome-plated parts

4.1 Traffic film remover

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol GA7	8.0	Cleaning agent, wetting agent
ROKAnol LP2227	3.0	Cleaning agent
EXOlat MC60	2.0	Sequestrant
Methoxydipropanol	3.0	Solvent
Citric acid monohydrate	0.1	pH regulator
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Add **ROKAnol GA7** and **ROKAnol LP2227** to water, mixing each time.
2. Then add **EXOlat MC60**, mix until uniform, and add methoxydipropanol.
3. Finally, add citric acid and mix.

Parameters

physical appearance	Clear, colourless liquid
pH at 25°C	6-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	approx. 0



4.2 Rim cleaner – acidic pH

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol IT6	7.0	Cleaning agent, wetting agent
ROKAnol NL8/NL9	3.0	Cleaning agent, degreasing agent
Citric acid monohydrate	8.0	pH regulator
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Dissolve citric acid in water.
2. Add **ROKAnol IT6** and **ROKAnol NL8/NL9** (in that order) to the solution.
3. Mix until uniform

Parameters

physical appearance	Clear colourless liquid
pH at 25°C	1-3
Viscosity at 20°C, cP	< 10
Solidification point, °C	< – 5

Rim cleaner – neutral pH

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
Rokanol IT9	3.0	Cleaning agent, wetting agent
ROKAnol NL6/ NL9	1.5	Cleaning agent, degreasing agent
GLDA Na4 (40%)	0.5	Sequestrant
2-(2-butoxyethoxy)ethanol (BDG)	1	Solvent
Preservative	0.1	Preservative
Citric acid	up to pH = 7	pH regulator
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Add **ROKAnol IT9** and **ROKAnol NL6/NL9** (in that order) to water.
2. Add 2-(2-butoxyethoxy)ethanol (BDG) to the mixture and mix.
3. Add EDTA NA4 (40%) and mix.
4. Regulate pH with citric acid, if necessary
5. Mix until uniform

Parameters

physical appearance	Clear colourless liquid
pH at 25°C	6-8
Viscosity at 20°C, cP	< 10
Solidification point, °C	< 0

Rim cleaner – alkaline pH

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol TMP7	5.0	Cleaning agent
ROKAmina K30	6.0	Foaming agent
EXOlat C40	4.0	Sequestrant
HEDP*Na4 (diluted sodium salt of etidronic acid)	3.0	Chelating agent
NaOH (50%)	2.0	pH regulator
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Add the 50% NaOH solution to water.
2. Then add **ROKAnol TMP7** and **ROKAmina K30** (in that order) to the solution, mixing each time
3. Add **EXOlat C40** and then HEDP*Na4 to the mixture, mixing after each addition.

Parameters

physical appearance	Clear colourless liquid
pH at 25°C	10-12
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 0

Rim cleaners – in-use tests



Wheel rim after soiling



Market product

Test methodology:

The rim was soiled with approx. 100 g of previously prepared dirt. After two days, the undiluted preparation was applied to the rim and left on for approx. 5 minutes. After this time, the rim was rinsed with water and a comparison photo was taken.



Rim cleaner – alkaline pH



Rim cleaner – acidic pH



Rim cleaner – neutral pH

Bloody rim

Ingredient	Percentage [%]	Function
SULFOROKAnol L270/1	5.0	Cleaning agent, foaming agent
ROKAmid KAD/2A	2.0	Rheology regulator
ROKAnol NL9	4.0	Cleaning agent, wetting agent
ROKAnol IT9	5.0	Wetting agent
Sodium mercaptoacetate (46%)	30.0	Complexing agent for iron ions
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Pour a measured quantity of water into a vessel, then add **SULFOROKAnol L270/1** and mix until a clear solution is obtained.
2. Add **ROKAnol IT9** and **ROKAnol NL9** to the solution (in that order), mixing each time.
3. Add sodium mercaptoacetate and mix
4. Add **ROKAmid KAD/2A** and mix until uniform.

Parameters

physical appearance	Colourless liquid
pH at 25°C	12-13
Viscosity at 20°C, cP	< 100
Density at 20oC, g/cm^3	Approx. 1.03
Solidification point, °C	Approx. 1.03



4.3 Tyre cleaner

Ingredient	Percentage [%]	Function
ROKwin 80	16.0	Emulsifier
EXOantifoam S100	1.0	Anti-foaming agent
Glycerine	6.0	Rheology modifier
Ethyl alcohol	5.0	Solvent
Dearomatised mixture of short-chain hydrocarbons	24.0	Cleaning agent, preservative
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Pour the mixture of dearomatised short-chain hydrocarbons into a vessel, add ethyl alcohol and glycerine.
2. In a separate vessel, prepare an aqueous mixture of **ROKwin 80**, which should be heated to approx. 80°C. After thorough mixing, add **EXOantifoam S100**, mixing continuously and heating at the desired temperature.
3. The final step is to homogenise using a hand-held homogeniser at high speed, with simultaneous heating. Slowly add to the first vessel, via dripping, the hot mixture prepared in item 2. Homogenise the preparation continuously. After pouring in the entire mixture, homogenise for some more time while slowly cooling the final product. Then leave to cool.

Parameters

physical appearance	White, milky liquid
pH at 25°C	7-8
Viscosity at 20°C, cP	68
Solidification point, °C	0.5



4.4 Bug remover – standard

Ingredient	Percentage [%]	Function
EXOlat C40	10.0	Sequestrant
ROKAmin K15K	3.0	Hydrophobic agent
ROKAnol IT7	2.0	Cleaning agent
Sodium cumensulfonate	5.0	Solubiliser
2-butoxyethanol (BG)	3.0	Solvent/Solubiliser
Sodium carbonate	2.0	Detergency enhancer
NaOH (30%)	1.0	pH regulator
Water	up to 100%	Solvent

Use a dilution between 1:10 and 1:20 for weak staining and 1:3 for severe staining.

This product removes the remains of insects and other road dirt from the car body.

Preparation procedure

1. Add sodium carbonate to a weighed quantity of water and mix until a homogeneous liquid is formed.
2. Then add 2-butoxyethanol (BG), **Rokanol IT7, EXOlat C40**, sodium cumensulfonate and **ROKAmin K15K**, mixing the sample each time.
3. Mix until uniform.
4. Slowly add NaOH and mix thoroughly.

Parameters

physical appearance	Clear liquid
pH at 25°C	~13
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 1.06

Bug remover – pro – in-use tests



Before applying the pro remover.



During action of the pro remover.



After washing with the pro remover.

Test methodology:

The product was diluted with water in a 1:3 ratio. The cleaned, cold surface was sprayed with the diluted solution. A period of 30 s to 1 min was allowed to elapse, without allowing the product to dry. The surface was then rinsed with a jet of water.

Bug remover – pro

Ingredient	Percentage [%]	Function
SULFOROKAnol L227/1	18.0	Cleaning agent, foaming agent
ROKAmid MRZ17	3.0	Detergency enhancer
EXOlat C40	2.5	Sequestrant
Glycerine	10.0	Stabiliser/detergency enhancer
Methoxydipropanol	5.0	Solubiliser
2-butoxyethanol (BG)	4.0	Solvent
D-glucopyranose, oligomers, C8-10 glucosides	2.0	Wetting agent/hydrotrope
NaOH (30%)	1.0	pH regulator
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Add S**ULFOROKAnol L227/1** to a weighed quantity of water and mix until a homogeneous liquid is formed.
2. Then add d-glucopyranose and 2-butoxyethanol (BG), and mix. Next, add **ROKAmid MRZ17**, glycerine, methoxydipropanol and **EXOlat C40**, mixing the sample each time. Mix until uniform.
3. Slowly add NaOH and mix thoroughly.

Parameters

physical appearance	Clear liquid
pH at 25°C	~13
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 1.04

Bug remover – standard – in-use tests



Before applying the standard remover.



During action of the standard remover.



After washing with the standard remover.

Test methodology:

The cleaned, cold surface was sprayed with the ready-to-use product. A period of 30 s to 1 min was allowed to elapse, without allowing the product to dry. The surface was then rinsed with a jet of water.

Bug remover – economic

Ingredient	Percentage [%]	Function
ROKAnol DB7	1.0	Cleaning agent/wetting agent
EXOlat C40	4.0	Sequestrant
2-(2-butoxyethoxy)ethanol (BDG)	3.0	Solubiliser
NaOH (30%)	1.0	pH regulator
Mixture of isothiazolins (CIT/MIT)	0.1	Preservative
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Add **ROKAnol DB7** and BDG to a weighed quantity of water and mix until a homogeneous liquid is formed.
2. Then add **EXOlat C40** and mix until uniform.
3. Slowly add NaOH and mix thoroughly.
4. Finally, add the preservative CIT/MIT.

Parameters

physical appearance	Clear liquid
pH at 25°C	~13
Viscosity at 20°C, cP	< 10
Solidification point, °C	Approx. 1.01

Bug remover – economic – in-use tests



Before applying the economic remover.



During action of the economic remover.



After washing with the economic remover.

Test methodology:

The cleaned, cold surface was sprayed with the ready-to-use product. A period of 30 s to 1 min was allowed to elapse, without allowing the product to dry. The cleaned surface was then rinsed with a jet of water.

Bug remover – premium

Ingredient	Percentage [%]	Function
SULFOROKAnol IT330	17.0	Cleaning agent/wetting agent
ROKAnol NL6/ IT7	3.0	Cleaning agent
EXOtrope SCS40	3.0	Hydrotrope
2-(2-butoxyethoxy)ethanol (BDG)	3.0	Solubiliser
Monoethanolamine	1.0	pH regulator
Mixture of isothiazolins (CIT/MIT)	0.1	Preservative
Water	up to 100%	Solvent

Ready-to-use product

This product removes the remains of insects and other road dirt from the car body

Preparation procedure

1. Weigh out an appropriate quantity of water and add Monoethanoloamine, then mix.
2. Add to mixture BDG [2-(2-butoxyethoxy)ethanol]
3. Then add **ROKAnol NL6/IT7** and **SULFOROKAnol IT330** (in that order), mixing each time.
4. Add **EXOtrope SCS40** and mix.
5. Add Mixture of isothiazolines and mix.

Parameters

physical appearance	Clear liquid
pH at 25°C	11-12
Viscosity at 20°C, cP	< 10
Density at 20°C, g/cm³	Approx. 1.01

Bug remover – premium – in-use tests



Before applying the premium remover.



During action of the premium remover.



After washing with the premium remover.

Test methodology:

The cleaned, cold surface was sprayed with the ready-to-use product. A period of 30 s to 1 min was allowed to elapse, without allowing the product to dry. The cleaned surface was then rinsed with a jet of water.



4.5 Degreasers

Car body degreaser version 1

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROKAnol GA8	3.0	Cleaning agent
ROKAnol IT9	0.5	D-limonene solvent
D-limonene	1.0	Degreasing agent, aroma
2-(2-butoxyethoxy)ethanol (BDG)	2.0	Solubiliser
NaOH	0.5	pH stabiliser
trisodium salt of methylglycinediacetic acid (MGDA*Na4)	2.0	Chelating agent
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water and add BDG, then mix.
2. Then add **ROKAnol GA8** and **ROKAnol IT9** (in that order), mixing each time.
3. Add d-limonene and mix.
4. Slowly add NaOH and mix until a clear solution is obtained.

Parameters

physical appearance	Clear liquid
pH at 25°C	12-13
Viscosity at 20°C, cP	< 10
Solidification point, °C	approx. 1.5

Car body degreaser version 1 – dynamic degreasing

Product 1



Degreaser 1 after 2 minutes



Degreaser 1 after 5 minutes

Market product



Product after 2 minutes



Product after 5 minutes

Dynamic degreasing:

A method of assessing the degreasing ability of a given preparation. Performed by rotating an agitator in a solution of 5g of product/l. The agitator is first immersed in used engine oil, after which the degreasing process takes place in the solution through rotations of the agitator. Visual evaluation is conducted after the second and fifth minute of rotating.

Car body degreaser version 2

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
ROSULfan E	9.5	Cleaning agent, foaming agent
ROKAnol NL6	5.0	Cleaning agent
ROKAnol IT8	5.0	Cleaning agent, degreasing agent
2-butoxyethanol (BG)	2.0	Solubiliser
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water and add BG, then mix.
2. Then add surfactants, i.e. **ROSULfan E, ROKAnol NL6** and **ROKAnol IT8**, mixing each time.
3. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	5-6
Viscosity at 20°C, cP	< 10
Solidification point, °C	1.5

Car body degreaser version 2 – dynamic degreasing

Product 2



Degreaser 2 after 2 minutes



Degreaser 2 after 5 minutes

Market product



Product after 2 minutes



Product after 5 minutes

Dynamic degreasing:

A method of assessing the degreasing ability of a given preparation. Performed by rotating an agitator in a solution of 5g of product/l. The agitator is first immersed in used engine oil, after which the degreasing process takes place in the solution through rotations of the agitator. Visual evaluation is conducted after the second and fifth minute of rotating.

Car body degreaser version 3

The product meets the criteria for ingredients in formulations certified by the Nordic Swan.

Ingredient	Percentage [%]	Function
SULFOROKAnol L270/1	3.8	Cleaning agent, foaming agent
ROKAnol GA7	1.2	Cleaning agent, degreasing agent
Propylene glycol	2.0	Solubiliser
Water	up to 100%	Solvent

Ready-to-use product.

Preparation procedure

1. Weigh out an appropriate quantity of water. Then add surfactants, i.e. **SULFOROKAnol L270/1**, and mix thoroughly.
2. Then add **ROKAnol GA7** and propylene glycol, mixing each time.
3. Mix until uniform.

Parameters

physical appearance	Clear liquid
pH at 25°C	6-7
Viscosity at 20°C, cP	< 10
Solidification point, °C	1

Car body degreaser version 3 – dynamic degreasing

Product 3



Degreaser 3 after 2 minutes



Degreaser 3 after 5 minutes

Market product



Product after 2 minutes



Product after 5 minutes

Dynamic degreasing:

A method of assessing the degreasing ability of a given preparation. Performed by rotating an agitator in a solution of 5g of product/l. The agitator is first immersed in used engine oil, after which the degreasing process takes place in the solution through rotations of the agitator. Visual evaluation is conducted after the second and fifth minute of rotating.

4.6 Paste for cleaning chrome-plated parts

Ingredient	Percentage [%]	Function
ROKwin 80	10.0	emulsifier
ROKAnol IT9	10.0	cleaning agent
ROKAnol NL9	5.0	cleaning agent, wetting agent
Dearomatised mixture of short-chain hydrocarbons	30.0	glossing agent
Water	up to 100%	Solvent

Ready-to-use product.

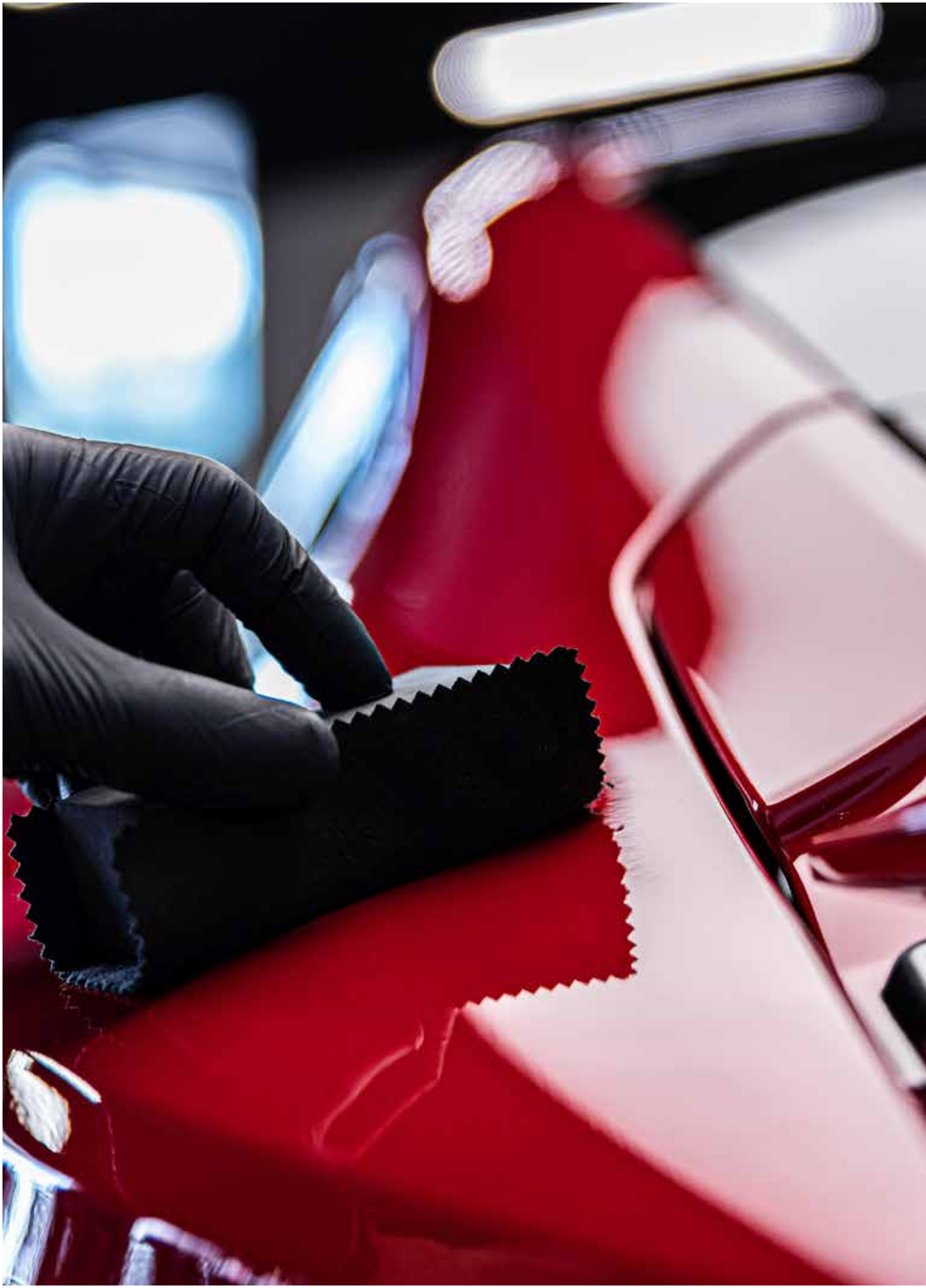
Preparation procedure

1. Prepare an aqueous mixture of **ROKwin 80, ROKAnol NL9** and **ROKAnol IT9**, mixing after each ingredient is added. Heat the mixture to approx. 60°C.
2. Into a vessel with a weighed quantity of the mixture of short-chain hydrocarbons slowly add, via dripping, the mixture prepared in item 1 at 60°C. The preparation should be continuously homogenised using a hand-held laboratory homogeniser.
3. After adding the entire mixture, cool the preparation (while continuing to homogenise) until a paste forms.

Parameters

physical appearance	White paste
pH at 25°C	6-8
Viscosity at 20°C, cP	> 6000
Solidification point, °C	-





05 / Air fresheners

Air freshener in an applicator, Spray air freshener

Air freshener in an applicator

Ingredient			Mass ratio	Percentage [%]
ROKAnol ROKAnol L4/ ROKAnol L5P5*	:	Vegetable Oil (sunflower, castor and rapeseed oils tested)	6:1 4:1 2:1 1:1	99/98
Ethanol				0/1**
Fragrance composition				1

* Choice of ROKAnol L4 or ROKAnol L5P5 mixed with oil in the ratios as indicated, with a total content of 99% or 98%, depending on the quantity of ethanol used.

** Adding ethanol to the formulation improves the fragrance properties of the air freshener, but is not necessary for the formulation.

Spray air freshener

Ingredient	Percentage [%]
Water : IPA/ethanol (8:1)*	89
ROKAcet HR40 W/ EXOcare HTW/ ROKwinol 20/ ROKAnol L5P5	10
Fragrance composition	1

* Mixture of water and alcohol in the stated mass ratio, which constitutes the stated percentage of the complete formulation

Air freshener – odour evaluation

In the tested fragrance composition.

Air freshener in an applicator

Formulation *	Odour evaluation
Oil+ROKAnol L4	Weak odour
Oil + ethanol + ROKAnol L4	Perceptible odour
Oil + ROKAnol L5P5	Strong odour
Oil + ethanol + ROKAnol L5P5	Strong odour

Spray air freshener

Formulation *	Odour evaluation
Water: alcohol + ROKAcet HR40W	Strong odour
Water: alcohol + EXOcare HTW	Strong odour
Water: alcohol + ROKwinol 20	Strong odour
Water: alcohol + ROKAnol L5P5	Strong odour



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