



# Textile Industry

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.

|                                                                                                                                                           |                                                                                                                                    |                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>PCC ROKITA SA</b><br><b>PCC PCG</b><br><b>OXYALKYLATES</b><br><b>IRPC</b>                                                                              | <b>PCC</b><br><b>ROKITA SA</b>                                                                                                     | <b>PCC</b><br><b>ROKITA SA</b>                                                                                                                   | <b>PCC EXOL SA</b><br><b>PCC CHEMAX INC</b><br><b>PCC PCG OXYALKYLATES</b>                                                                                                                                           | <b>PCC</b><br><b>SYNTEZA</b>                                                                                        |
|                                                                        |                                                 |                                                               |                                                                                                                                 |                                |
| <b>Polyols</b>                                                                                                                                            | <b>Chlorine</b>                                                                                                                    | <b>Phosphorus</b>                                                                                                                                | <b>Surfactants</b>                                                                                                                                                                                                   | <b>Alkylphenols</b>                                                                                                 |
| <ul style="list-style-type: none"> <li>• Polyether polyols</li> <li>• Polyester polyols</li> <li>• Prepolymers</li> <li>• Polyurethane Systems</li> </ul> | <ul style="list-style-type: none"> <li>• Chlorine</li> <li>• MCAA</li> <li>• Other Chlorine</li> <li>Downstream Product</li> </ul> | <ul style="list-style-type: none"> <li>• Phosphorus derivatives</li> <li>• Naphthalene derivatives</li> <li>• Polycarboxyethers (PCE)</li> </ul> | <ul style="list-style-type: none"> <li>• Anionic surfactants</li> <li>• Cationic surfactants</li> <li>• Nonionic surfactants</li> <li>• Amphoteric surfactants (betaines)</li> <li>• Chemical formulation</li> </ul> | <ul style="list-style-type: none"> <li>• Nonylphenol</li> <li>• Dodecylphenol</li> <li>• Tristyrylphenol</li> </ul> |

|                                                                                                                                |                                                                                     |                                                                                                                            |                                                                                          |                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>PCC CONSUMER</b><br><b>PRODUCTS SA</b>                                                                                      | <b>PCC</b><br><b>ROKITA SA</b>                                                      | <b>PCC</b><br><b>INTERMODAL SA</b>                                                                                         | <b>PCC</b><br><b>BAKKISILICON HF.</b>                                                    | <b>PCC</b><br><b>SE</b>                                                                                 |
|                                             |  |                                         |     |                    |
| <b>Consumer Products</b>                                                                                                       | <b>Energy</b>                                                                       | <b>Logistics</b>                                                                                                           | <b>Silicon</b>                                                                           | <b>Holding &amp; Projects</b>                                                                           |
| <ul style="list-style-type: none"> <li>• Household &amp; industrial Cleaners, Detergents and Personal Care Products</li> </ul> | <ul style="list-style-type: none"> <li>• Energy Production</li> </ul>               | <ul style="list-style-type: none"> <li>• Intermodal transport</li> <li>• Road Haulage</li> <li>• Rail Transport</li> </ul> | <ul style="list-style-type: none"> <li>• Microsilica</li> <li>• Silicon Metal</li> </ul> | <ul style="list-style-type: none"> <li>• Portfolio Management</li> <li>• Project Development</li> </ul> |



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# 01 / Textile Industry

## Introduction

The mechanical and chemical treatment of fiber, used in textile industry, involves various intermediate steps in which surface active substances play an important role. Their function deals mainly with proper wetting process of fiber and fabric which influences the improvement in dye sorption and adhesive properties of fiber. Additionally, surfactants are responsible for emulsification and dispersing processes. They improve the resistance to abrasion,

removing natural impurities and those generated during processing fiber. At the same time they improve wash fastness of the dye in fiber.

PCC EXOL manufactures a wide and varied range of textile auxiliaries used as wetting agents, emulsifiers, dispersants, dye levelling agents, lubricants and antistatics. Our products include the following anionic and nonionic surfactants:

|                                                  |                                               |                                          |                                         |                                      |                                              |
|--------------------------------------------------|-----------------------------------------------|------------------------------------------|-----------------------------------------|--------------------------------------|----------------------------------------------|
| alkyl benzene<br>sulfonates<br>(ABS Acid, ABSNa) | alkyl ether<br>sulphates<br>(SULFOROKAnols)   | alkyl<br>sulphates<br>(ROSULfans)        | polyethylene<br>glycols<br>(POLIkols)   | alcohol<br>ethoxylates<br>(ROKAnols) | nonylphenol<br>alkoxylates<br>(ROKAfenols)   |
| fatty acid<br>ethoxylates<br>(ROKAcets)          | fatty acid amide<br>ethoxylates<br>(ROKAmids) | fatty amine<br>ethoxylates<br>(ROKAmins) | EO/PO block<br>copolymers<br>(ROKAmers) | sorbitan<br>esters<br>(ROKwin)       | sorbitan esters<br>ethoxylates<br>(ROKwinol) |



## Processes in textile industry

**Spinning process** is the initial step in manufacturing of knitwear and fabric. The major aim of spinning is to produce the quality yarn using raw material. Production of yarn from bulk of loose fiber generates the opportunity to produce union fiber. During spinning process, it is very important to protect fiber from abrasion and damage. Some surfactants can ensure appropriate fiber lubricity. They also can help to emulsify oily components of recipe used in the spinning process. Usually warp yarn is coated with sizing agent before weaving. The major aims of using sizing preparation are: to reduce frictional properties of fiber, to decrease yarn breakages on the loom, to improve weaving productivity.

Products occurring on the surface of the warp may adversely affect the action of the dye and auxiliary agent in the next steps of fiber treatment. Therefore, these size agents have to be removed before subsequent processing of the fabric. That is why the process during which the sizing agent is removed from the fiber is called **desizing**.

In the textile industry, one of the first steps of chemical fiber treatment is **scouring process**. Fiber has natural impurities: waxes, pectins, fats, oils and other which are obtained on the surface after using size or lubricants in spinning, weaving or knitting processes. Scouring process is a very important stage in fiber treatment allowing fiber to be bleached and dyed successfully in further processing. Scouring agents should have excellent degreasing properties, low foaming and wetting on fiber surface. After dirt is removed, surfactants have to emulsify and disperse it.

**Bleaching process** is a chemical treatment of fiber in order to remove naturally occurring colour. Bleaching is a very important stage in fiber treatment that affects further fiber processing. Appropriate and uniform bleaching is necessary especially for dyeing process. The bleaching bath usually comprises:

- sodium hydroxide (caustic soda),
- hydrogen peroxide,
- stabilizing agent,
- very significant wetting agent.

The final contents of the bath components are dependent on the type of fiber as well as the method used during the bleaching process, i.e. the exhaust

method, pad steam or cold pad batch. Wetting agent may be either a blend of PCC EXOL products or a composition of PCC EXOL surfactants with some kind of solvents.

The major aims of wetting agent are:

- to improve the wetting capability of the fiber,
- to increase a capillarity and hydrophilicity of the dye,
- to increase the availability of the dye sorption on the fiber surface,
- to improve penetration of bleaching agents in the fiber,
- to remove air bubbles from fiber for uniform and better bleaching.

**Dyeing process** is the consecutive step in the chemical processing of fiber, yarn and fabric during which the textile article is given the final colour. Substantial numbers of dyes are used in this process, including the type of chemical molecule and the resulting colour with the different possibilities of applying its on the textile surface. Usually dyeing is carried out by the following methods:

- periodic (exhaust method),
- semi-continuous or continuous (Pad Dry, Pad Steam, Cold Pad Batch).

**Dyeing bath** is composed of aqueous solution containing dye and other chemicals. Usually these auxiliary agents are surface active substances and electrolytes. The essential aims of PCC EXOL products application in dyeing are:

- to improve wetting of yarn or fabric,
- to improve penetration of the dye in to the fiber surface,
- to uniform dispersing of the dye in bath,
- to level in order to ensure uniform and reproducible distribution of the dye in fiber, yarn and fabric,
- in some cases to decrease the creation of foam capability by low foaming surfactant,
- to wash and remove loose bounded dye with increasing of the wetting resistance of dyes bounded with fabric.

**Finishing process** is the final stage of treatment of fiber before marketing. The main task of this process is to improve the general characteristics and comfort in the further application by the User. Surfactants and other additives allow giving the functional characteristics to a final treatment such as:

- proper catch,
- filling,
- smoothness,
- antishrinkage,
- antiwrinkle,
- smoothness after washing without ironing and others.



## Textile Auxiliary – product list

| Product             | Spinning | Desizing | Scouring | Bleaching | Dyeing | Finishing | Ionic character | Description                                           | CAS        | HLB |
|---------------------|----------|----------|----------|-----------|--------|-----------|-----------------|-------------------------------------------------------|------------|-----|
| ABS Acid            |          | ●        | ●        | ●         |        |           | A               | Dodecylbenzene Sulfonic Acid                          | 85536-14-7 | –   |
| ABS Acid/1          |          | ●        | ●        | ●         |        |           | A               | Dodecylbenzene Sulfonic Acid                          | 85536-14-7 | –   |
| ABSNa 30            |          | ●        | ●        | ●         |        |           | A               | Sodium Dodecylbenzenesulfonate                        | 68411-30-3 | –   |
| ABSNa 50            |          | ●        | ●        | ●         |        |           | A               | Sodium Dodecylbenzenesulfonate                        | 68411-30-3 | –   |
| SULFOROKAnol L225/1 |          | ●        | ●        | ●         |        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3 | –   |
| SULFOROKAnol L227/1 |          | ●        | ●        | ●         |        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3 | –   |
| SULFOROKAnol L270/1 |          | ●        | ●        | ●         |        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3 | –   |
| SULFOROKAnol L327   |          | ●        | ●        | ●         |        |           | A               | Sodium C12-C15 Pareth Sulfate                         | 68891-38-3 | –   |
| ROSULfan D          |          | ●        | ●        | ●         |        |           | A               | Sodium Decyl Sulfate                                  | 142-87-0   | –   |
| ROSULfan E          |          | ●        | ●        | ●         |        |           | A               | Sodium 2-Ethylhexyl Sulfate                           | 126-92-1   | –   |
| ROSULfan L          |          | ●        | ●        | ●         |        |           | A               | Sodium Lauryl Sulfate                                 | 85586-07-8 | –   |
| ROSULfan O          |          | ●        | ●        | ●         |        |           | A               | Sodium Octyl Sulphate                                 | 142-31-4   | –   |
| EXOfos PA-080S      |          |          | ●        | ●         |        | ●         | A               | 2-Ethylhexyl Ether Phosphate                          | 12645-31-7 | –   |
| EXOfos PA-1300      |          | ●        |          | ●         |        |           | A               | Tridecyl Ether Phosphate                              | –          | –   |
| EXOfos PB-043K      |          |          | ●        | ●         |        | ●         | A               | POE (3) Butyl Alcohol Ether Phosphate, Potassium salt | –          | –   |
| EXOfos PB-083       |          |          | ●        | ●         |        | ●         | A               | POE (3) 2-Ethylhexyl Ether Phosphate                  | 68439-39-4 | –   |
| EXOfos PB-136       |          | ●        | ●        | ●         |        |           | A               | POE (6) Tridecyl Ether Phosphate                      | 9046-01-9  | –   |
| EXOfos PB-136B      |          | ●        | ●        | ●         |        |           | A               | POE (6) Tridecyl Ether Phosphate                      | 9046-01-9  | –   |
| EXOfos PB-138       |          |          | ●        | ●         |        | ●         | A               | POE (8) Tridecyl Ether Phosphate                      | 39464-69-2 | –   |
| EXOfos PB-139       |          | ●        | ●        | ●         |        |           | A               | POE (9) Tridecyl Ether Phosphate                      | 9046-01-9  | –   |
| EXOfos PB-184       |          |          | ●        | ●         |        | ●         | A               | POE (4) Oleyl Ether Phosphate                         | 39464-69-2 | –   |
| EXOfos PB-264       |          | ●        | ●        | ●         |        |           | A               | POE (4) Lauryl Ether Phosphate                        | 68511-37-5 | –   |
| EXOfos PT-E         |          | ●        | ●        | ●         |        |           | A               | POE (16) Tristyrylphenol Ether Phosphate              | 90093-37-1 | –   |
| ROKAfos 1013        |          | ●        | ●        |           | ●      |           | A               | POE (9)Tridecyl Ether Phosphate                       | 9046-01-9  | –   |
| POLIkol 200         |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 300         |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 400         |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 600         |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 1500        |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 1500 flakes |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 2000        |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 2000 flakes |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 6000        |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| POLIkol 6000 flakes |          |          |          |           | ●      | ●         | N               | Polyoxyethylene glycol                                | 25322-68-3 | –   |
| ROKAnol B2          |          |          | ●        | ●         |        |           | N               | Alcohols, C16-18 + EO/PO                              | 68002-96-0 | 6.2 |

## Textile Auxiliary – product list

| Product         | Spinning | Desizing | Scouring | Bleaching | Dyeing | Finishing | Ionic character | Description              | CAS         | HLB  |
|-----------------|----------|----------|----------|-----------|--------|-----------|-----------------|--------------------------|-------------|------|
| ROKAnol D5      |          |          | ●        | ●         |        |           | N               | Alcohols, C10-16 + 5 EO  | 78330-20-8  | 11.9 |
| ROKAnol D7      |          |          | ●        | ●         |        |           | N               | Alcohols, C10-16 + 7 EO  | 68002-97-1  | 13.1 |
| ROKAnol DB3     | ●        |          |          | ●         |        | ●         | N               | Alcohols, C12-15 + 3 EO  | 68131-39-5  | 7.8  |
| ROKAnol DB5     | ●        |          | ●        | ●         |        | ●         | N               | Alcohols, C12-15 + 5 EO  | 68131-39-5  | 10.5 |
| ROKAnol DB6     | ●        |          | ●        | ●         |        | ●         | N               | Alcohols, C12-15 + 5 EO  | 68131-39-5  | 11.4 |
| ROKAnol DB6M    | ●        |          | ●        | ●         |        | ●         | N               | Alcohols, C12-15 + 5 EO  | 68131-39-5  | 11.4 |
| ROKAnol DB7     | ●        |          | ●        | ●         |        | ●         | N               | Alcohols, C12-15 + 7 EO  | 68131-39-5  | 12.0 |
| ROKAnol DB7R    | ●        |          | ●        | ●         |        | ●         |                 | Alcohols, C12-15 + 7 EO  | 68131-39-5  | 12.0 |
| ROKAnol DB7W    | ●        |          | ●        | ●         |        | ●         | N               | Alcohols, C12-15 + 7 EO  | 68131-39-5  | 12.0 |
| ROKAnol DB9     | ●        |          | ●        | ●         |        | ●         |                 | Alcohols, C12-15 + 9 EO  | 68131-39-5  | 13.2 |
| ROKAnol DB11W   |          |          | ●        |           |        | ●         | N               | Alcohols, C12-15 + 11 EO | 68131-39-5  | 13.6 |
| ROKAnol EH3     | ●        |          |          | ●         |        | ●         | N               | Isooctanol + 3 EO        | 26468-86-0  | –    |
| ROKAnol G8      |          |          |          | ●         |        | ●         | N               | Glycereth-8              | 31694-55-0  | 14.0 |
| ROKAnol G12     |          |          |          | ●         |        | ●         | N               | Glycereth-12             | 31694-55-0  | 17.0 |
| ROKAnol G15     |          |          |          | ●         |        | ●         | N               | Glycereth-15             | 31694-55-0  | 17.5 |
| ROKAnol GA3     |          | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 3 EO     | 160875-66-1 | 9.0  |
| ROKAnol GA4     |          | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 4 EO     | 160875-66-1 | –    |
| ROKAnol GA5     |          | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 5 EO     | 160875-66-1 | –    |
| ROKAnol GA5W    |          | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 5 EO     | 160875-66-1 | –    |
| ROKAnol GA6     |          | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 6 EO     | 160875-66-1 | 12.5 |
| ROKAnol GA7     | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C10 + 7 EO     | 160875-66-1 | 13.0 |
| ROKAnol GA7LA   | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C10 + EO/PO    | 166736-08-9 | –    |
| ROKAnol GA7LAW  | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C10 + EO/PO    | 166736-08-9 | –    |
| ROKAnol GA7W    | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C10 + 7 EO     | 160875-66-1 | 13.0 |
| ROKAnol GA8     | ●        | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 8 EO     | 160875-66-1 | 14.0 |
| ROKAnol GA8LA   | ●        | ●        | ●        | ●         | ●      |           | N               | Alcohols, C10 + EO/PO    | 166736-08-9 | –    |
| ROKAnol GA8W    | ●        | ●        | ●        | ●         |        |           | N               | Alcohols, C10 + 8 EO     | 160875-66-1 | 14.0 |
| ROKAnol GA9     |          | ●        | ●        | ●         | ●      |           | N               | Alcohols, C10 + 9 EO     | 160875-66-1 | 14.5 |
| ROKAnol GA9LA   |          | ●        | ●        | ●         | ●      |           | N               | Alcohols, C10 + EO/PO    | 166736-08-9 | –    |
| ROKAnol GA9W/80 |          | ●        | ●        | ●         | ●      |           | N               | Alcohols, C10 + 9 EO     | 160875-66-1 | –    |
| ROKAnol GT3     | ●        |          | ●        |           |        |           | N               | Alcohols, C9-16 + 3 EO   | 97043-91-9  | 8.5  |
| ROKAnol GT5     | ●        | ●        | ●        |           | ●      |           | N               | Alcohols, C9-16 + 5 EO   | 97043-91-9  | 10.7 |
| ROKAnol GT6     | ●        | ●        | ●        | ●         | ●      |           | N               | Alcohols, C9-16 + 6 EO   | 97043-91-9  | 12.0 |
| ROKAnol GT7     | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-16 + 7 EO   | 97043-91-9  | 12.8 |
| ROKAnol GT8     | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-16 + 8 EO   | 97043-91-9  | 13.3 |
| ROKAnol GT9     | ●        | ●        | ●        |           | ●      | ●         | N               | Alcohols, C9-16 + 9 EO   | 97043-91-9  | –    |

## Textile Auxiliary – product list

| Product        | Spinning | Desizing | Scouring | Bleaching | Dyeing | Finishing | Ionic character | Description                          | CAS        | HLB  |
|----------------|----------|----------|----------|-----------|--------|-----------|-----------------|--------------------------------------|------------|------|
| ROKAnol GT9W   | ●        | ●        | ●        |           | ●      | ●         | N               | Alcohols, C9-16 + 9 EO               | 97043-91-9 | –    |
| ROKAnol GT10   |          |          |          |           | ●      |           | N               | Alcohols, C9-16 + 10 EO              | 97043-91-9 | –    |
| ROKAnol GT10W  |          |          |          |           | ●      |           | N               | Alcohols, C9-16 + 10 EO              | 97043-91-9 | –    |
| ROKAnol GT12   |          |          |          |           | ●      |           | N               | Alcohols, C9-16 + 12 EO              | 97043-91-9 | 15.0 |
| ROKAnol ID5    |          | ●        | ●        | ●         | ●      | ●         | N               | Isodecanol + 5 EO                    | 78330-20-8 | 11.7 |
| ROKAnol ID6    |          | ●        | ●        | ●         | ●      | ●         | N               | Isodecanol + 6 EO                    | 78330-20-8 | 12.4 |
| ROKAnol ID7    |          | ●        | ●        | ●         | ●      | ●         | N               | Isodecanol + 7 EO                    | 78330-20-8 | 13.2 |
| ROKAnol ID8    |          | ●        | ●        | ●         | ●      |           | N               | Isodecanol + 8 EO                    | 78330-20-8 | 13.8 |
| ROKAnol IT3    | ●        |          | ●        |           |        |           | N               | Alcohols, C13, branched + 3 EO       | 69011-36-5 | 8.0  |
| ROKAnol IT5    | ●        | ●        | ●        |           | ●      |           | N               | Alcohols, C13, branched + 5 EO       | 69011-36-5 | 10.5 |
| ROKAnol IT6    | ●        | ●        | ●        | ●         | ●      |           | N               | Alcohols, C13, branched + 6 EO       | 69011-36-5 | 11.4 |
| ROKAnol IT6R   | ●        | ●        | ●        | ●         | ●      |           | N               | Alcohols, C13, branched + 6 EO       | 69011-36-5 | 11.5 |
| ROKAnol IT7    | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C13, branched + 7 EO       | 69011-36-5 | 12.1 |
| ROKAnol IT7W   | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C13, branched + 7 EO       | 69011-36-5 | 12.1 |
| ROKAnol IT8    | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C13, branched + 8 EO       | 69011-36-5 | 12.8 |
| ROKAnol IT9    | ●        | ●        | ●        |           | ●      | ●         | N               | Alcohols, C13, branched + 9 EO       | 69011-36-5 | 13.3 |
| ROKAnol IT9W   | ●        | ●        | ●        |           | ●      | ●         | N               | Alcohols, C13, branched + 9 EO       | 69011-36-5 | 13.3 |
| ROKAnol IT10   |          |          |          |           | ●      |           | N               | Alcohols, C13, branched + 10 EO      | 69011-36-5 | 13.8 |
| ROKAnol IT12   |          |          |          |           | ●      |           | N               | Alcohols, C13, branched + 12 EO      | 69011-36-5 | 14.5 |
| ROKAnol IT12R  |          |          |          |           | ●      |           | N               | Alcohols, C13, branched + 12 EO      | 69011-36-5 | 14.5 |
| ROKAnol IT20   |          |          |          |           | ●      |           | N               | Alcohols, C13-Iso + 20 EO            | 69011-36-5 | 15.9 |
| ROKAnol K3     |          |          | ●        |           |        |           | N               | Alcohols, C16-18 unsaturated + 3 EO  | 68920-66-1 | 7.0  |
| ROKAnol K5     |          |          | ●        |           |        |           | N               | Alcohols, C16-18 unsaturated + 5 EO  | 68920-66-1 | 9.2  |
| ROKAnol K7     |          |          | ●        |           |        |           | N               | Alcohols, C16-18 unsaturated + 7 EO  | 68920-66-1 | 10.8 |
| ROKAnol K18ROK |          |          | ●        |           | ●      |           | N               | Alcohols, C16-18 unsaturated + 18 EO | 68920-66-1 | 16.3 |
| ROKAnol K21    |          |          | ●        |           | ●      |           | N               | Alcohols, C16-18 unsaturated + 21 EO | 68920-66-1 | 16.5 |
| ROKAnol L4     | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-14 + 4 EO              | 68439-50-9 | 10.0 |
| ROKAnol L4P5   | ●        |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + EO/PO             | 68439-51-0 | 5.3  |
| ROKAnol L5A    | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-16 + 5 EO              | 68551-12-2 | 10.5 |
| ROKAnol L5P5   | ●        |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + EO/PO             | 68439-51-0 | 6.0  |
| ROKAnol L7     | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-14 + 7 EO              | 68439-50-9 | 12.9 |
| ROKAnol L7A    | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-16 + 7 EO              | 68551-12-2 | 12.9 |
| ROKAnol L7W    | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-14 + 7 EO              | 68439-50-9 | 12.9 |
| ROKAnol L9A    | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-16 + 9 EO              | –          | –    |
| ROKAnol L9AW   | ●        |          |          | ●         | ●      |           | N               | Alcohols, C12-16 + 9 EO              | –          | 13.3 |
| ROKAnol L10    | ●        |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + 10 EO             | 68439-50-9 | 14.1 |

## Textile Auxiliary – product list

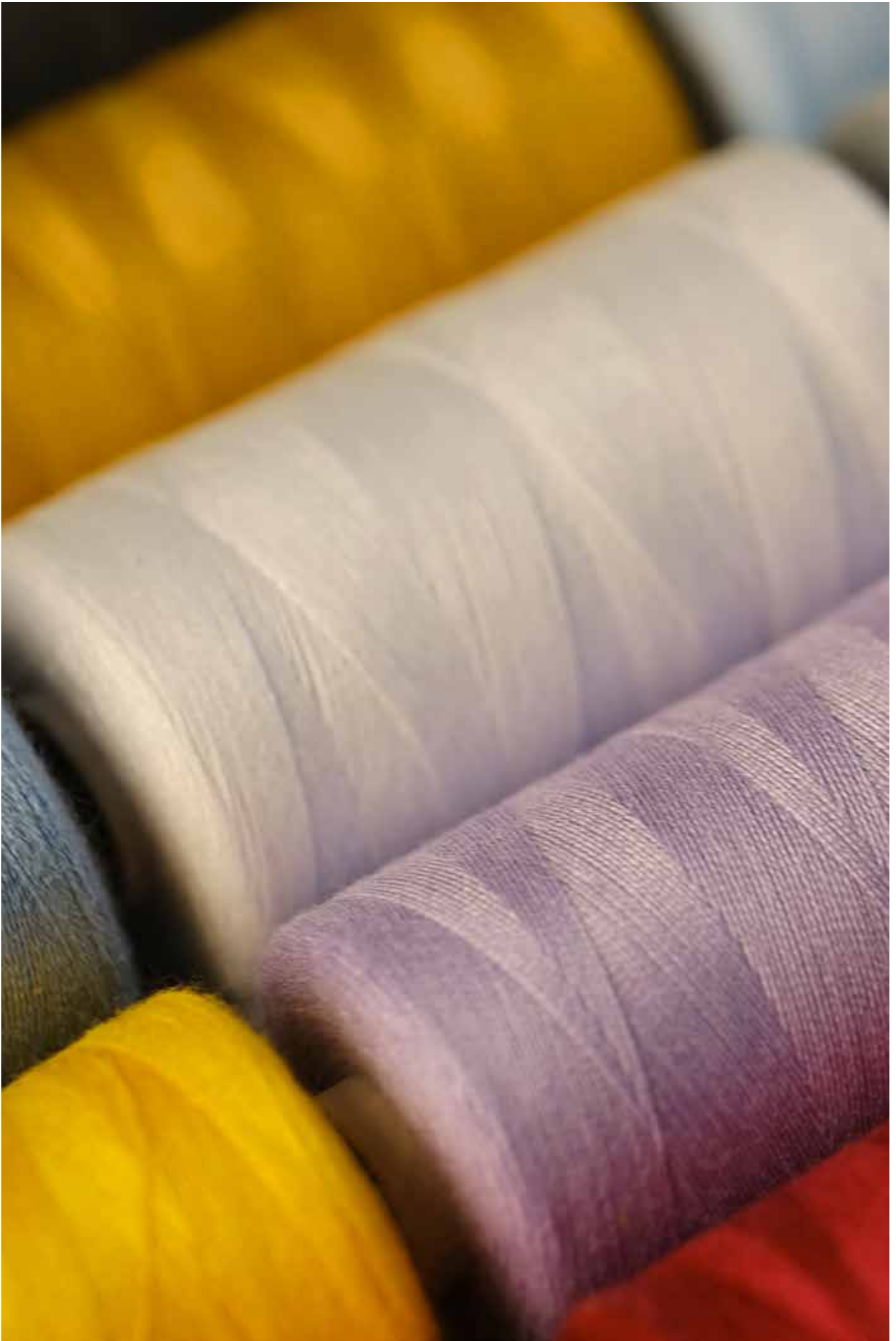
| Product            | Spinning | Desizing | Scouring | Bleaching | Dyeing | Finishing | Ionic character | Description                 | CAS         | HLB  |
|--------------------|----------|----------|----------|-----------|--------|-----------|-----------------|-----------------------------|-------------|------|
| ROKAnol L10A       | ●        |          | ●        | ●         | ●      |           | N               | Alcohols, C12-16 + 10 EO    | 68551-12-2  | 14.1 |
| ROKAnol L10/80     | ●        |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + 10 EO    | 68439-50-9  | 14.1 |
| ROKAnol L80/50W    | ●        |          | ●        | ●         | ●      |           | N               | Alcohol, C12-14 + EO/PO     | 68439-51-0  | 17.6 |
| ROKAnol LK1        | ●        |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + EO       | 68439-50-9  | 3.7  |
| ROKAnol LK2        | ●        |          | ●        |           |        | ●         | N               | Alcohols, C12-14 + 2 EO     | 68439-50-9  | 6.2  |
| ROKAnol LK3        | ●        |          | ●        |           |        | ●         | N               | Alcohols, C12-14 + 3 EO     | 68439-50-9  | 7.8  |
| ROKAnol LP2024W/95 |          |          | ●        | ●         | ●      |           | N               | Alcohols, C10 + EO/PO       | 37251-67-5  | 6.3  |
| ROKAnol LP100      |          |          | ●        | ●         | ●      |           | N               | Alcohols, C12-15 + EO/PO    | 120313-48-6 | –    |
| ROKAnol LP1319     |          |          | ●        | ●         | ●      |           | N               | Alcohols, C16-18 + EO/PO    | 68002-96-0  | –    |
| ROKAnol LP160      |          |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + PO       | 68439-51-0  | –    |
| ROKAnol LP200      |          |          | ●        | ●         | ●      |           | N               | Isodecyl Alcohol + EO/PO    | 68439-30-5  | –    |
| ROKAnol LP2023     |          |          | ●        | ●         | ●      |           | N               | Alcohols, C16-18 + EO/PO    | 68002-96-0  | –    |
| ROKAnol LP2126     |          |          | ●        | ●         | ●      |           | N               | Alcohols, C16-18 + EO/PO    | 68002-96-0  | –    |
| ROKAnol LP2227     |          |          | ●        | ●         | ●      |           |                 | 2-Propylheptanol + EO/PO    | 166736-08-9 | –    |
| ROKAnol LP2529     |          |          | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + EO/PO    | 68551-13-3  | 3.5  |
| ROKAnol LP27       |          | ●        | ●        | ●         | ●      |           | N               | Alcohols, C12-14 + EO/PO    | 68439-51-0  | 6.0  |
| ROKAnol LP3135     |          |          | ●        | ●         | ●      |           | N               | Alcohols, C9-11 + EO/PO     | 154518-36-2 | –    |
| ROKAnol LP3943     |          | ●        | ●        | ●         |        |           | N               | Alcohols, C12-15 EO/PO      | 120313-48-6 | –    |
| ROKAnol LP400      |          | ●        | ●        | ●         | ●      |           | N               | Isodecyl Alcohol + EO/PO    | 103818-93-5 | –    |
| ROKAnol LP60       |          |          | ●        | ●         | ●      |           | N               | Alcohols, C9-11+PO          | 68920-69-4  | –    |
| ROKAnol LP700      |          | ●        | ●        | ●         | ●      |           | N               | Isotridecyl Alcohol + EO/PO | 196823-11-7 | –    |
| ROKAnol LP911      |          | ●        | ●        | ●         | ●      |           | N               | Alcohols, C9-11+ EO/PO      | 102782-43-4 | –    |
| ROKAnol MT5E       |          | ●        |          |           | ●      | ●         | N               | Alcohols, C8-18 + 5 EO      | 157707-43-2 | –    |
| ROKAnol MT7E       |          | ●        |          |           | ●      | ●         | N               | Alcohols, C8-18 + 7 EO      | 157707-43-2 | –    |
| ROKAnol NL3        |          | ●        |          |           | ●      |           | N               | Alcohols, C9-11 + 3 EO      | 68439-46-3  | 8.5  |
| ROKAnol NL4        |          | ●        |          | ●         | ●      | ●         | N               | Alcohols, C9-11 + 4 EO      | 68439-46-3  | –    |
| ROKAnol NL5        |          | ●        |          | ●         | ●      | ●         | N               | Alcohols, C9-11 + 5 EO      | 68439-46-3  | 11.6 |
| ROKAnol NL6        |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | 12.5 |
| ROKAnol NL6W       |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | –    |
| ROKAnol NL6W/95    |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | 12.5 |
| ROKAnol NL8        |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | 15.7 |
| ROKAnol NL8W       |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | 13.8 |
| ROKAnol NL8P4      |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C9-11 + EO/PO     | 103818-93-5 | 9.5  |
| ROKAnol NL9        |          |          | ●        |           |        |           | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | –    |
| ROKAnol O3         |          |          |          |           |        | ●         | N               | Oleyl Alcohol + 3 EO        | 9004-98-2   | 7.1  |
| ROKAnol O5         |          |          |          |           |        | ●         | N               | Oleyl Alcohol + 5 EO        | 9004-98-2   | 9.1  |

## Textile Auxiliary – product list

| Product            | Spinning | Desizing | Scouring | Bleaching | Dyeing | Finishing | Ionic character | Description                                    | CAS         | HLB  |
|--------------------|----------|----------|----------|-----------|--------|-----------|-----------------|------------------------------------------------|-------------|------|
| ROKAnol O18        |          |          |          |           |        | ●         | N               | Oleyl Alcohol + 18 EO                          | 9004-98-2   | 16.3 |
| ROKAnol O20        |          |          |          |           |        | ●         | N               | Oleyl Alcohol + 20 EO                          | 9004-98-2   | 15.3 |
| ROKAnol O100       |          |          |          |           |        | ●         | N               | Oleyl Alcohol + 100 EO                         | 9004-98-2   | 18.8 |
| ROKAnol RZ4P11™    |          |          | ●        |           |        |           | N               | Alcohols, C16-18 + EO/PO                       | 68002-96-0  | 3.3  |
| ROKAnol T6         |          |          | ●        |           | ●      |           | N               | Alcohols, C16-18 + 6 EO                        | 68439-49-6  | 10   |
| ROKAnol T12        |          |          | ●        |           | ●      |           | N               | Alcohols, C16-18 + 12 EO                       | 68439-49-6  | 13.5 |
| ROKAnol T18        |          |          |          |           | ●      |           | N               | Alcohols, C16-18 + 18 EO                       | 68439-49-6  | 16.3 |
| ROKAnol T18W       |          |          |          |           | ●      |           | N               | Alcohols, C16-18, ethoxylated Aqueous solution | 68439-49-6  | 16.3 |
| ROKAnol T20        |          |          |          |           | ●      |           | N               | Alcohols, C16-18 + 20 EO                       | 68439-49-6  | 15.3 |
| ROKAnol T20 flakes |          |          |          |           | ●      |           | N               | Alcohols, C16-18 + 20 EO                       | 68439-49-6  | 15.3 |
| ROKAnol T25        |          |          |          |           | ●      |           | N               | Alcohols, C16-18 + 25 EO                       | 68439-49-6  | 16   |
| ROKAnol T25 flakes |          |          |          |           | ●      |           | N               | Alcohols, C16-18 + 25 EO                       | 68439-49-6  | 16   |
| ROKAnol TMP3       |          | ●        |          |           | ●      |           | N               | Alcohols, C13-15 + 3 EO                        | 157627-86-6 | –    |
| ROKAnol TMP5       |          | ●        |          | ●         | ●      | ●         | N               | Alcohols, C13-15 + 5 EO                        | 157627-86-6 | 12   |
| ROKAnol TMP7       |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C13-15 + 7 EO                        | 157627-86-6 | 12   |
| ROKAnol TMP7R      |          | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C13-15 + 7 EO                        | 157627-86-6 | 12   |
| ROKAnol UD3        | ●        | ●        | ●        | ●         |        |           | N               | Alcohols, C11-Iso + 3 EO                       | 127036-24-2 | 8.7  |
| ROKAnol UD5        | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C11-Iso + 5 EO                       | 127036-24-2 | 11.0 |
| ROKAnol UD7        | ●        | ●        | ●        | ●         | ●      | ●         | N               | Alcohols, C11-Iso + 7 EO                       | 127036-24-2 | 12.3 |
| ROKAfenol N7       | ●        | ●        | ●        | ●         | ●      |           | N               | Nonylphenol + 7 EO                             | 127087-87-0 | 11.5 |
| ROKAfenol N8       | ●        | ●        | ●        | ●         | ●      |           | N               | Nonylphenol + 9 EO                             | 127087-87-0 | 12.5 |
| ROKAfenol N8P7     | ●        | ●        | ●        | ●         | ●      |           | N               | Nonylphenol + EO/PO                            | 37251-69-7  | 7.7  |
| ROKAfenol N8P14    | ●        | ●        | ●        | ●         | ●      |           | N               | Nonylphenol + EO/PO                            | 37251-69-7  | 5.5  |
| ROKAfenol N9       | ●        | ●        |          | ●         | ●      |           | N               | Nonylphenol + 9 EO                             | 127087-87-0 | 12.8 |
| ROKAmid MRZ17      | ●        |          |          |           | ●      |           | N               | Glyceryl Reapeate + 17 EO                      | 221045-17-6 | –    |
| ROKAmid RAD        | ●        |          |          |           | ●      |           | N               | Oleamide DEA                                   | 68603-38-3  | –    |
| ROKAmin K15        |          |          |          |           | ●      |           | N               | Cocamine + 15 EO                               | 61791-14-8  | 15.5 |
| ROKAmin K15K       |          |          |          |           |        | ●         | C               | Cocamine + 15 EO, Methosulfate                 | 68989-03-7  | –    |
| ROKAmin SR5        |          |          |          |           | ●      |           | N               | Tallow Amine + 5.8 EO                          | 61791-26-2  | 9.8  |
| ROKAmin SR8        |          |          |          | ●         | ●      |           | N               | Tallow Amine + 10 EO                           | 61791-26-2  | 12.4 |
| ROKAmin SR8K       |          |          |          | ●         | ●      |           | N               | Tallow Amine + 10 EO                           | –           | 12.4 |
| ROKAmin SRK8       |          |          |          |           |        | ●         | N               | Tallow Amine + 8 EO, Methosulfate              | 73138-81-5  | –    |
| ROKAmin SR8P4      |          |          | ●        | ●         | ●      |           | N               | Tallow Amine + EO/PO                           | –           | 8.8  |
| ROKAmin SR11       |          |          |          | ●         | ●      |           | N               | Tallow Amine + 11 EO                           | 61791-26-2  | 12.5 |
| ROKAmin SR22       |          |          |          | ●         | ●      |           | N               | Tallow Amine + 25 EO                           | 61791-26-2  | 16.1 |
| ROKAcet K7         | ●        |          |          |           |        | ●         | N               | Cocoate + 7 EO                                 | 61791-29-5  | 11.6 |

## Textile Auxiliary – product list

| Product         | Spinning | Desizing | Scouring | Bleaching | Dyeing | Finishing | Ionic character | Description                                                                         | CAS        | HLB  |
|-----------------|----------|----------|----------|-----------|--------|-----------|-----------------|-------------------------------------------------------------------------------------|------------|------|
| ROKAcet KO300G  | ●        |          |          |           |        | ●         | N               | Glyceryl Cocoate + 7 EO                                                             | 68201-46-7 | –    |
| ROKAcet O7      | ●        |          | ●        |           |        |           | N               | Oleate + 7 EO                                                                       | 9004-96-0  | 10.6 |
| ROKAcet R11     |          |          |          |           | ●      | ●         | N               | Castor Oil + 11 EO                                                                  | 61791-12-6 | –    |
| ROKAcet R26     |          |          |          |           | ●      | ●         | N               | Castor oil + 26 EO                                                                  | 61791-12-6 | 11.0 |
| ROKAcet R36     |          |          |          |           | ●      | ●         | N               | Castor Oil + 36 EO                                                                  | 61791-12-6 | –    |
| ROKAcet R40     |          |          |          |           | ●      | ●         | N               | Castor oil + 40 EO                                                                  | 61791-12-6 | 13.0 |
| ROKAcet R70     |          |          |          |           | ●      |           | N               | Castor oil + 70 EO                                                                  | 61791-12-6 | 15.4 |
| ROKAcet S7      |          |          |          |           |        | ●         | N               | Stearate + 7 EO                                                                     | 9004-99-3  | 10.6 |
| ROKAcet S24     |          |          |          |           |        | ●         | N               | Stearate + 24 EO                                                                    | 9004-99-3  | 15.8 |
| ROKAmer 1000    |          |          |          | ●         | ●      |           | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | –    |
| ROKAmer 1010    |          |          |          | ●         | ●      |           | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | 16.6 |
| ROKAmer 1010/50 |          |          |          | ●         | ●      |           | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | 16.6 |
| ROKAmer 2000    |          |          | ●        | ●         | ●      |           | N               | PEG/PPG Copolymer                                                                   | 9003-11-6  | 2.4  |
| ROKAmer 2100    |          | ●        | ●        |           | ●      |           | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | 3.4  |
| ROKAmer 2330    |          | ●        | ●        |           | ●      |           | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | 4.9  |
| ROKAmer 2400    |          |          | ●        | ●         | ●      |           | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  |      |
| ROKAmer 2600    |          |          | ●        | ●         | ●      |           | N               | PEG/PPG Copolymer                                                                   | 9003-11-6  | 5.6  |
| ROKAmer 2950    |          | ●        | ●        | ●         | ●      | ●         | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | 8.1  |
| ROKAmer G3400   |          |          | ●        | ●         | ●      |           | N               | Glycerine + EO/PO                                                                   | 9082-00-2  | –    |
| ROKAmer G3500   |          |          | ●        | ●         | ●      |           | N               | Glycerine + EO/PO                                                                   | 9082-00-2  | –    |
| ROKAmer G3800   |          |          | ●        | ●         | ●      |           | N               | Glycerine + EO/PO                                                                   | 9082-00-2  | –    |
| ROKAmer G5000E  |          |          | ●        | ●         | ●      |           | N               | Glycerine + EO/PO                                                                   | 9082-00-2  | –    |
| ROKAmer PP450   |          | ●        | ●        | ●         | ●      | ●         | N               | PPG                                                                                 | 25322-69-4 | –    |
| ROKAmer PP2000  |          |          | ●        | ●         | ●      |           | N               | PPG                                                                                 | 25322-69-4 | –    |
| ROKAmer PP4000  |          |          | ●        | ●         | ●      |           | N               | PPG                                                                                 | 25322-69-4 | –    |
| ROKwin 60       | ●        |          |          |           | ●      |           | N               | Sorbitan Monostearate                                                               | 1338-43-8  | 4.7  |
| ROKwin 80       | ●        |          |          |           | ●      |           | N               | Sorbitan Monooleate                                                                 | 1338-43-8  | –    |
| ROKwinol 20     | ●        |          |          |           | ●      | ●         | N               | Sorbitan Monooleate + 20 EO                                                         | 9005-64-5  | 15.0 |
| ROKwinol 60     | ●        |          |          |           | ●      | ●         | N               | Sorbitan Monostearate + 20 EO                                                       | 9005-67-8  | –    |
| ROKwinol 80     | ●        |          |          |           | ●      | ●         | N               | Sorbitan Monooleate + 20 EO                                                         | 9005-65-6  | –    |
| Tequat L90i     |          |          |          |           |        | ●         | K               | Quaternary methylsulfate of fatty acid diesters with triethanolamine in isopropanol | –          | –    |
| EXOdemul S-11   |          | ●        |          |           |        | ●         | N               | PEG/PPG-Copolymer                                                                   | –          | –    |
| EXOdemul WD-18  |          | ●        |          |           |        | ●         | N               | PEG/PPG-Copolymer                                                                   | 9003-11-6  | –    |



## 02 / Main functions of surfactants in textile industry

### EXOfos Series

EXOfos Series are highly active anionic surfactants – acidic phosphate esters. The products are manufactured with

inherent mono- and diester content and will contain residual phosphoric acid, alkoxyated and non-alkoxyated materials.

### Applications



### Benefits

- excellent solubilizing properties
- good wetting properties
- good temperature resistance
- compatible with wide range of nonionic surfactants
- compatible with other additives
- effective ingredient of laundry agents
- good cleaner properties



## Additional information

| Physicochemical parameters                            | EXOfos PA-080S               | EXOfos PA-1300                    | EXOfos PB-043K                                        | EXOfos PB-083                                       | EXOfos PB-136                    | EXOfos PB-136B                   |
|-------------------------------------------------------|------------------------------|-----------------------------------|-------------------------------------------------------|-----------------------------------------------------|----------------------------------|----------------------------------|
| CAS                                                   | 12645-31-7                   | –                                 | –                                                     | 68439-39-4                                          | 9046-01-9                        | 9046-01-9                        |
| Chemical name                                         | 2-Ethylhexyl Ether Phosphate | Tridecyl Ether Phosphate          | POE (3) Butyl Alcohol Ether Phosphate, Potassium salt | POE (3) 2-Ethylhexyl Ether Phosphate                | POE (6) Tridecyl Ether Phosphate | POE (6) Tridecyl Ether Phosphate |
| Appearance at temperature (20 ÷ 25)°C                 | clear liquid                 | liquid                            | viscous liquid                                        | (40 ÷ 45°C): clear to slightly opaque yellow liquid | clear to slightly hazy liquid    | clear to slightly hazy liquid    |
| Color (Gardner) at (20 ÷ 25)°C                        | max.4                        | max.4                             | (at 40°C) max. 3                                      | (at 40°C) max. 2                                    | (at 40°C) max. 2                 | (at 40°C) max. 2                 |
| pH                                                    | (1% solution) 1.5 ÷ 3.0      | (1% aq/EtOH solution) approx. 2.5 | (5% solution) 7 ÷ 8                                   | (1% solution) 1.5 ÷ 3.0                             | (1% solution) 1.0 ÷ 2.5          | (1% solution) 1.5 ÷ 3.0          |
| Acid Value (to the first inflection point), mg KOH/g  | record (205 ÷ 220)           | recorded (150 ÷ 170)              | –                                                     | typical (90 ÷ 130)                                  | typical (60 ÷ 90)                | 75 ÷ 85                          |
| Acid Value (to the second inflection point), mg KOH/g | 290 ÷ 350                    | 230 ÷ 255                         | –                                                     | 180 ÷ 200                                           | 90 ÷ 150                         | typical (120 ÷ 150)              |
| Water, % (m/m)                                        | max.1.0                      | max.1.0                           | 49 ÷ 51                                               | max.1                                               | max. 1                           | max.0.8                          |
| Active substance, % (m/m)                             | approx. 100                  | approx. 100                       | 49 ÷ 51                                               | approx. 100                                         | approx. 100                      | approx. 100                      |
| Density at 25°C, g/mL                                 | approx. 1.02                 | approx. 0.98                      | (at 20°C) approx. 1.14                                | approx. 1.08                                        | approx. 1.05                     | approx. 1.05                     |
| Viscosity at 25°C, cP                                 | approx. 1500                 | approx. 1100                      | approx. 3200                                          | approx. 700                                         | approx. 1000                     | approx. 750                      |
| Surface tension of 0.1% solution at 25°C, mN/m        | 32                           | 31                                | 36                                                    | 30                                                  | 28                               | 28                               |



## Additional information

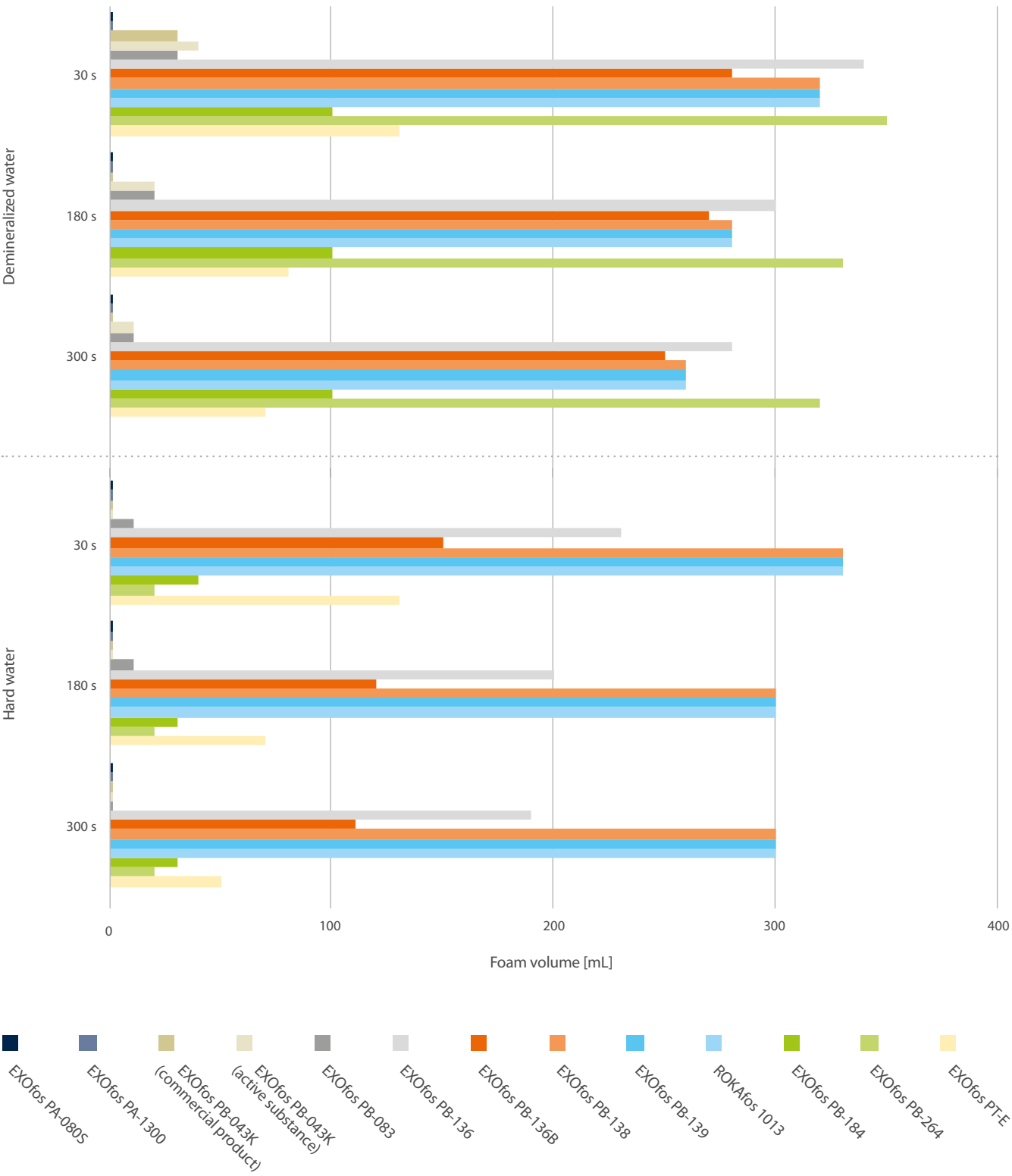
| Physicochemical parameters                            | EXOfos PB-138                    | EXOfos PB-139                    | ROKAfos 1013                     | EXOfos PB-184                 | EXOfos PB-264                  | EXOfos PT-E                              |
|-------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------------|--------------------------------|------------------------------------------|
| CAS                                                   | 9046-01-9                        | 9046-01-9                        | 9046-01-9                        | 39464-69-2                    | 68511-37-5                     | 90093-37-1                               |
| Chemical name                                         | POE (8) Tridecyl Ether Phosphate | POE (9) Tridecyl Ether Phosphate | POE (9) Tridecyl Ether Phosphate | POE (4) Oleyl Ether Phosphate | POE (4) Lauryl Ether Phosphate | POE (16) Tristyrylphenol Ether Phosphate |
| Appearance at temperature (20 ± 25)°C                 | (40°C): liquid                   | clear to slightly hazy liquid    | clear to slightly hazy liquid    | viscous liquid                | viscous liquid                 | viscous liquid                           |
| Color (Gardner) at (20 ± 25)°C                        | (Hazen scale at 40°C) max. 150   | (at 40°C) max. 3                 | (at 40°C) max. 3                 | max.12                        | max.2                          | –                                        |
| pH                                                    | (1.5% solution) 2 ÷ 3            | 1.5 ÷ 3.0                        | (1% solution) 1.5 ÷ 3.0          | (1% solution) 1.5 ÷ 3.0       | max.1.2                        | (5% solution) 1.0 ÷ 3.0                  |
| Acid Value (to the first inflection point), mg KOH/g  | typical (75 ÷ 85)                | record (50 ÷ 70)                 | 60 ÷ 70                          | 82.0 ÷ 92.0                   | 90 ÷ 110                       | typical (25 ÷ 35)                        |
| Acid Value (to the second inflection point), mg KOH/g | 95 ÷ 115                         | 87 ÷ 117                         | typical (87 ÷ 117)               | 135 ÷ 160                     | 150 ÷ 180                      | 50 ÷ 70                                  |
| Water, % (m/m)                                        | max.0.8                          | max.1.0                          | max.1.0                          | max.1                         | max.2.0                        | max.1                                    |
| Active substance, % (m/m)                             | approx. 100                      | approx. 100                      | approx. 100                      | approx. 100                   | approx. 100                    | approx. 100                              |
| Density at 25°C, g/mL                                 | approx. 1.08                     | approx. 1.05                     | approx. 1.05                     | approx. 1.01                  | approx. 1.03                   | approx. 1.14                             |
| Viscosity at 25°C, cP                                 | approx. 1500                     | approx. 1500                     | approx. 1500                     | approx. 2300                  | approx. 800                    | approx. 6000                             |
| Surface tension of 0.1% solution at 25°C, mN/m        | 34                               | 35                               | 35                               | 35                            | 32                             | 44                                       |



## Foam capability

Foam capability was measured according to modified Ross-Miles' method (PN-ISO 696:1994) – the modified Ross-Miles method; at a temperature of 25°C, for a surfactant concentration of 1.0 g/L,

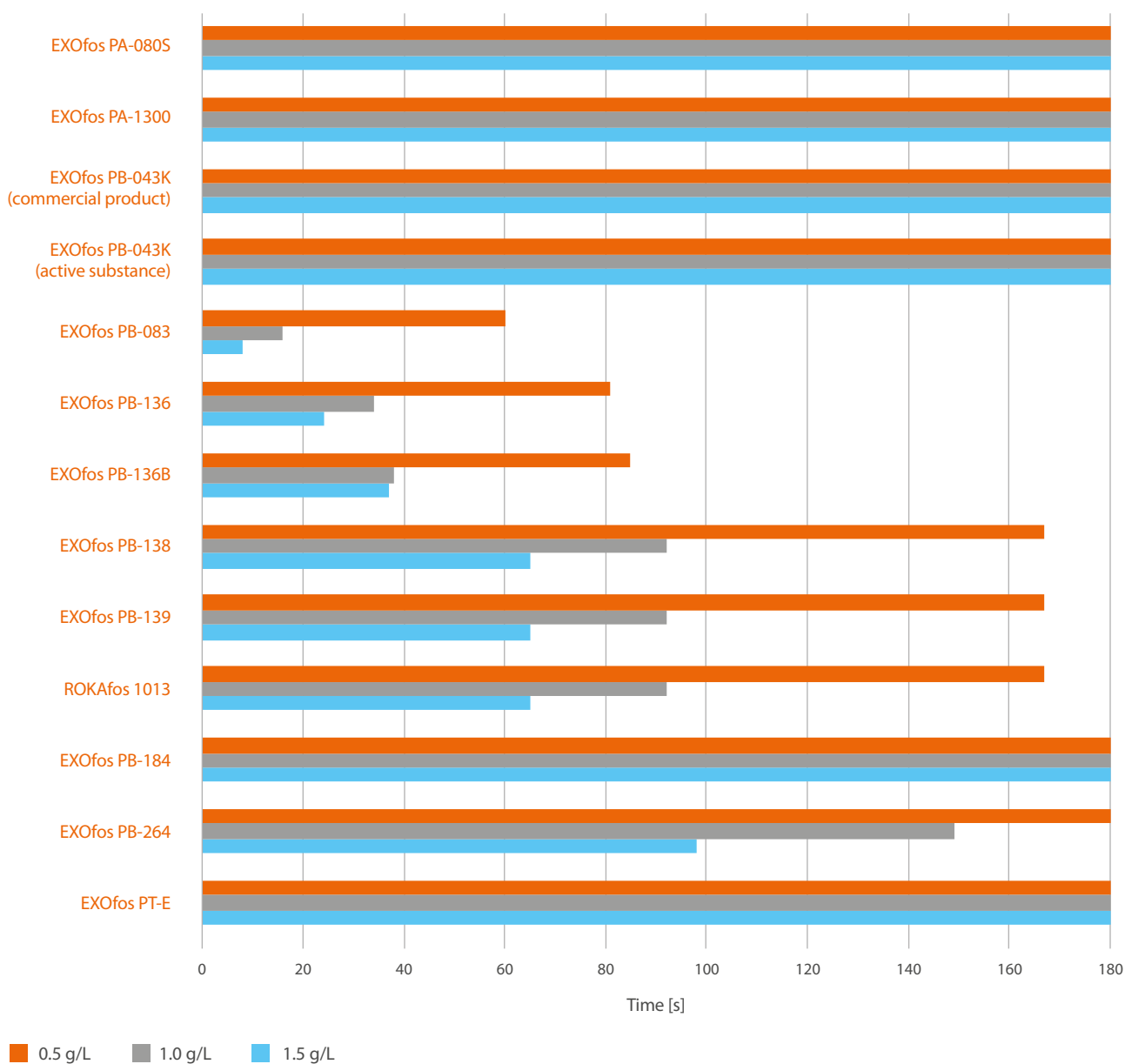
in both demineralized and hard (17°d) water. The foam value was measured after 30, 180 and 300 seconds. The results were presented on the graph.



## Wetting capability

Wetting capability was measured at 20°C for three concentrations. The results were presented on the graph.

The capability of wetting cotton fabric was determined in accordance with PN-EN 1772:2001.



## Alkali and acid resistance

The physical stability of surface active agents over a specified time, in acidic/alkaline environment, is the maximum concentration of acid/base (g/L), at which the surfactant can be dissolved in an acidic/alkaline solution with a concentration of 1% to form a

stable solution. Stability is determined by evaluating the appearance of solutions. The analysis of product stability has been performed in accordance with PN-EN 14712:2005.

## Alkali resistance

| NaOH con.<br>[g/L] | 10 | 50 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 |
|--------------------|----|----|----|----|----|-----|-----|-----|-----|-----|
| Product name       |    |    |    |    |    |     |     |     |     |     |
| EXOfos PA- 080S    | ●  | ○  |    |    |    |     |     |     |     |     |
| EXOfos PA-1300     | ●  | ○  |    |    |    |     |     |     |     |     |
| EXOfos PB-043K     | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| EXOfos PB-083      | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| EXOfos PB-136      | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| EXOfos PB-136B     | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ○   |     |     |
| EXOfos PB-138      | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| EXOfos PB-139      | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| ROKAfos 1013       | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| EXOfos PB-184      | ●  | ●  | ●  | ●  | ○  |     |     |     |     |     |
| EXOfos PB-264      | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   |
| EXOfos PT-E        | ●  | ●  | ●  | ●  | ●  | ○   |     |     |     |     |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

| NaOH con.<br>[g/L] | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 240 | 250 | 270 | 280 |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Product name       |     |     |     |     |     |     |     |     |     |     |     |
| EXOfos PA- 080S    |     |     |     |     |     |     |     |     |     |     |     |
| EXOfos PA-1300     |     |     |     |     |     |     |     |     |     |     |     |
| EXOfos PB-043K     | ●   | ●   | ○   |     |     |     |     |     |     |     |     |
| EXOfos PB-083      | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   |
| EXOfos PB-136      | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   |     |     |
| EXOfos PB-136B     |     |     |     |     |     |     |     |     |     |     |     |
| EXOfos PB-138      | ●   | ●   | ●   | ●   | ●   | ●   | ○   |     |     |     |     |
| EXOfos PB-139      | ●   | ●   | ●   | ●   | ●   | ●   | ○   |     |     |     |     |
| ROKAfos 1013       | ●   | ●   | ●   | ●   | ●   | ●   | ○   |     |     |     |     |
| EXOfos PB-184      |     |     |     |     |     |     |     |     |     |     |     |
| EXOfos PB-264      | ●   | ●   | ●   | ●   | ○   |     |     |     |     |     |     |
| EXOfos PT-E        |     |     |     |     |     |     |     |     |     |     |     |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

## Acid resistance

| Product name \ H <sub>2</sub> SO <sub>4</sub> con. [mL/L] | 1 | 10 | 20 | 30 | 100 | 120 | 140 | 225 |
|-----------------------------------------------------------|---|----|----|----|-----|-----|-----|-----|
| EXOfos PA- 080S                                           | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| EXOfos PA-1300                                            | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| EXOfos PB-043K                                            | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| EXOfos PB-083                                             | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| EXOfos PB-136                                             | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| EXOfos PB-136B                                            | ● | ●  | ●  | ●  | ●   | ○   | ○   | ○   |
| EXOfos PB-138                                             | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| EXOfos PB-139                                             | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAfos 1013                                              | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| EXOfos PB-184                                             | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| EXOfos PB-264                                             | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| EXOfos PT-E                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

## Solubility

| Product name    | Demineralized water | Methanol | Acetone | Ethyl ether |
|-----------------|---------------------|----------|---------|-------------|
| EXOfos PA- 080S | ●                   | ●        | ●       | ●           |
| EXOfos PA-1300  | ●                   | ●        | ●       | ●           |
| EXOfos PB-043K  | ●                   | ●        | ●       | ●           |
| EXOfos PB-083   | ●                   | ●        | ●       | ●           |
| EXOfos PB-136   | ●                   | ●        | ●       | ●           |
| EXOfos PB-136B  | ●                   | ●        | ●       | ●           |
| EXOfos PB-138   | ●                   | ●        | ●       | ●           |
| EXOfos PB-139   | ●                   | ●        | ●       | ●           |
| ROKAfos 1013    | ●                   | ●        | ●       | ●           |
| EXOfos PB-184   | ●                   | ●        | ●       | ●           |
| EXOfos PB-264   | ●                   | ●        | ●       | ●           |
| EXOfos PT-E     | ●                   | ●        | ●       | ●           |

● soluble   ● insoluble   ● partially soluble

# ROSULfan E

ROSULfan E is an anionic, low foaming surfactant of the alkyl sulphates group. The product is an aqueous solution of the sodium salt of 2-ethylhexyl sulphate. The product is a specialised anionic surfactant, combining several unique features, the synergy of which is extremely important for the desired features of the final formulations.

ROSULfan E has excellent stability in alkaline and acidic environments, which makes it perfect for use in many industrial formulations. The product is successfully applied in the production of industrial

and domestic highly alkaline cleaning agents and acidic preparations used for cleaning metal. A very important advantage of this product is the low gelation tendency in electrolyte solutions. This eliminates problems associated with a local increase in viscosity, e.g. in dispensing systems. The product is also used in the textile industry as a wetting agent in cotton bleaching processes and during the mercerisation process. Due to the high resistance to alkalis and low foaming properties, it is a widely used component of professional preparations in the industrial and institutional cleaning segments.

## Additional information

| Physicochemical parameters          | ROSULfan E   |
|-------------------------------------|--------------|
| CAS                                 | 126-92-1     |
| Molecular weight, g/mol             | approx. 232  |
| Appearance at temperature (20÷25)°C | clear liquid |
| Colour (Hazen units) at (20÷25)°C   | max.150      |
| pH of 25% solution                  | 9.0 ÷ 11.0   |
| Active substance, % (m/m)           | 38 ÷ 42      |
| Sodium sulphate (VI), % (m/m)       | max.1.5      |
| Unsulphated substances, % (m/m)     | max.2        |
| Solidification point, °C            | approx. –5   |
| Water, % (m/m)                      | approx. 60   |
| Density at 20 °C, g/mL              | approx. 1.10 |

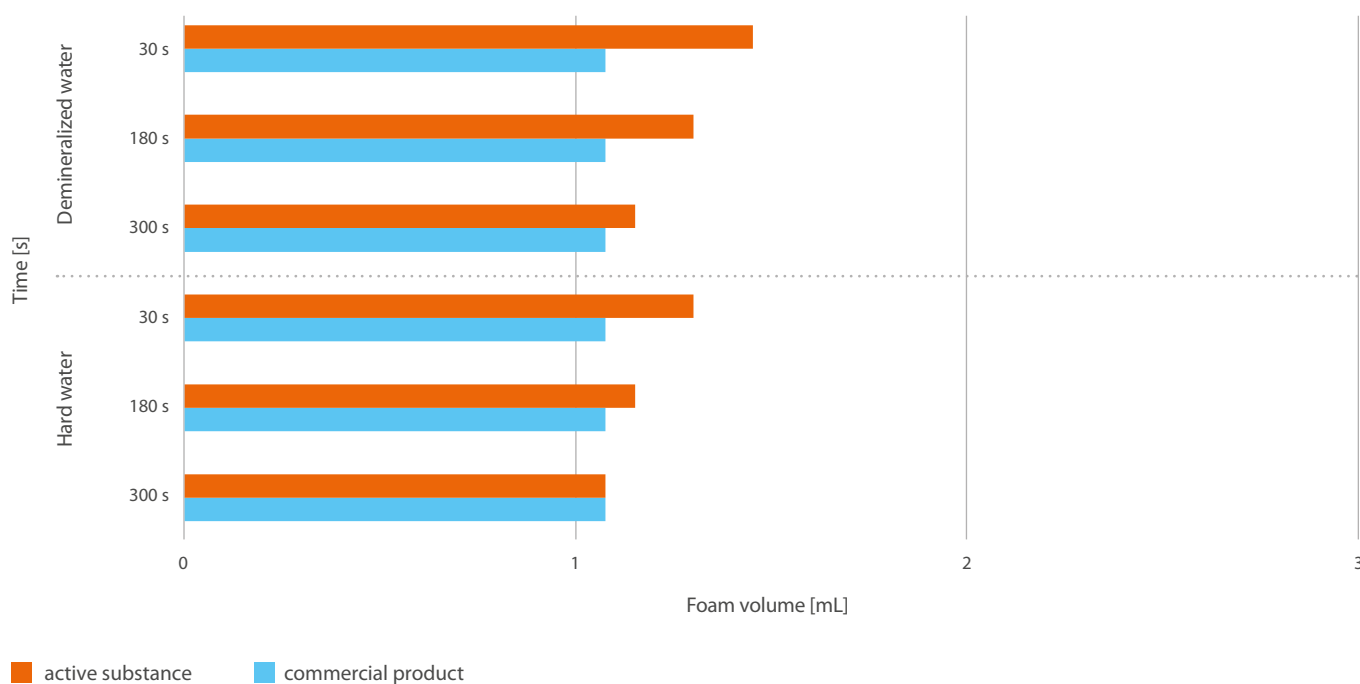


## Foam capability

Foam is a heterogeneous system in which the liquid is the continuous phase and the dispersed phase is gas. Foams, as well as emulsions, are thermodynamically unstable systems, so surfactant molecules on the interface are required to stabilize them. The ability to foam a substance is important in many industrial applications

including the detergents, where it prevents re-soil in the washing or cleaning processes. The determination of the foam capability was performed according to PN-ISO 696:1994 (the modified Ross-Miles method) at a temperature of 25°C, for a surfactant concentration of 1.0 g/L, both in demineralized water and hard water (17°d).

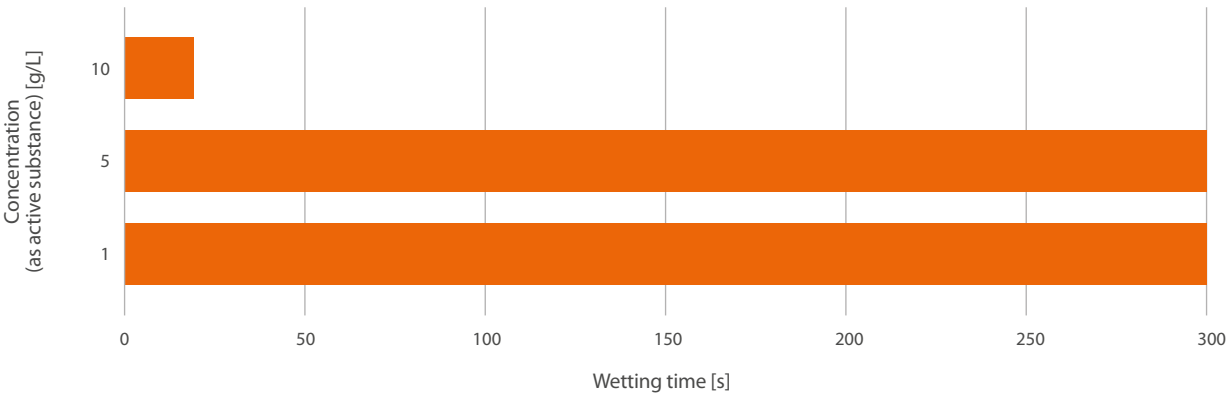
### Foam stability of ROSULfan E (concentration 1.0 g/L, 25°C)



## Wetting capability

The capability of wetting cotton fabric was determined in accordance to PN-EN 1772:2001.

### Wetting capability of ROSULfan E (20°C with demineralized water)



## Alkali and acid resistance

Surfactants used in industrial cleaning have to be resistant to strong acids or alkalis. Acidic cleaning agents are mainly applied to remove mineral deposits from acid-resistant surfaces, while alkaline agents are known primarily for their remarkable degreasing

ability. ROSULfan E is featured with excellent stability in the presence of acids and alkalis solutions.

The analysis of stability for ROSULfan E has been performed in accordance with the PN-EN 14712:2005.



## Alkaline resistance

| NaOH con.<br>[g/L] | 10 | 50 | 100 | 120 | 130 | 140 |
|--------------------|----|----|-----|-----|-----|-----|
| Product name       |    |    |     |     |     |     |
| ROSULfan E         | ●  | ●  | ●   | ●   | ○   | ○   |

| KOH con.<br>[g/L] | 10 | 50 | 100 | 120 | 130 | 140 |
|-------------------|----|----|-----|-----|-----|-----|
| Product name      |    |    |     |     |     |     |
| ROSULfan E        | ●  | ●  | ●   | ●   | ●   | ○   |

○ macroscopic phase separation    ● clear, homogeneous solution    ● homogeneous, opalescent solution

## Acid resistance

| H <sub>2</sub> SO <sub>4</sub> con.<br>[mL/L] | 1 | 50 | 100 | 150 | 200 | 225 |
|-----------------------------------------------|---|----|-----|-----|-----|-----|
| Product name                                  |   |    |     |     |     |     |
| ROSULfan E                                    | ● | ●  | ●   | ●   | ●   | ●   |

| HCl con.<br>[mL/L] | 1 | 50 | 100 | 150 | 200 | 225 |
|--------------------|---|----|-----|-----|-----|-----|
| Product name       |   |    |     |     |     |     |
| ROSULfan E         | ● | ●  | ●   | ●   | ●   | ●   |

○ macroscopic phase separation    ● clear, homogeneous solution    ● homogeneous, opalescent solution

## Solubility

The solubility of ROSULfan E in water and other solvents is shown in the table below.

| Product name | Demineralized water | Methanol | Acetone | Ethyl ether |
|--------------|---------------------|----------|---------|-------------|
| ROSULfan E   | ●                   | ●        | ●       | ●           |

● soluble    ● insoluble    ● partially soluble

## Solubilizing properties

**ROSULfan E** is particularly stable against alkaline solutions in which the content of e.g. sodium hydroxide is already too high for nonionic alkoxyated products. This causes turbidity and even phase separation of the formulation. However, the addition of ROSULfan E dramatically changes the appearance of the product, it becomes completely clear.

This is because this anionic surfactant improves the stability of the final formulation. Moreover, the combination of ROSULfan E with a low foaming product, which is a non-ionic alkoxyate, does not change the foaming of the finished formulation during its use. The compositions of the tested mixtures are presented below.

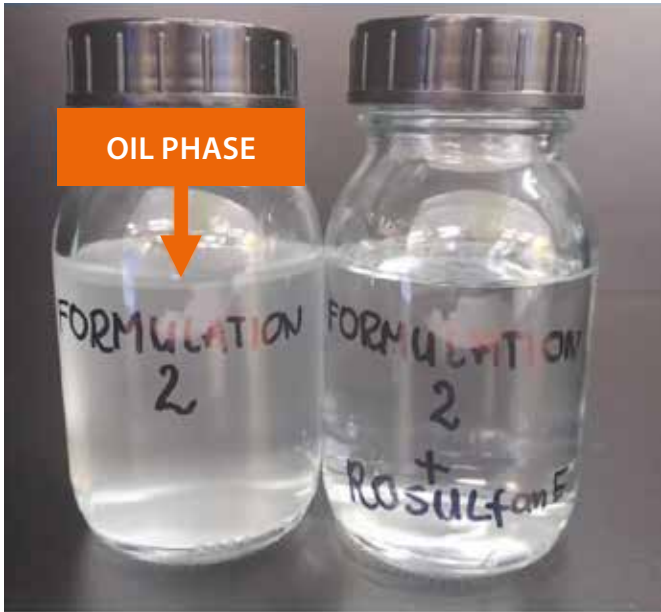
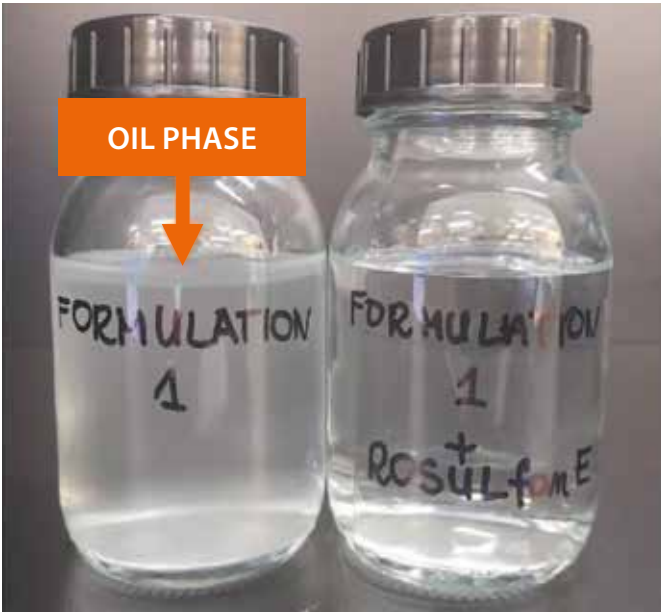
|                    | Formulation 1    | Formulation 1<br>+<br>ROSULfan E |
|--------------------|------------------|----------------------------------|
|                    | Concetrations, % |                                  |
| ROKAnol LP3135     | 1.5              | 1.5                              |
| ROSULfan E         | -                | 10                               |
| NaOH, 50% solution | 10               | 10                               |
| Water              | up to 100        | up to 100                        |

|                    | Formulation 2    | Formulation 2<br>+<br>ROSULfan E |
|--------------------|------------------|----------------------------------|
|                    | Concetrations, % |                                  |
| ROKAnol LP3135     | 1.5              | 1.5                              |
| ROSULfan E         | -                | 10                               |
| NaOH, 50% solution | 10               | 10                               |
| Water              | up to 100        | up to 100                        |

Appearance of the test samples after mixing



Appearance of the test samples after 1 day



## ROKAnol Series

### Comparison of selected products of the ROKAnols Series

**ROKAnols** are non-ionic surfactants that belong to the group of alkoxyate fatty alcohols. Below there is a comparison of application properties for ethoxylated surfactants, taking into account different lengths of carbon chains of fatty alcohols and the same degrees of ethoxylation (if present in a given product group).

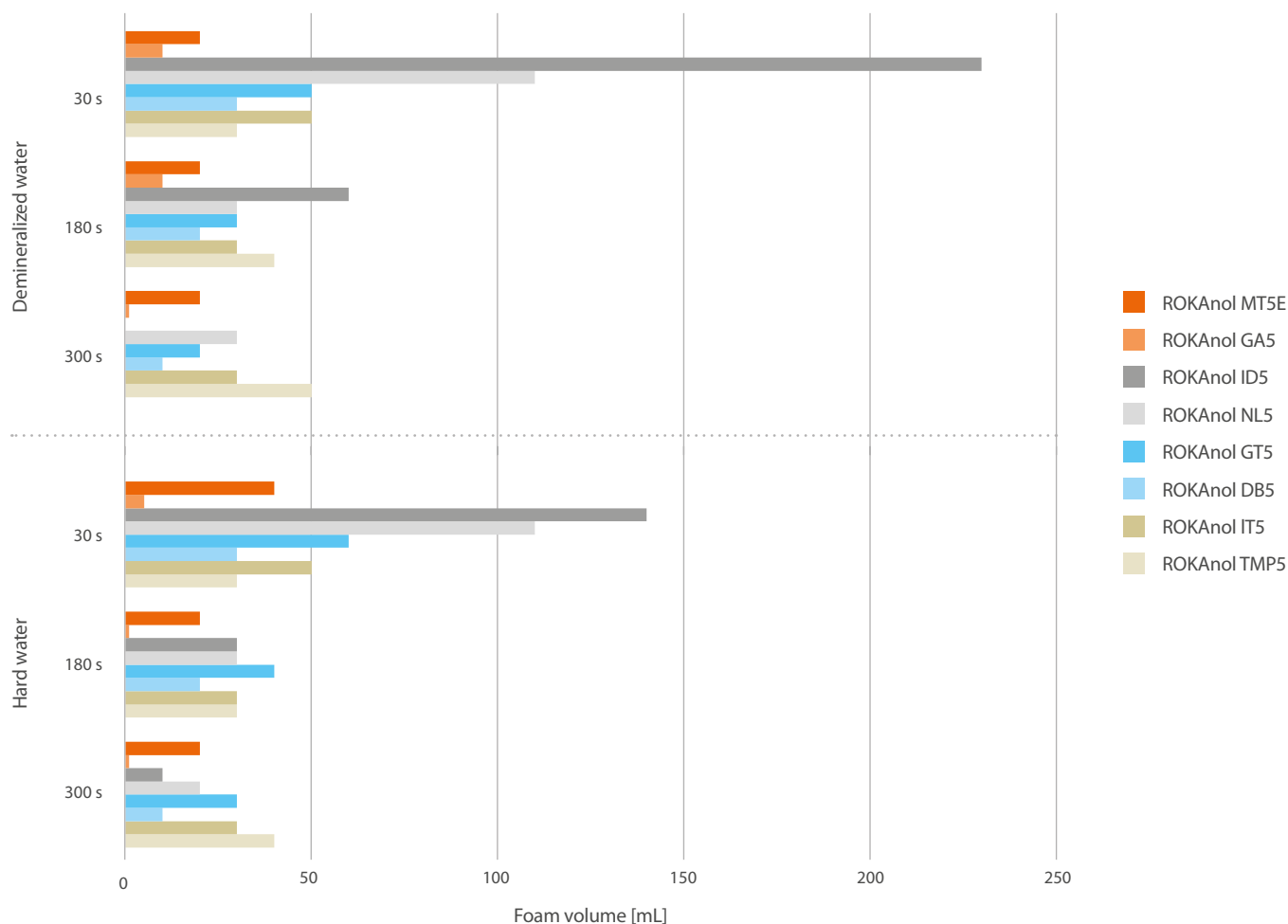
- **ROKAnol MT5E** and **ROKAnol MT7E** – C8-C18 alcohol, ethoxylated
- **ROKAnol GA5** and **ROKAnol GA7** – C10 alcohol (Guerbet alcohol), ethoxylated
- **ROKAnol ID5** and **ROKAnol ID7** – C9-C11 alcohol, C10 rich, ethoxylated
- **ROKAnol NL5** and **ROKAnol NL7** – C9-C11 alcohol, ethoxylated
- **ROKAnol GT5** and **ROKAnol GT7** – C9-C16 alcohol, ethoxylated
- **ROKAnol L7** – C12-14 alcohol, ethoxylated
- **ROKAnol DB5** and **ROKAnol DB7** – C12-C15 alcohol, ethoxylated
- **ROKAnol IT5** and **ROKAnol IT7** – C13 alcohol, branched, ethoxylated
- **ROKAnol TMP5** and **ROKAnol TMP7** – C13-C15 alcohol, ethoxylated

### Foam capability

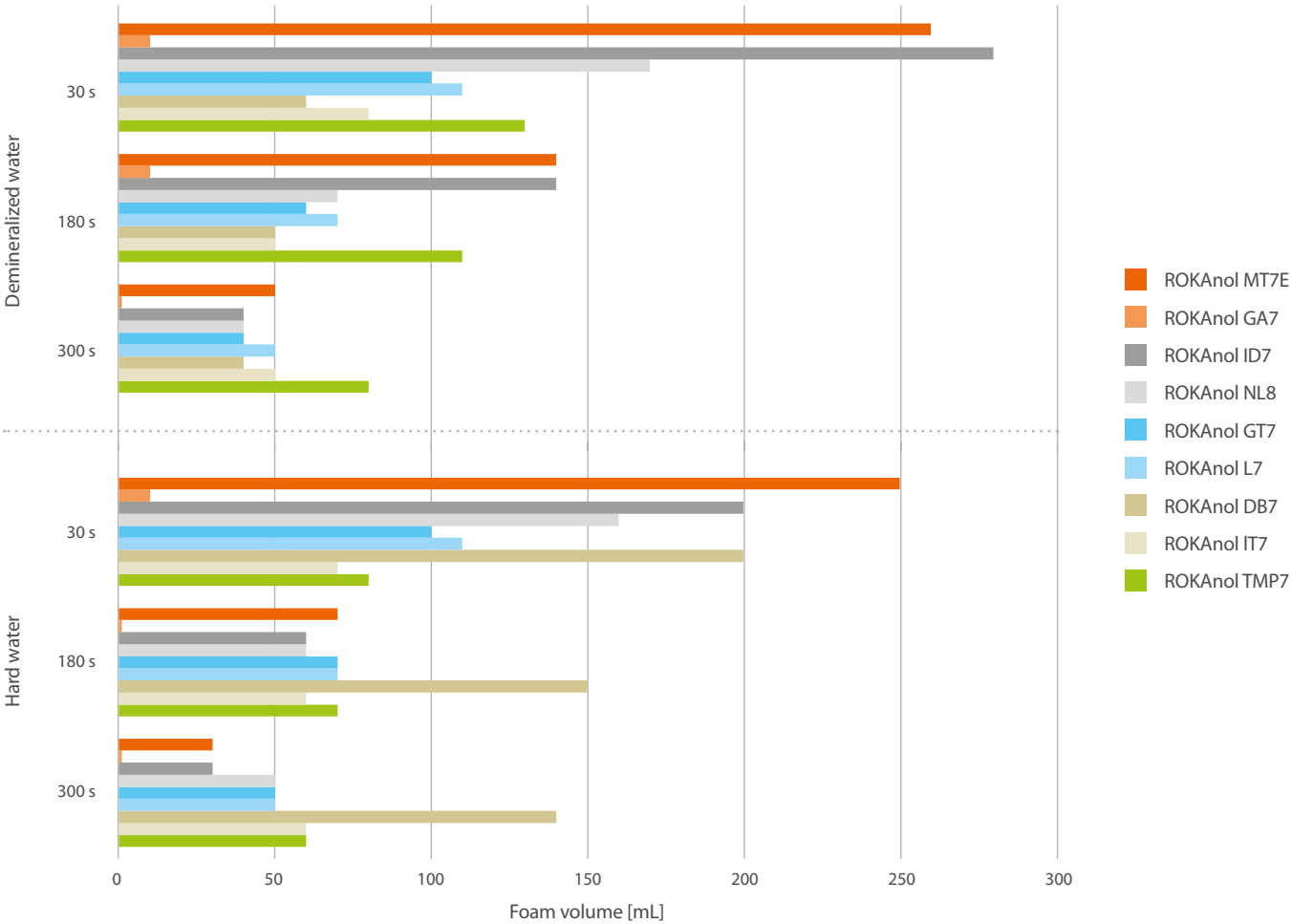
The determination of the foam capability was performed according to PN-ISO 696:1994 (the modified Ross-Miles method) at a temperature of 25°C, for a surfactant concentration of 1.0 g/L,

in both demineralized and hard (17°d) water. The foam stability results of selected ROKAnols Series are shown on the graph below.

### Foam capability (5EO)



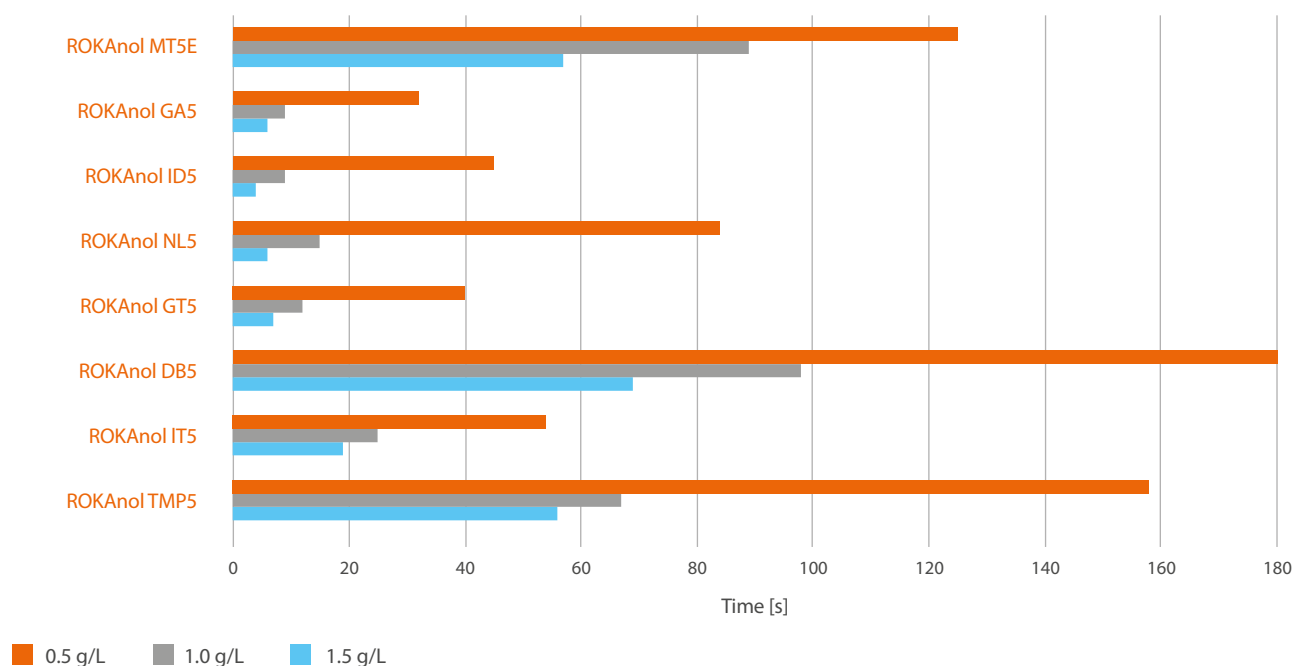
Foam capability (7EO)



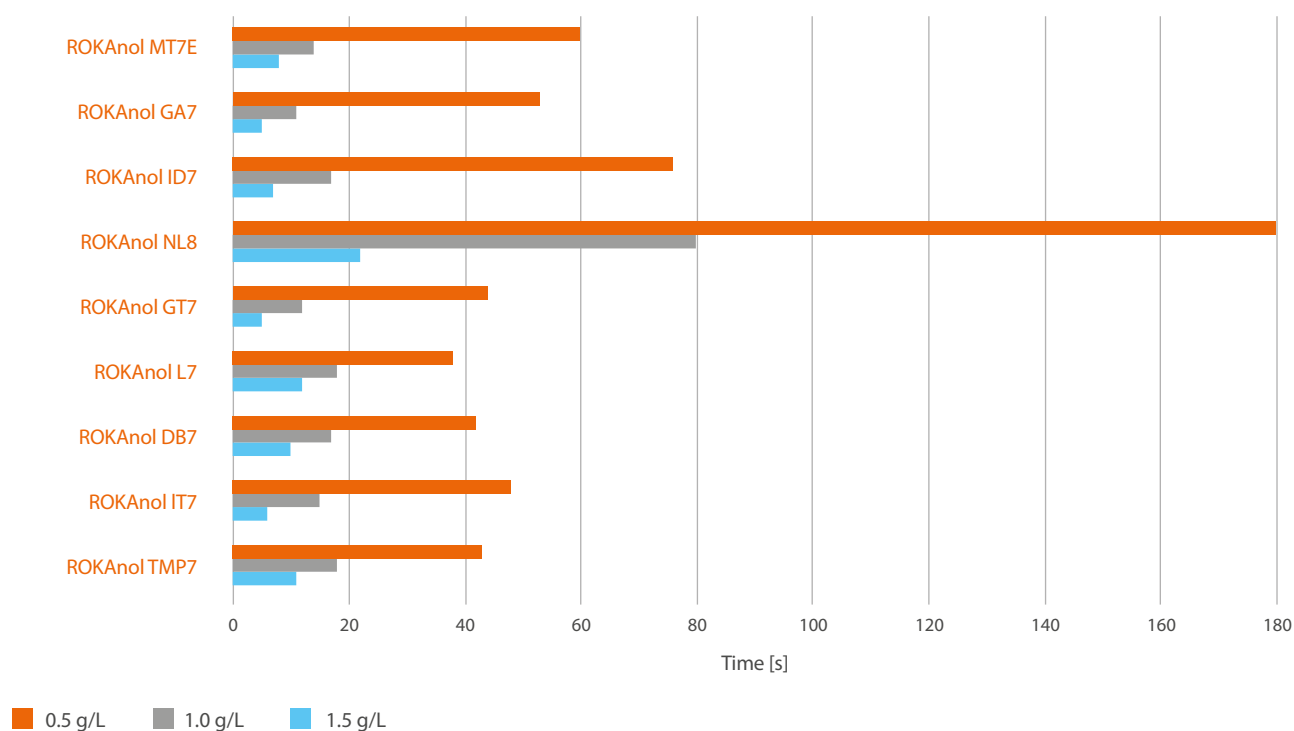
## Wetting capability

The capability of wetting cotton fabric was determined in accordance with PN-EN 1772:2001. The wetting capability results are shown on the graphs below.

### Wetting capability (5EO)



### Wetting capability (7EO)



## Alkali and acid resistance

The physical stability of surface active agents over a specified time, in acidic/alkaline environment, is the maximum concentration of acid/base (g/L), at which the surfactant can be dissolved in an acidic/alkaline solution with a concentration of 1% to form

a stable solution. Stability is determined by evaluating the appearance of solutions. The analysis of such stability of products has been performed in accordance with the PN-EN 14712:2005.



### Alkali resistance

| NaOH con.<br>[g/L]<br>Product name | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
|------------------------------------|----|----|----|----|----|----|----|----|----|
| ROKAnol MT5E                       | ●  | ●  | ●  | ●  | ●  | ○  |    |    |    |
| ROKAnol MT7E                       | ●  | ●  | ●  | ●  | ●  | ○  |    |    |    |
| ROKAnol GA5                        | ●  | ●  | ○  |    |    |    |    |    |    |
| ROKAnol GA7                        | ●  | ●  | ●  | ●  | ●  | ○  |    |    |    |
| ROKAnol ID5                        | ●  | ●  | ○  |    |    |    |    |    |    |
| ROKAnol ID7                        | ●  | ●  | ●  | ●  | ●  | ●  | ○  |    |    |
| ROKAnol NL5                        | ●  | ●  | ○  |    |    |    |    |    |    |
| ROKAnol NL8                        | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ○  |    |
| ROKAnol GT5                        | ●  | ●  | ●  | ●  | ●  | ●  | ○  |    |    |
| ROKAnol GT7                        | ●  | ●  | ●  | ○  |    |    |    |    |    |
| ROKAnol L7                         | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ○  |
| ROKAnol DB5                        | ●  | ○  |    |    |    |    |    |    |    |
| ROKAnol DB7                        | ●  | ●  | ●  | ●  | ○  |    |    |    |    |
| ROKAnol IT5                        | ○  |    |    |    |    |    |    |    |    |
| ROKAnol IT7                        | ○  |    |    |    |    |    |    |    |    |
| ROKAnol TMP5                       | ○  |    |    |    |    |    |    |    |    |
| ROKAnol TMP7                       | ●  | ●  | ●  | ●  | ●  | ●  | ○  |    |    |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

## Acid resistance

| Product name \ H <sub>2</sub> SO <sub>4</sub> con. [mL/L] | 1 | 10 | 20 | 30 | 100 | 120 | 140 | 225 |
|-----------------------------------------------------------|---|----|----|----|-----|-----|-----|-----|
| ROKAnol MT5E                                              | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol MT7E                                              | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol GA5                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol GA7                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol ID5                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol ID7                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol NL5                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol NL8                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol GT5                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol GT7                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol L7                                                | ● | ●  | ●  | ●  | ●   | ●   | ●   | ○   |
| ROKAnol DB5                                               | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| ROKAnol DB7                                               | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol IT5                                               | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| ROKAnol IT7                                               | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| ROKAnol TMP5                                              | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ●   |
| ROKAnol TMP7                                              | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

## Solubility

| Product name | Demineralized water | Methanol | Acetone | Ethyl ether |
|--------------|---------------------|----------|---------|-------------|
| ROKAnol MT5E | ●                   | ●        | ●       | ●           |
| ROKAnol MT7E | ●                   | ●        | ●       | ●           |
| ROKAnol GA5  | ●                   | ●        | ●       | ●           |
| ROKAnol GA7  | ●                   | ●        | ●       | ●           |
| ROKAnol ID5  | ●                   | ●        | ●       | ●           |
| ROKAnol ID7  | ●                   | ●        | ●       | ●           |
| ROKAnol NL5  | ●                   | ●        | ●       | ●           |
| ROKAnol NL8  | ●                   | ●        | ●       | ●           |
| ROKAnol L7   | ●                   | ●        | ●       | ●           |
| ROKAnol GT5  | ●                   | ●        | ●       | ●           |
| ROKAnol GT7  | ●                   | ●        | ●       | ●           |
| ROKAnol DB5  | ●                   | ●        | ●       | ●           |
| ROKAnol DB7  | ●                   | ●        | ●       | ●           |
| ROKAnol IT5  | ●                   | ●        | ●       | ●           |
| ROKAnol IT7  | ●                   | ●        | ●       | ●           |
| ROKAnol TMP5 | ●                   | ●        | ●       | ●           |
| ROKAnol TMP7 | ●                   | ●        | ●       | ●           |

● soluble   ● insoluble   ● partially soluble

## Capillarity of textile materials

Nonionic surfactants are widely used in textile industry for various purposes. Their function deals mainly which proper wetting process of fiber and fabric what influences the improvement in dye sorption and adhesive properties of fiber. Additionally, surfactants are responsible for emulsification and dispersing processes. They improve the resistance to abrasion, removing natural impurities and those generated during processing fiber. At the same time they

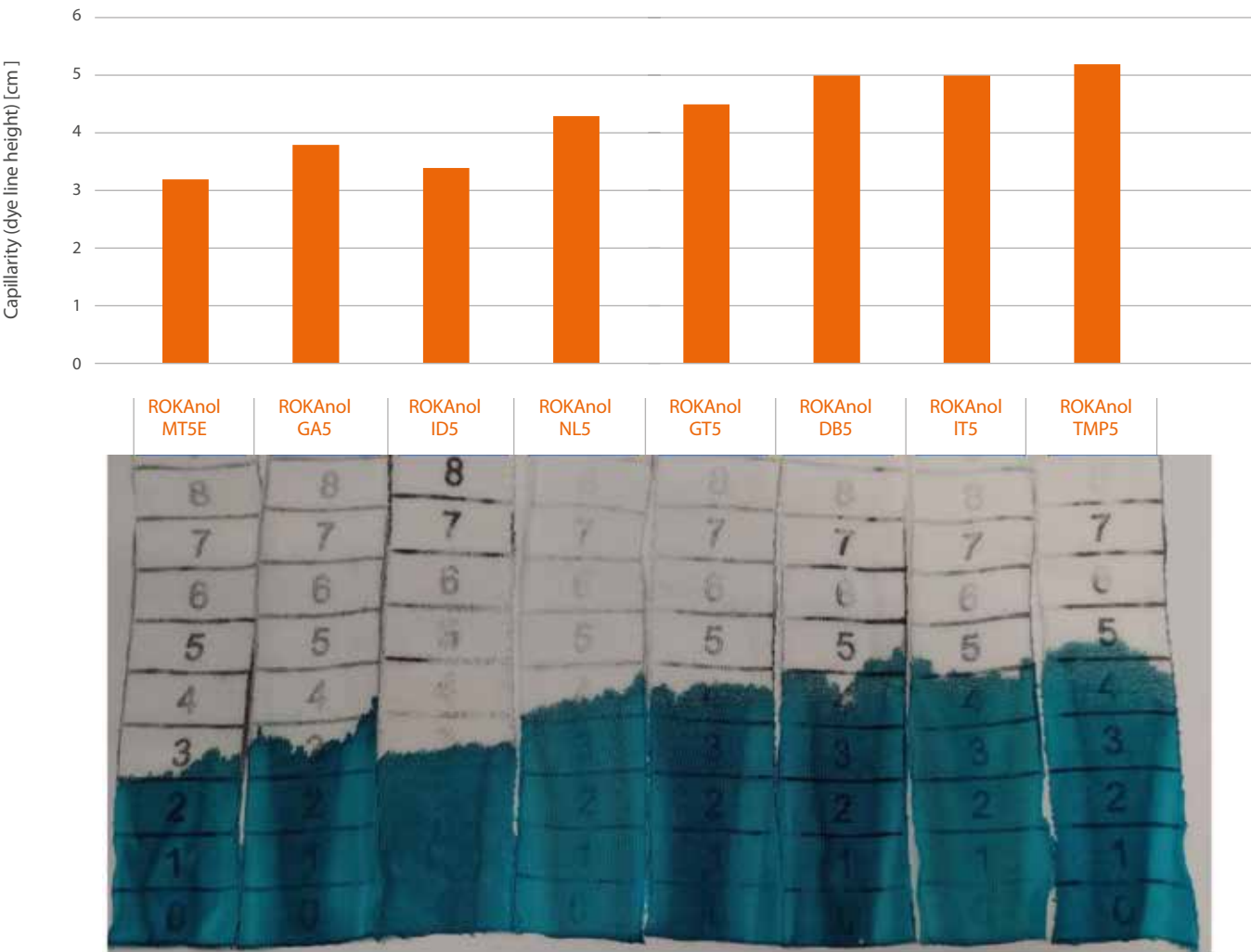
improve the wash fastness of the dye in fiber. One of the methods to estimate surfactants effectiveness is performing the capillarity test. First, tested material (100% combed cotton, weave left-right single bearing, area weight of 150 g/m<sup>2</sup>) is pretreated with bleaching solution (composition showed in table below). The process is performed at 95° ( for 45 minutes. Next, the specimen is rinsed in cold water and neutralized with acetic acid solution.

| Ingredient                       | Content, % |
|----------------------------------|------------|
| Wetting agent (ROKAnols)         | 0.2        |
| Sodium hydroxide (solid)         | 0.3        |
| Hydrogen peroxide (30% solution) | 0.5        |
| Demineralized water              | 99.0       |

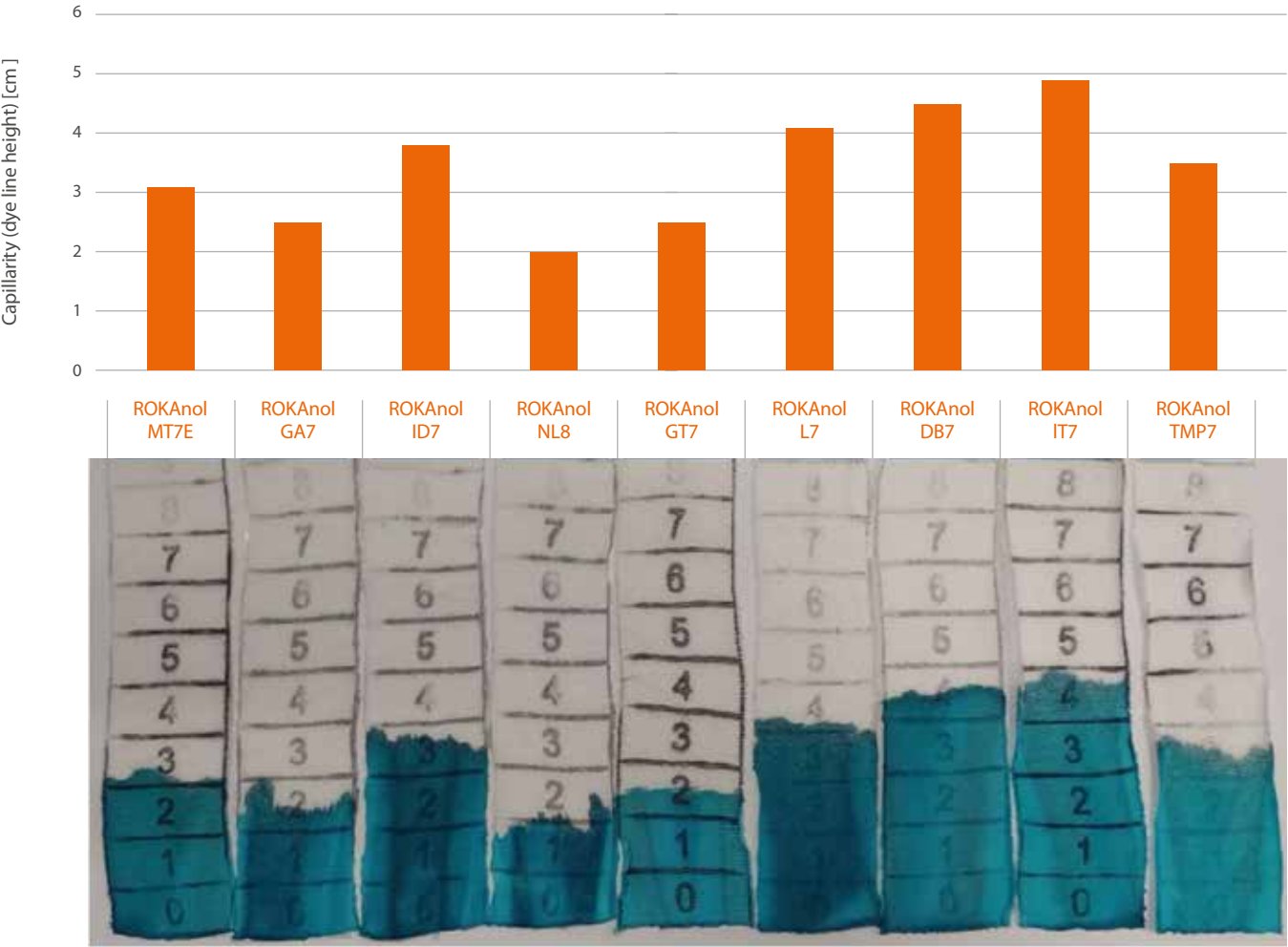
To evaluate capillarity, dried raw cotton knitted after the bleaching process, with the scale printed on is positioned vertically and placed in dye solution (aqueous solution of 2% helactine turquoise).

The height of its ascent is measured after one minute. The test is performed for three independently prepared specimens. The results are shown on the graphs below.

### Capillarity test (5EO)



Capillarity test (7EO)

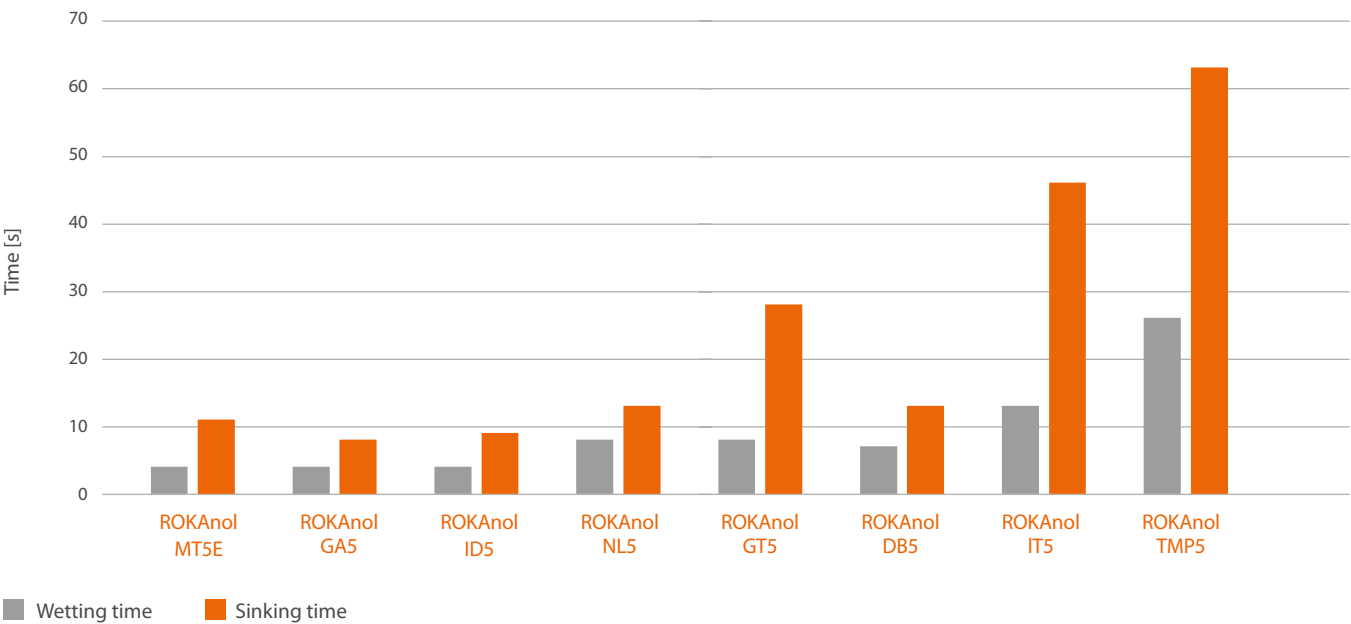


## Wetting and sinking test

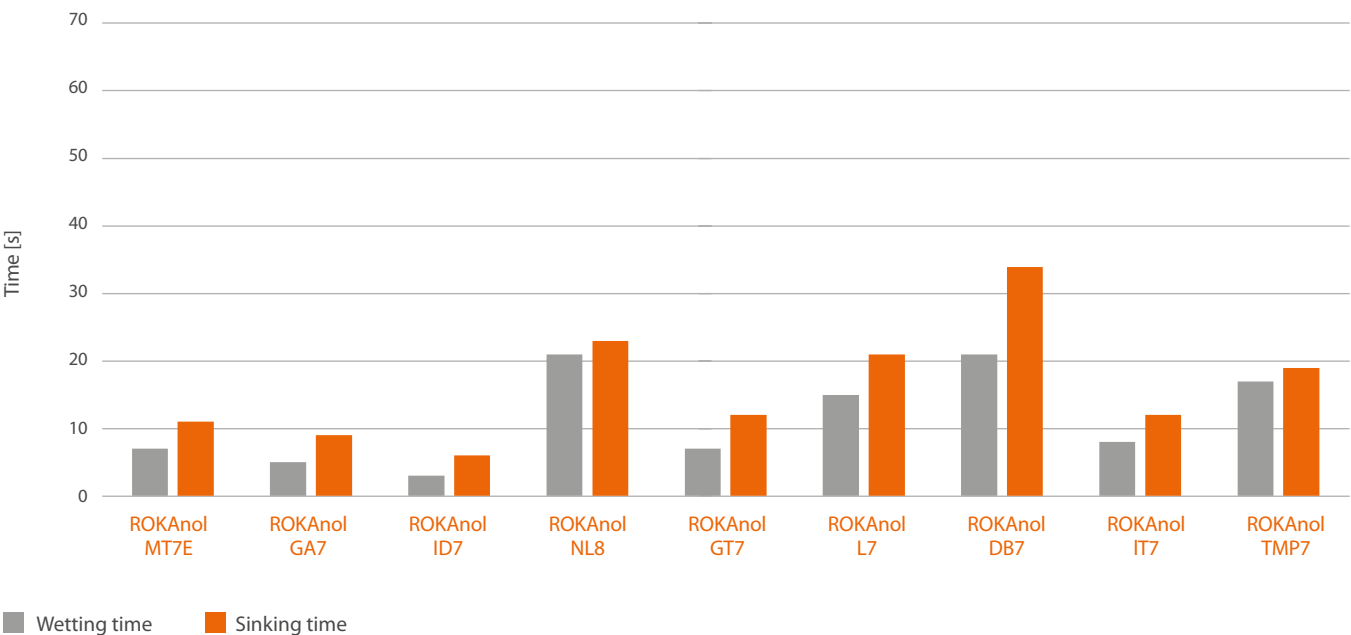
In the textile industry, an important parameter is the assessment of the wetting capacity of a cotton disc (raw knitted cotton) and the determination of the time of sinking of this disc in an aqueous solution of surface-active raw materials. The test was performed at 50°C, pH 11, using a surfactant concentration of 1 g/L, solution

volume – 500 mL. The prepared discs are thrown onto the surface of the tested solution, where first the wetting time of the fabric, and then the time in which the tested disc sinks is measured. The results are shown below.

### Capillarity test (5EO)



### Capillarity test (7EO)

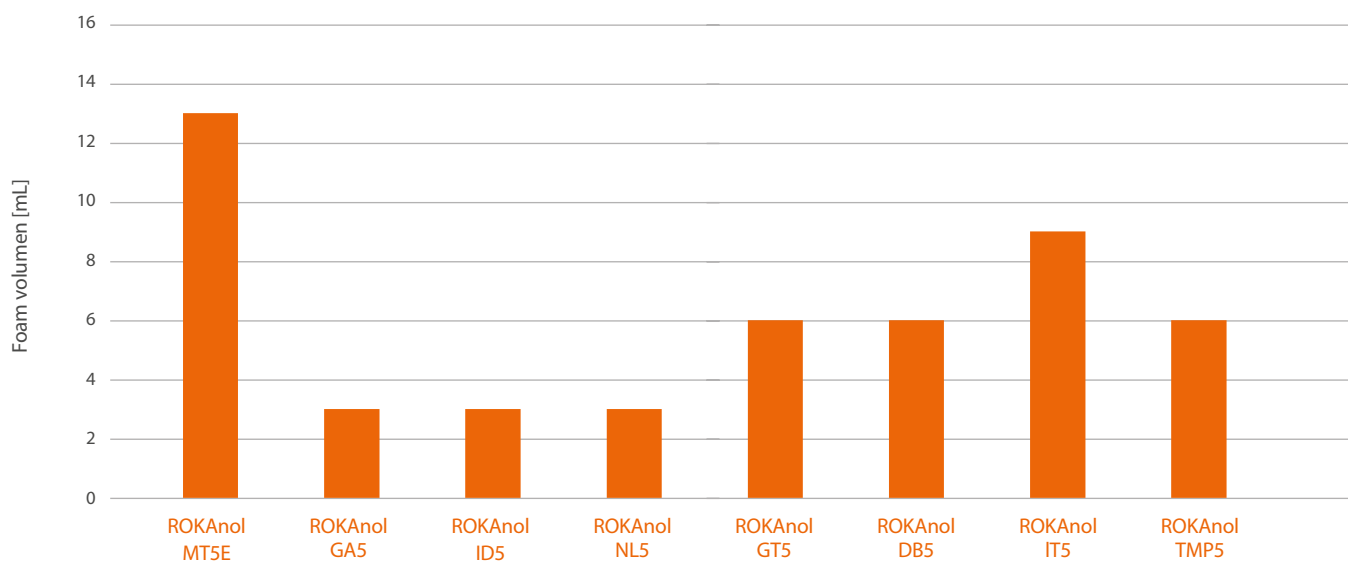


## Foam test

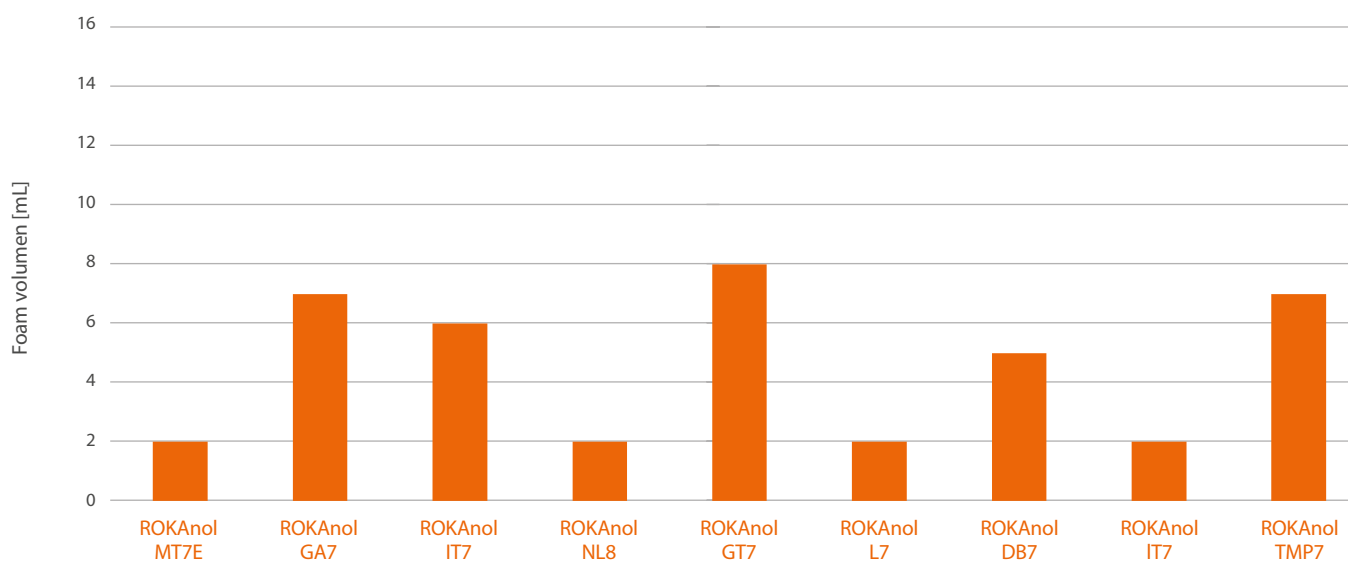
The levels of foam generated by the surfactant in an aqueous solution after shaking it in a cylinder 10 times were tested. The test was carried out at 50°C, pH 11, using a surfactant

concentration of 1 g/L, solution volume – 50 mL. The measurement time was 1 minute. The results are shown below.

### Foam test (5EO)



### Foam test (7EO)



## ROKAnol LP Series and other low foaming ROKAnols

### Comparison of selected products of the ROKAnols LP Series and other low foaming ROKAnols

**ROKAnols** are low foaming, non-ionic surfactants that belong to the group of alkoxylate fatty alcohols. Below there is a comparison of application properties for ethoxylated and propoxylated surfactants, taking into account different lengths of carbon chains of fatty alcohols. ROKAnols from low foaming range exhibit desired properties like good detergency, efficient wettability, degreasing abilities. The difference between ROKAnols and standard non-ionic surfactants is in their low foaming capacity. Due to that, these products can be used in many application where foam is problematic.

- **ROKAnol NL8P4** – C9-C11 alcohol, EO/PO
- **ROKAnol LP3135** – C9-C11 alcohol, ethoxylated
- **ROKAnol L5P5** – C12-14 alcohol, EO/PO
- **ROKAnol LP27** – C12-14 alcohol, EO/PO
- **ROKAnol LP200** – Isodecyl alcohol, EO/PO
- **ROKAnol LP400** – Isodecyl alcohol, EO/PO
- **ROKAnol LP700** – Isotridecyl alcohol, EO/PO
- **ROKAnol LP2126** – C16-C18 alcohol, EO/PO
- **ROKAnol RZ4P11** – C16-C18 alcohol, EO/PO
- **ROKAnol LP2855** – C12-18 alcohol, EO/PO
- **ROKAnol LP2227** – 2-Propylheptanol, EO/PO

### Foam capability

The determination of the foam capability was performed according to PN-ISO 696:1994 (the modified Ross-Miles method) at a temperature of 25°C, for a surfactant concentration of 1.0 g/L,

in both demineralized and hard (17°d) water. The foaming stability results of selected ROKAnols Series are shown in the table below.

| Foam value [mL] | Description |
|-----------------|-------------|
| 100–200         | moderate    |
| 70–100          | low         |
| 20–70           | poor        |
| 0–20            | non         |



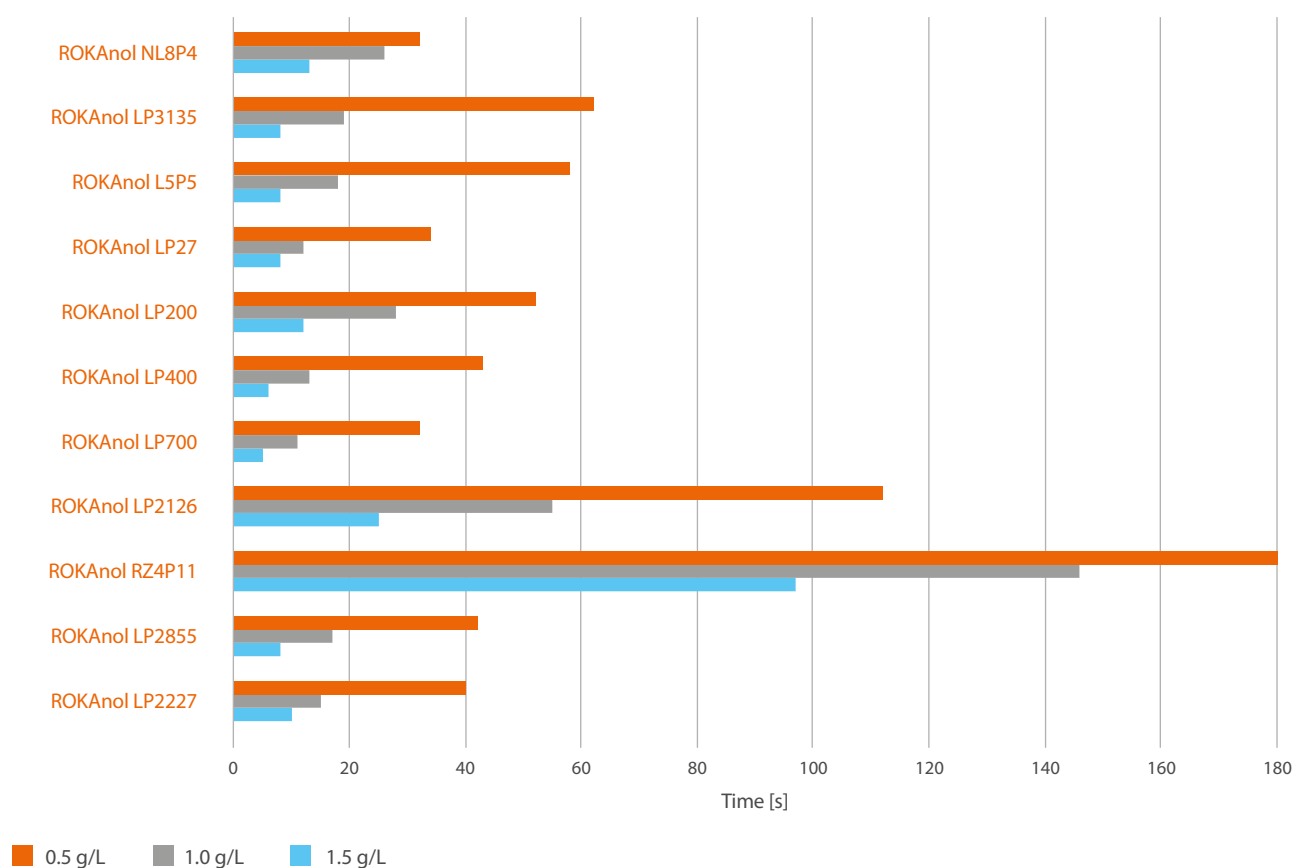
## Foam capability

| ROKAnols       | Demineralized water | Hard water |
|----------------|---------------------|------------|
| ROKAnol NL8P4  | poor                | non        |
| ROKAnol LP3135 | non                 | non        |
| ROKAnol L5P5   | poor                | poor       |
| ROKAnol LP27   | poor                | poor       |
| ROKAnol LP200  | non                 | non        |
| ROKAnol LP400  | poor                | poor       |
| ROKAnol LP700  | moderate            | moderate   |
| ROKAnol LP2126 | non                 | non        |
| ROKAnol RZ4P11 | non                 | non        |
| ROKAnol LP2855 | poor                | poor       |
| ROKAnol LP2227 | non                 | non        |

## Wetting capability

The capability of wetting cotton fabric was determined in accordance to with PN-EN 1772:2001.

The wetting capability results are shown on the graphs below.



## Alkali resistance

| NaOH con.<br>[g/L] | 10 | 20 | 30 | 40 |
|--------------------|----|----|----|----|
| Product name       |    |    |    |    |
| ROKAnol NL8P4      | ●  | ●  | ●  | ○  |
| ROKAnol LP3135     | ●  | ●  | ○  |    |
| ROKAnol L5P5       | ○  |    |    |    |
| ROKAnol LP27       | ○  |    |    |    |
| ROKAnol LP200      | ○  |    |    |    |
| ROKAnol LP400      | ○  |    |    |    |
| ROKAnol LP700      | ○  |    |    |    |
| ROKAnol LP2126     | ○  |    |    |    |
| ROKAnol RZ4P11     | ○  |    |    |    |
| ROKAnol LP2855     | ●  | ○  |    |    |
| ROKAnol LP2227     | ●  | ●  |    |    |

○ macroscopic phase separation    ● clear, homogeneous solution

## Acid resistance

| H <sub>2</sub> SO <sub>4</sub> con.<br>[mL/L] | 1 | 10 | 20 | 30 | 100 | 120 | 140 | 225 |
|-----------------------------------------------|---|----|----|----|-----|-----|-----|-----|
| Product name                                  |   |    |    |    |     |     |     |     |
| ROKAnol NL8P4                                 | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol LP3135                                | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol L5P5                                  | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol LP27                                  | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol LP200                                 | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| ROKAnol LP400                                 | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol LP700                                 | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| ROKAnol LP2126                                | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol RZ4P11                                | ○ | ○  | ○  | ○  | ○   | ○   | ○   | ○   |
| ROKAnol LP2855                                | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |
| ROKAnol LP2227                                | ● | ●  | ●  | ●  | ●   | ●   | ●   | ●   |

○ macroscopic phase separation    ● clear, homogeneous solution

## Solubility

| Product name   | Demineralized water | Methanol | Acetone | Ethyl ether |
|----------------|---------------------|----------|---------|-------------|
| ROKAnol NL8P4  | ●                   | ●        | ●       | ●           |
| ROKAnol LP3135 | ●                   | ●        | ●       | ●           |
| ROKAnol L5P5   | ●                   | ●        | ●       | ●           |
| ROKAnol LP27   | ●                   | ●        | ●       | ●           |
| ROKAnol LP200  | ●                   | ●        | ●       | ●           |
| ROKAnol LP400  | ●                   | ●        | ●       | ●           |
| ROKAnol LP700  | ●                   | ●        | ●       | ●           |
| ROKAnol LP2126 | ●                   | ●        | ●       | ●           |
| ROKAnol RZ4P11 | ●                   | ●        | ●       | ●           |
| ROKAnol LP2855 | ●                   | ●        | ●       | ●           |
| ROKAnol LP2227 | ●                   | ●        | ●       | ●           |

● soluble    ● insoluble    ● partially soluble



## Capillarity of textile materials

Nonionic surfactants are widely used in textile industry for various purposes. Their function deals mainly with proper wetting process of fiber and fabric which influences the improvement in dye sorption and adhesive properties of fiber. Additionally, surfactants are responsible for emulsification and dispersing processes. They improve the resistance to abrasion, removing natural impurities and those generated during processing fiber. At the same time they

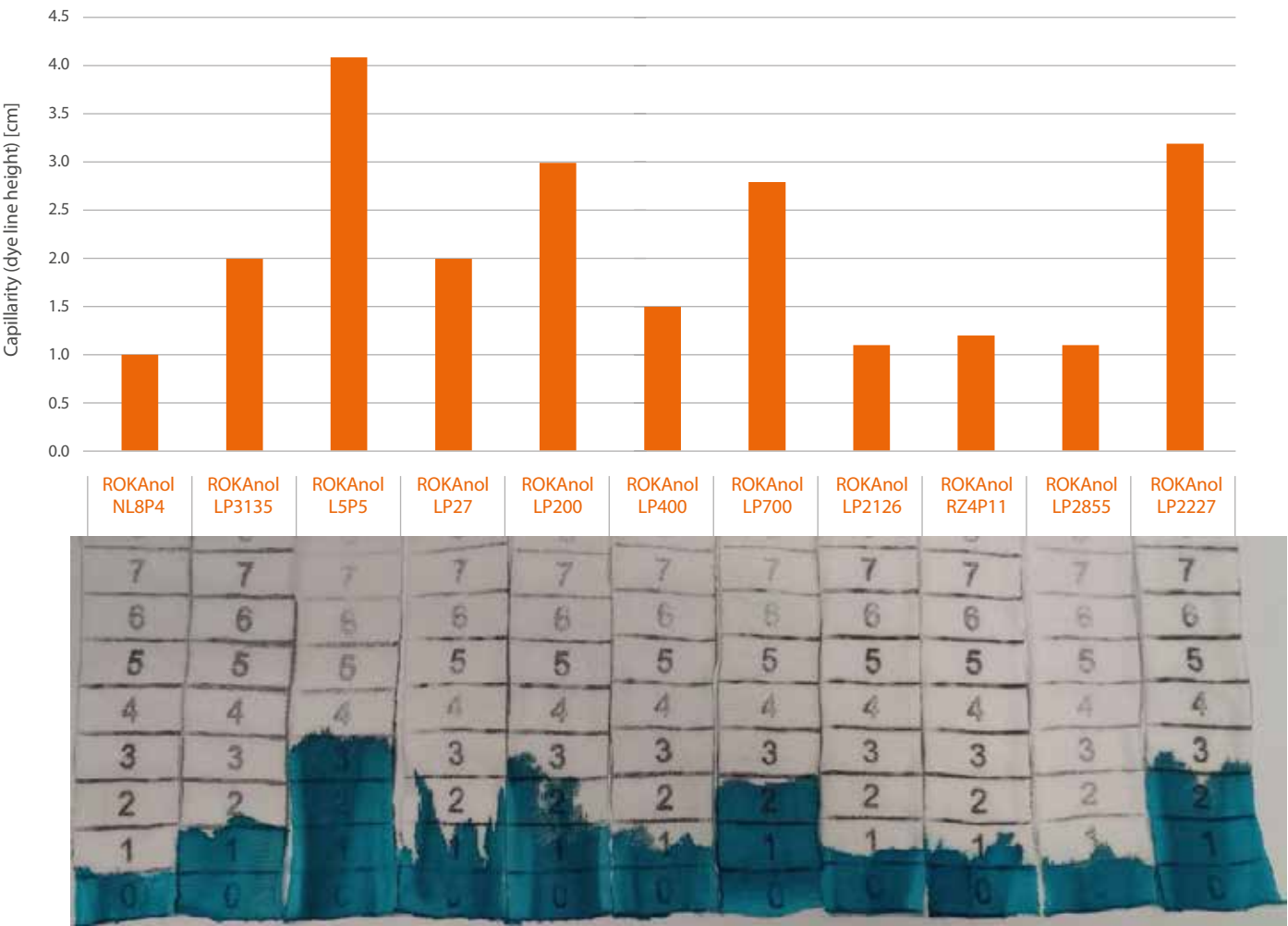
improve the wash fastness of the dye in fiber. One of the methods to estimate surfactants effectiveness is performing the capillarity test. First, tested material (100% combed cotton, weave left-right single bearing, area weight of 150 g/m<sup>2</sup>) is pretreated with bleaching solution (composition showed in table below). The process is performed at 95°C for 45. Next, the specimen is rinsed in cold water and neutralized with acetic acid solution.

| Ingredient                       | Content, % |
|----------------------------------|------------|
| Wetting agent (ROKAnols)         | 0.2        |
| Sodium hydroxide (solid)         | 0.3        |
| Hydrogen peroxide (30% solution) | 0.5        |
| Demineralized water              | 99.0       |

To evaluate capillarity, dried raw cotton knitted after the bleaching process, with the scale printed on, is positioned vertically and placed in dye solution (aqueous solution of 2% helactine turquoise).

The height of its ascent is measured after one minute. Test is performed for three independently prepared specimens. The results are shown in the graphs below.

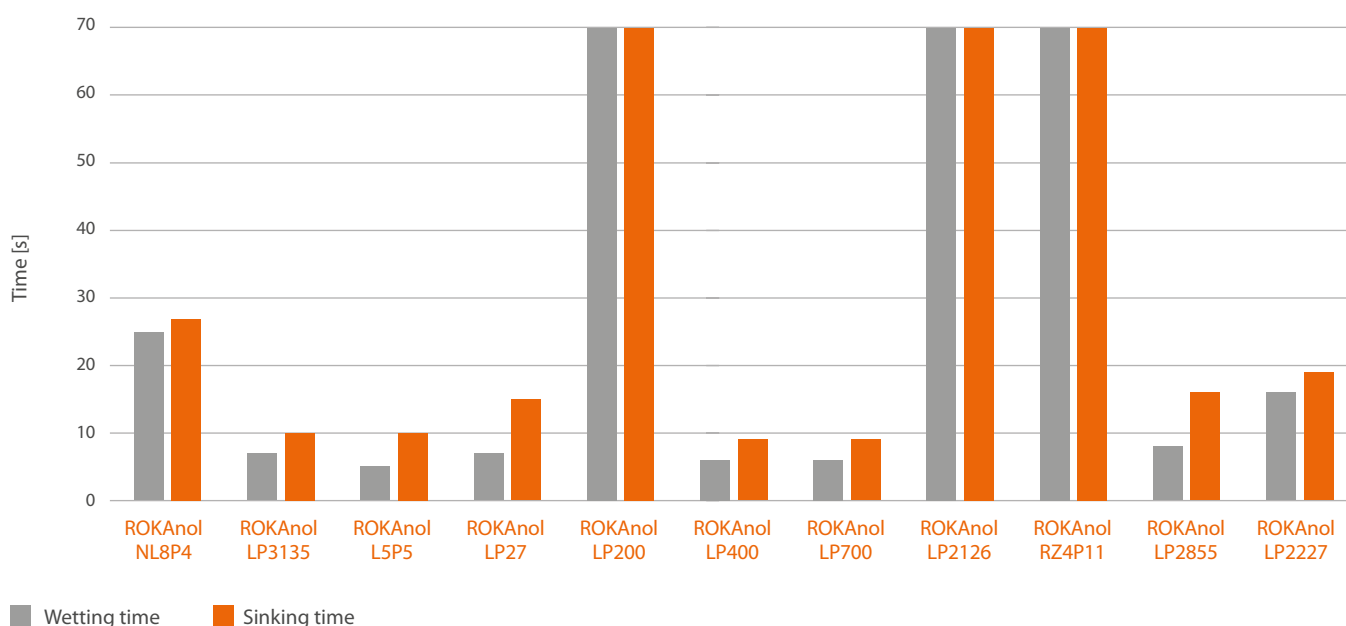
### Capillarity test (5EO)



## Wetting and sinking test

In the textile industry, an important parameter is the assessment of the wetting capacity of a cotton disc (raw knitted cotton) and the determination of the time of sinking of this disc in an aqueous solution of surface-active raw materials. The test was performed at 50°C, pH 11,

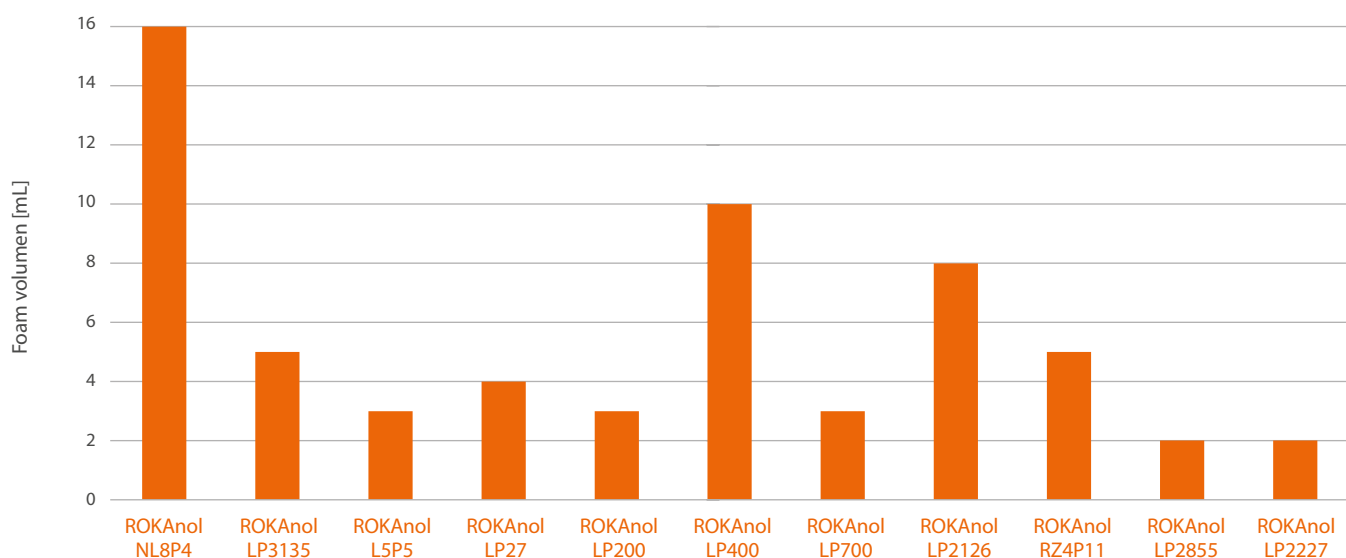
using a surfactant concentration of 1 g/L, solution volume – 500 mL. The prepared discs are thrown onto the surface of the tested solution, where first the wetting time of the fabric and then the time in which the tested disc sinks is measured. The results are shown below.



## Foam test

The levels of foam generated by the surfactant in an aqueous solution after shaking it in a cylinder 10 times were tested. The test was carried out at 50°C, pH 11, using a surfactant

concentration of 1 g/L, solution volume – 50 mL. The measurement time was 1 minute. The results are shown below.



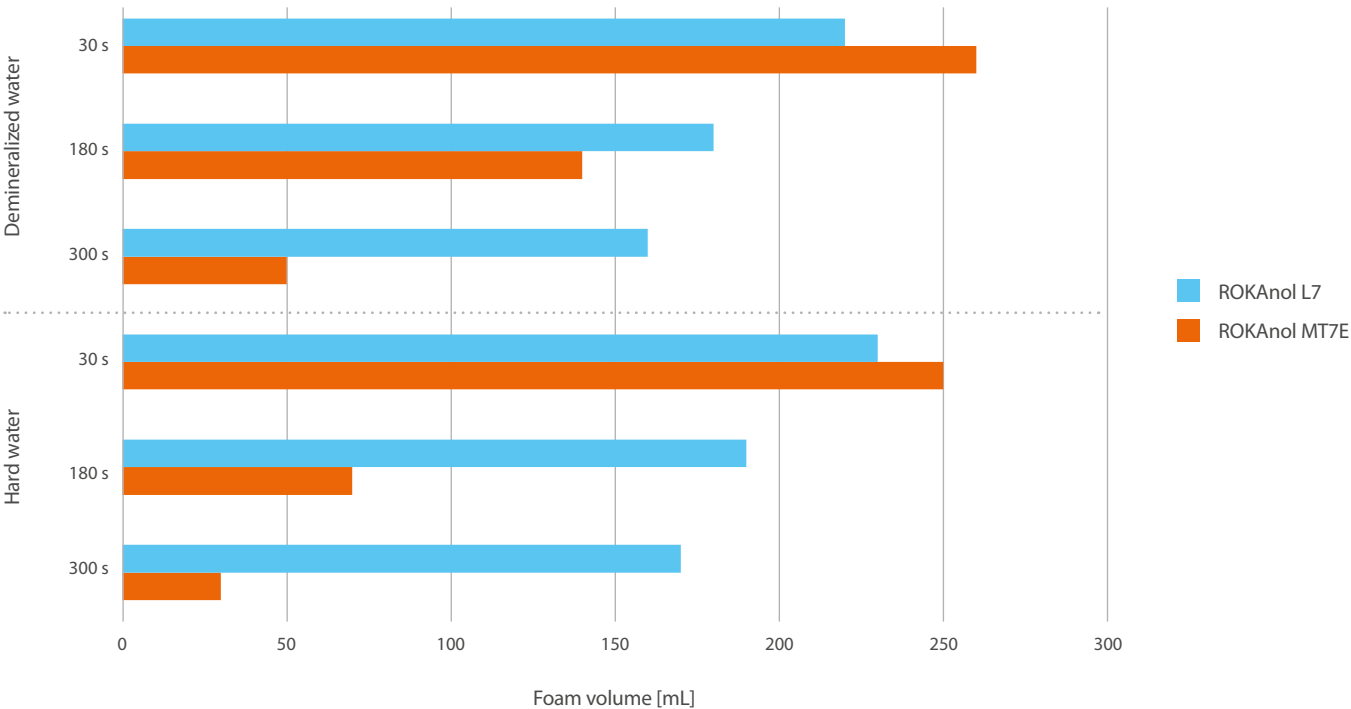
## ROKAnol L7 vs ROKAnol MT7E

| Physicochemical parameters                  | ROKAnol L7                      | ROKAnol MT7E                    |
|---------------------------------------------|---------------------------------|---------------------------------|
| CAS                                         | 68439-50-9                      | 68439-39-4                      |
| Chemical name                               | Laureth-7                       | Alcohols, C8-18, ethoxylated    |
| Appearance at temperature (20 ÷ 25)°C       | clear or slightly turbid liquid | clear or slightly turbid liquid |
| Colour (Hazen units) at 50°C                | max.70                          | max.150                         |
| pH of 1 % solution                          | 4.6 ÷ 7.4                       | (5%) 5 ÷ 8                      |
| Cloud point (aqueous solution), method A °C | 57 ÷ 63                         | 56 ÷ 62                         |
| Cloud point (aqueous solution), method B °C | 41 ÷ 48                         | 39 ÷ 45                         |
| Cloud point (aqueous solution), method C °C | 30 ÷ 40                         | 29 ÷ 35                         |
| Cloud point (aqueous solution), method D °C | 78 ÷ 84                         | 71 ÷ 78                         |
| Cloud point (aqueous solution), method E °C | 76 ÷ 83                         | 71 ÷ 77                         |
| Water, % (m/m)                              | max. 1.0                        | max. 1.0                        |
| Density at 20°C, g/mL                       | approx. 0.99                    | approx. 1.00                    |
| Viscosity at 25°C, cP                       | approx. 200                     | approx. 200                     |
| Freezing point, °C                          | approx. 12                      | approx. 12                      |

### Foam capability

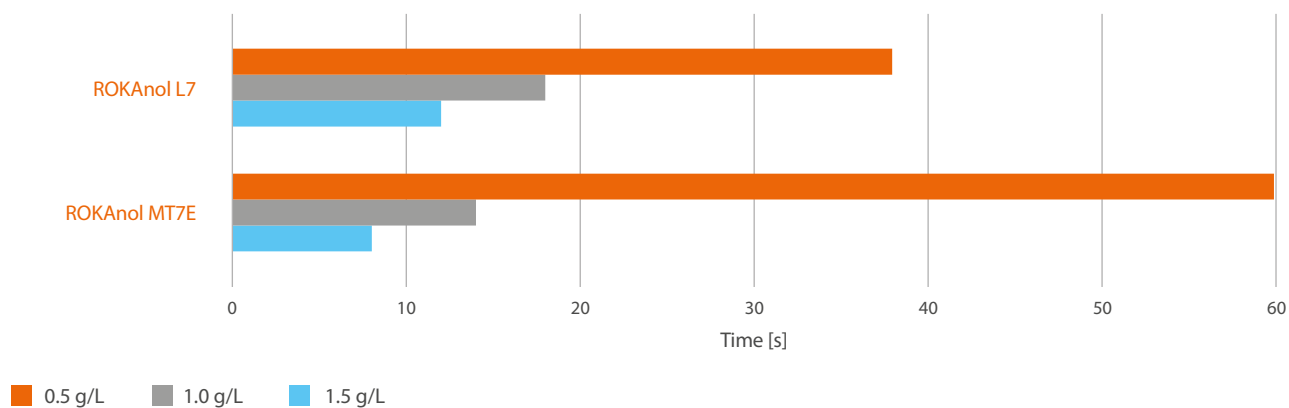
**Foam capability** was measured according to modified Ross-Miles, method (PN-ISO 696:1994) -the modified Ross-Miles method; at a temperature of 25°( , for a surfactant concentration of 1.0 g/L,

in both demineralized and hard (17°d) water. The foam value was measured after 30, 180 and 300 seconds. The results are presented on the graph.



## Wetting capability

Wetting capability was measured at 20°C for three concentrations. The results are presented on the graph. The capability of wetting cotton fabric was determined in accordance with PN-EN 1772:2001.



## Alkali and acid resistance

### Alkaline resistance

| NaOH con. [g/L] | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
|-----------------|----|----|----|----|----|----|----|
| Product name    |    |    |    |    |    |    |    |
| ROKAnol L7      | ●  | ●  | ●  | ●  | ●  | ●  | ○  |
| ROKAnol MT7E    | ●  | ●  | ●  | ○  | ○  | ○  | ○  |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

### Acid resistance

| H <sub>2</sub> SO <sub>4</sub> con. [mL/L] | 1 | 10 | 40 | 60 | 100 | 140 | 225 |
|--------------------------------------------|---|----|----|----|-----|-----|-----|
| Product name                               |   |    |    |    |     |     |     |
| ROKAnol L7                                 | ● | ●  | ●  | ●  | ●   | ●   | ○   |
| ROKAnol MT7E                               | ● | ●  | ●  | ○  | ○   | ○   | ○   |

○ macroscopic phase separation   ● homogeneous, cloudy solution   ● clear, homogeneous solution   ● homogeneous, opalescent solution

## Solubility

| Product name | Demineralized water | Methanol | Acetone | Ethyl ether |
|--------------|---------------------|----------|---------|-------------|
| ROKAnol L7   | ●                   | ●        | ●       | ●           |
| ROKAnol MT7E | ●                   | ●        | ●       | ●           |

● soluble   ● insoluble   ● partially soluble

## ROKAmer 2000 and ROKAmer 2600

ROKAmer 2000 and ROKAmer 2600 are non-ionic surfactants of the ethylene oxide/propylene oxide block copolymer type. Thanks to

their anti-foaming properties, the products can be used in many industrial processes.

### Additional information

| Product                   | ROKAmer 2000                    | ROKAmer2600            |
|---------------------------|---------------------------------|------------------------|
| Appearance                | clear or slightly turbid liquid | clear or turbid liquid |
| Concentration, %          | approx. 100                     | aprox. 100             |
| Hazen colour              | max. 50 (40°C)                  | max. 50 (40°C)         |
| Cloud point Method A      | 23–27                           | 16–20                  |
| Cloud point Method B      | approx. 13                      | approx. 9              |
| Cloud point Method C      | insoluble                       | approx. 9              |
| Cloud point Method D      | approx. 40                      | approx. 41             |
| Cloud point Method E      | approx. 34                      | 33–37                  |
| Average molar mass, g/mol | approx. 1800                    | approx. 2600           |

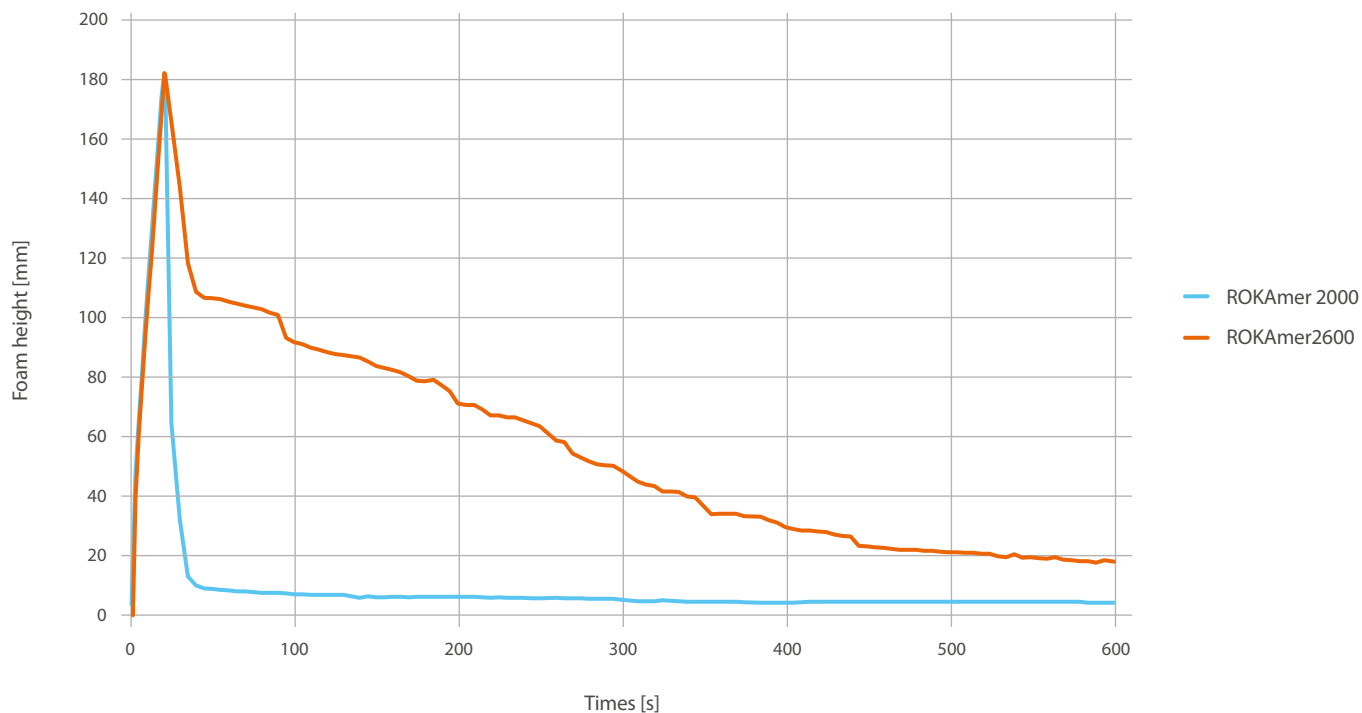


## Defoaming Properties

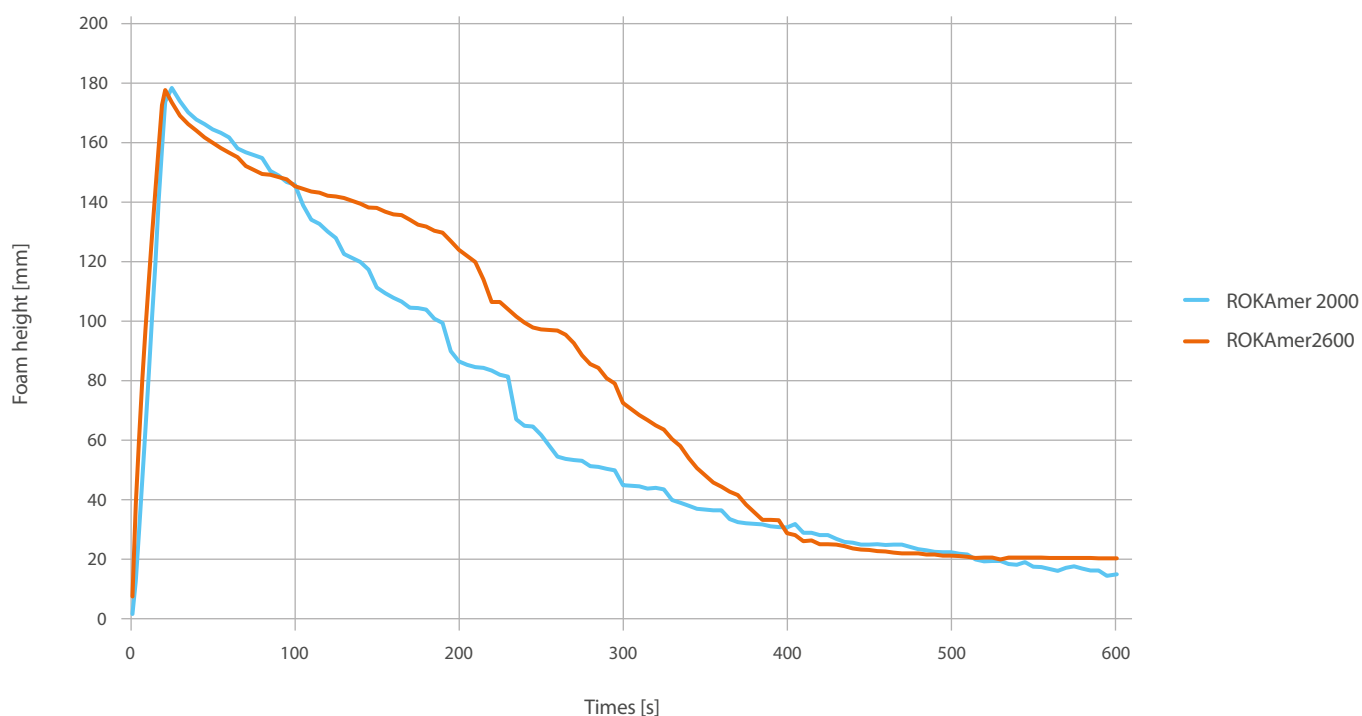
Anti-foaming properties were tested using the internal test method by Dynamic Foam Analyzer (DFA) that allows to determine the ability to extinguish the foam produced by the standard solution.

The method is based on measuring the foam volume generated by the foaming agent solution, which degrades over time, by injection of a solution to the surface of the test compound antifoam.

### Defoaming properties in demineralized water



### Defoaming properties in hard water



## ROKAcet LPK

ROKAcet LPK is a non-ionic surfactant. It is an ethoxylated and propoxylated coconut acid.

### Applications



### Benefits

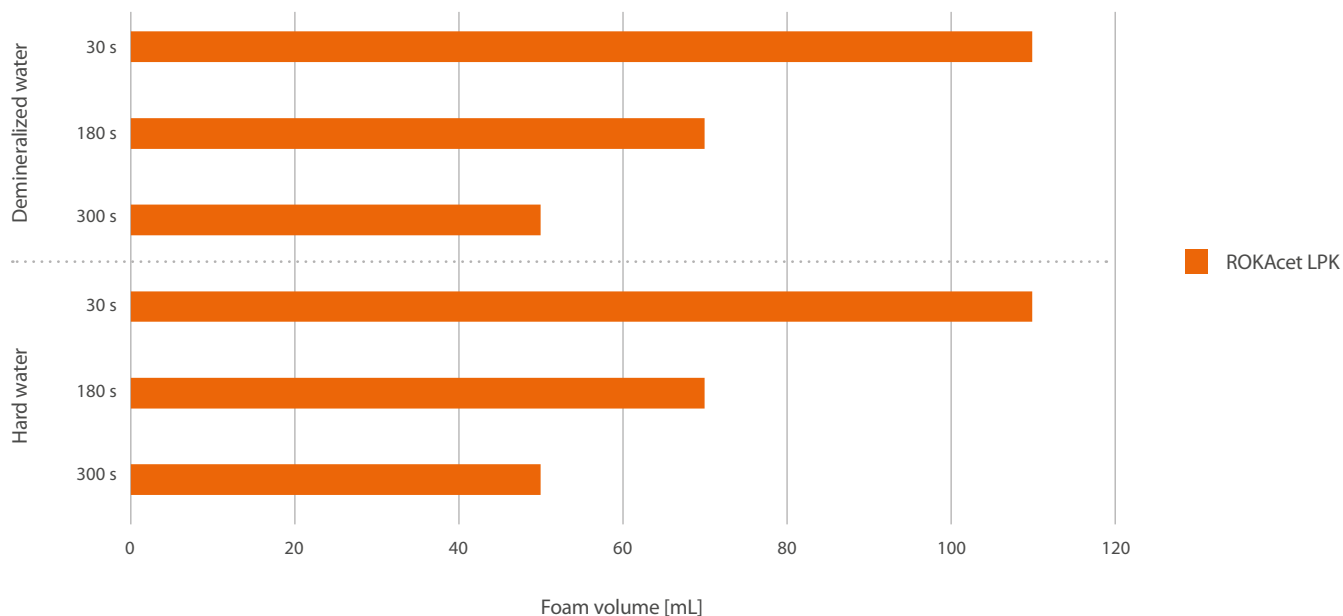
- good wetting properties
- effective ingredient of laundry agents
- good cleaner properties
- excellent solubilizing properties
- good temperature resistance
- compatible with synthetic base stocks, especially with PAGs
- compatible with other additives

|                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| Physicochemical parameters                              | ROKAcet LPK                                            |
| CAS                                                     | 96873–84–6                                             |
| Appearance at temperature (20÷25) °C                    | clear yellow liquid                                    |
| Chemical name                                           | C8–C18 acids, ethoxylated, propoxylated, coconut acids |
| Color (Gardner) at (20 ÷ 25) °C                         | max. 2                                                 |
| pH of the solution in water [10%]                       | 6,0 ÷ 7,5                                              |
| Saponification number, mg KOH/g                         | 60 ÷ 70                                                |
| Cloud point (butyldiglycol/water solution), method E °C | 60 ÷ 64                                                |
| Water, % (m/m)                                          | max. 0.5                                               |
| Density at 20°C, g/mL                                   | approx. 1.03                                           |
| Viscosity at 20°C, cP                                   | approx. 160                                            |
| Surface tension of 0.1% solution at 25°C, mN/m          | 35                                                     |
| Solidification point °C                                 | approx. +3                                             |

## Foam capability

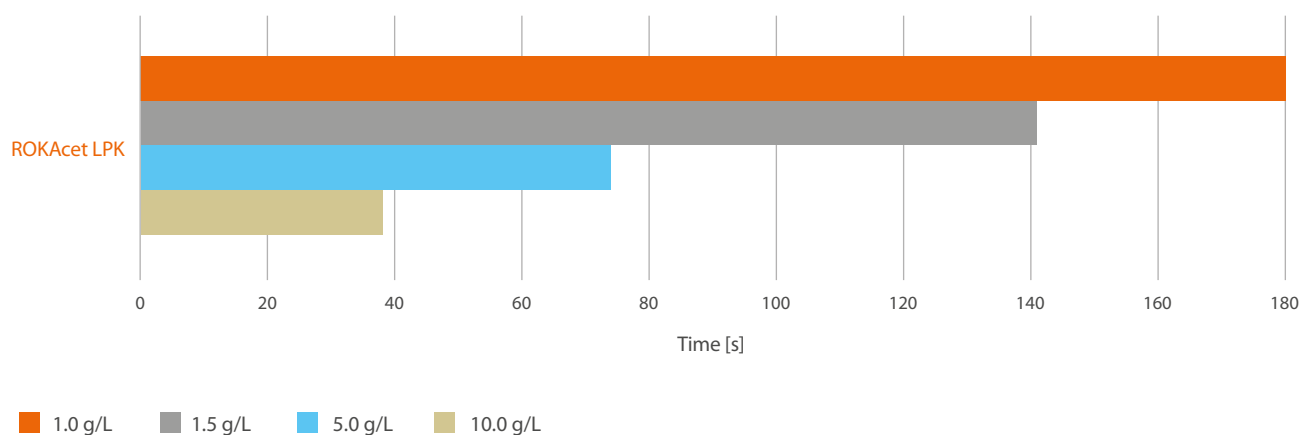
The determination of the foam capability was performed according to PN-ISO 696:1994 (the modified Ross-Miles method) at a temperature of 25°C, for a surfactant concentration of 1.0 g/L,

in both demineralized and hard (17°d) water. The foam stability results of ROKAcet LPK are shown on the graph below.



## Wetting capability

The capability of wetting cotton fabric was determined in accordance to with PN-EN 1772:2001. The wetting capability results of ROKAcet LPK are shown on the graph below.



## Alkali and acid resistance

The analysis of this stability for ROKAcet LPK Series has been performed in accordance with PN-EN 14712:2005.

### Alkaline resistance

| NaOH con.<br>[g/L] | 10 | 20 | 30 |
|--------------------|----|----|----|
| Product name       |    |    |    |
| ROKAcet LPK        | ●  | ●  | ○  |

○ macroscopic phase separation    ● clear, homogeneous solution

### Acid resistance

| H <sub>2</sub> SO <sub>4</sub> con.<br>[mL/L] | 1 | 120 | 125 | 135 | 140 | 225 |
|-----------------------------------------------|---|-----|-----|-----|-----|-----|
| Product name                                  |   |     |     |     |     |     |
| ROKAcet LPK                                   | ● | ●   | ●   | ●   | ●   | ●   |

○ macroscopic phase separation    ● homogeneous, cloudy solution    ● clear, homogeneous solution    ● homogeneous, opalescent solution

### Solubility

| Product name | Demineralized water | Methanol | Acetone | Ethyl ether |
|--------------|---------------------|----------|---------|-------------|
| ROKAcet LPK  | ●                   | ●        | ●       | ●           |

● soluble    ● insoluble    ● partially soluble



## Lubricating properties

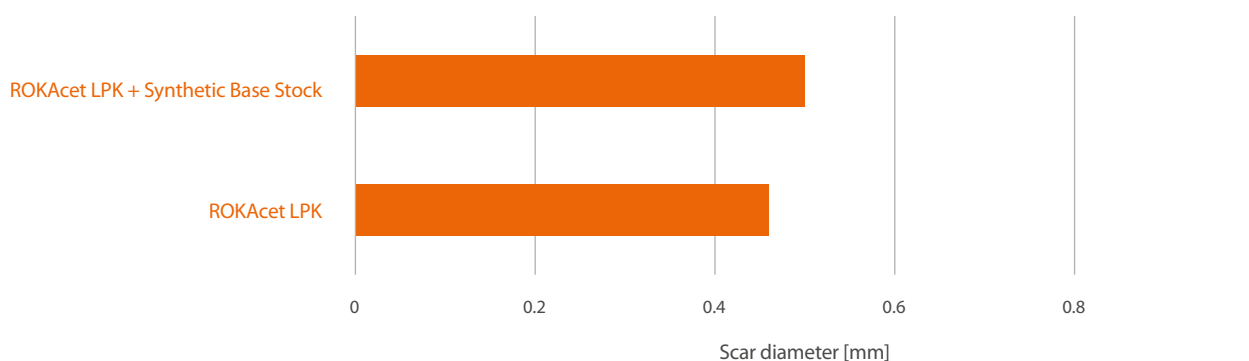
ROKAcet LPK can be used in textile industry because it has very good tribological properties: anti-wear and extreme pressure. ROKAcet LPK can be used as a base and as an additive in lubricating formulations. It is compatible with water-soluble, synthetic bases of the PAG products. ROKAcet LPK is classified according to ISO 46-68 viscosity grade. The viscosity index (VI) for ROKAcet LPK is above 180,

which proves the excellent stability of the kinematic viscosity with temperature changes. Its characteristic, low viscosity enables efficient use and non-sticking materials in devices used in the textile industry. The lubricating results of ROKAcet LPK are shown on the graphs and in the tables below.

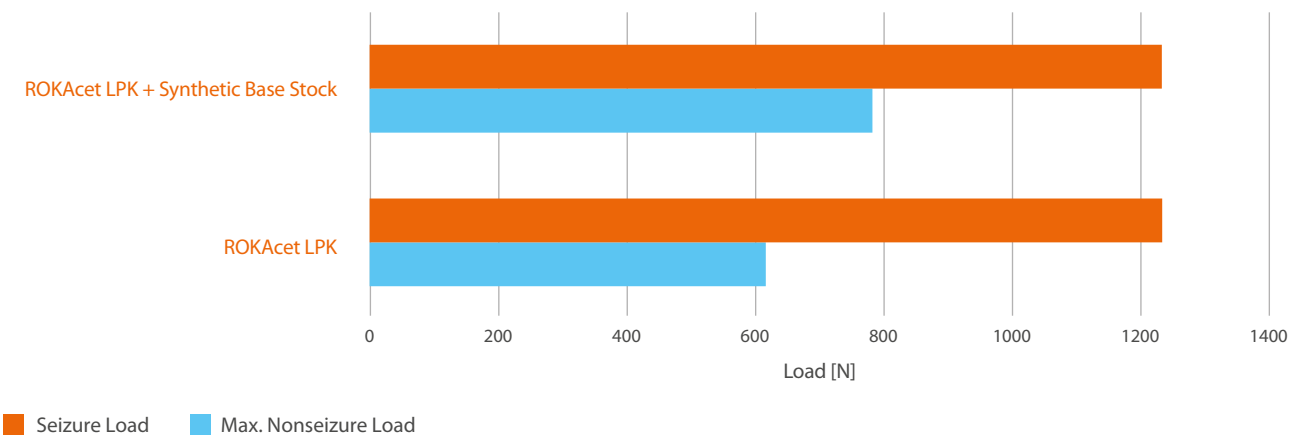
| Product name                       | Kinematic Viscosity at 40°C, cST | Kinematic Viscosity at 100°C, cST | Viscosity index | Viscosity grade according to ISO |
|------------------------------------|----------------------------------|-----------------------------------|-----------------|----------------------------------|
| ROKAcet LPK                        | 53.78                            | 10.38                             | 186             | 46 ÷ 68                          |
| ROKAcet LPK + Synthetic Base Stock | 95.00                            | 18.11                             | 211             | 100                              |

| Product name                       | Extreme -pressure properties (EP)<br>according of ASTM D2783 |                   |                 | Anti-wear properties (AW)<br>according of ASTM D4172 |                   |
|------------------------------------|--------------------------------------------------------------|-------------------|-----------------|------------------------------------------------------|-------------------|
|                                    | Max. Nonseizure Load, N                                      | Scar diameter, mm | Seizure Load, N | Used Load (method B)                                 | Scar diameter, mm |
| ROKAcet LPK                        | 618                                                          | 0.30              | 1236            | 392                                                  | 0.46              |
| ROKAcet LPK + Synthetic Base Stock | 784                                                          | 0.34              | 1236            | 392                                                  | 0.50              |

## Anti-wear properties



Extreme pressure properties



Lubricant removal test

Lubricant removal tests were performed according to PCC EXOL SA own method, using raw cotton fabric (100% combed cotton, weave left-right single bearing, area weight of 150 g/m²). A lubricant (ROKAcet LPK), colored with Sudan Red 7B, is applied to the knitted fabric. The next step of the stain removal test is carried out at temperature 95°C for 60 minutes. After rinsing

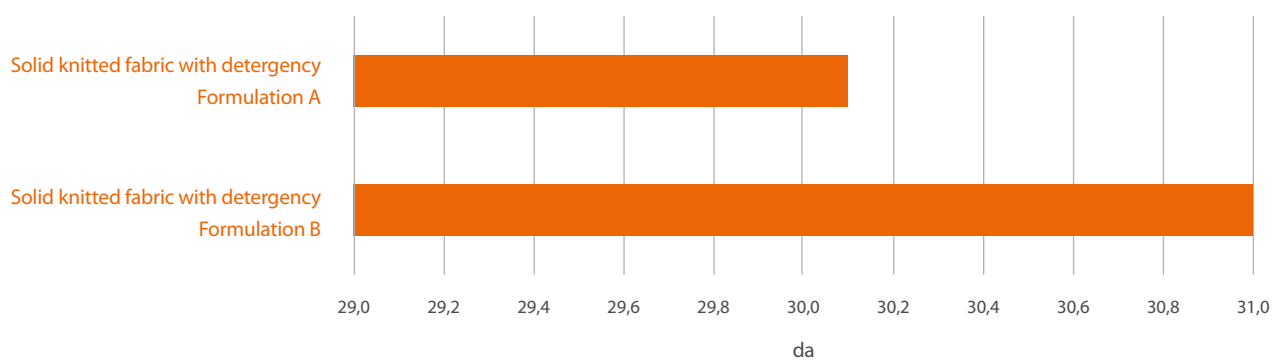
the fabric with water, neutralization process and dry of cotton, the effectiveness of the stain removal from the knitted fabric was assessed. The da parameter from the CIE LAB scale was used, as the difference in the intensity of pink staining of the stain before washing and after washing. The composition of the washing baths is presented below.

|                         | Compositions [g/L] |               |
|-------------------------|--------------------|---------------|
|                         | Formulation A      | Formulation B |
| NaOH (110 g/l solution) | 11.3               | 11.3          |
| ROKAcet LPK             | -                  | 2             |
| Water                   | up to 1000         | up to 1000    |





### Lubricant removal test – results in da units



The lubricant removal tests are described by the da parameter in accordance with the CIE LAB method. The standard is the soiled fabric, so the higher the value of the da parameter, the better the tested fabric is cleaned.

## ROKwin 80, ROKwinols Series and other emulsifiers

In the textile industry, many auxiliaries are in the form of emulsions. Emulsions are dispersed systems consisting of two or more insoluble or sparingly soluble liquids. The liquid present in excess is termed the continuous phase, while the liquid dispersed in it is termed the dispersed phase. In the process of obtaining an emulsion, it is necessary

to use an emulsifier, i.e. a surface-active compound and sometimes used several surfactants. Typically, emulsions found in the textile industry are oil-in-water (o/w) and water-in-oil (w/o). There are many emulsifiers in the PCC EXOL SA portfolio, the description of which is presented below.

- **ROKwin 80** – Sorbitan Monooleate
- **ROKwinol 20** – Sorbitan Monolaureate + 20 EO
- **ROKwinol 60** – Sorbitan Monostearate + 20 EO
- **ROKwinol 80** – Sorbitan Monooleate + 20 EO

- **ROKAcet R26** – Castor Oil+ 26 EO
- **ROKAcet R40** – Castor Oil + 40 EO
- **ROKAcet R70** – Castor Oil + 70 EO
- **ROKAcet RZ17** – Fatty Acid Glycerol Ester, C14-18 + 17 EO

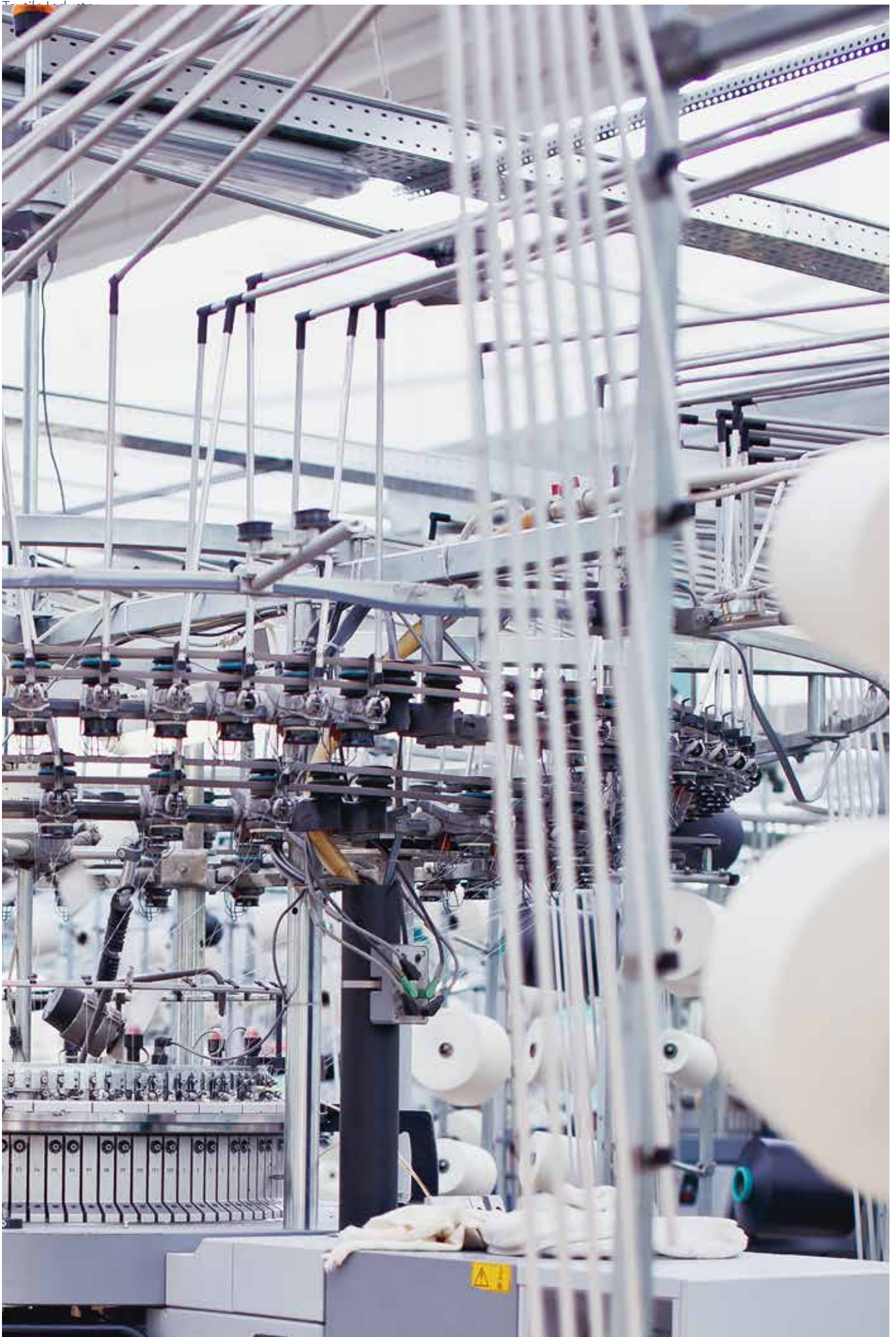
### ROKwin 80 and ROKwinols Series

| Products                              | ROKwin 80                                       | ROKwinol 20    | ROKwinol 60                                              | ROKwinol 80                                              |
|---------------------------------------|-------------------------------------------------|----------------|----------------------------------------------------------|----------------------------------------------------------|
| Chemical name                         | Sorbitan Oleate                                 | Polysorbate 20 | Polysorbate 60                                           | Polysorbate 80                                           |
| Molecular weight                      | approx. 429                                     |                | approx. 1300                                             | approx. 1300                                             |
| HLB                                   | 4.7                                             | 16.7           | 14.9                                                     | 15.0                                                     |
| EO (ethoxylated product)              | –                                               | +              | +                                                        | +                                                        |
| Appearance at temperature (20 ÷ 25)°C | oily liquid, with a yellow to dark brown colour | clear liquid   | liquid or paste with a pale yellow to light brown colour | liquid or semi liquid with a dark-yellow to brown colour |
| Saponification number, mg KOH/g       | 145 ÷ 170                                       | 40 ÷ 50        | 45 ÷ 55                                                  | 45 ÷ 55                                                  |
| Acid number, mg KOH/g                 | max.10                                          | max.2          | max.2                                                    | max.2                                                    |
| Water, % (m/m)                        | max.1.5                                         | max.3          | max.3                                                    | max.3                                                    |

### ROKAcets Series

| Products                                 | ROKAcet R26               | ROKAcet R40                                          | ROKAcet R70                                          | ROKAcet RZ17                                    |
|------------------------------------------|---------------------------|------------------------------------------------------|------------------------------------------------------|-------------------------------------------------|
| Chemical name                            | PEG-26 Castor Oil         | PEG-40 Castor Oil                                    | R70 PEG-70 Castor Oil                                | PEG-17 Rape Oil                                 |
| Molecular weight                         | approx. 2030              | approx. 2650                                         | approx. 4000                                         | approx. 1037                                    |
| HLB                                      | 11.0                      | 13.0                                                 | 15.4                                                 | –                                               |
| EO (ethoxylated product)                 | +                         | +                                                    | +                                                    | +                                               |
| Appearance at temperature (20 ÷ 25)° C   | pale yellow liquid        | paste or semi-liquid paste subject to stratification | paste or semi-liquid paste subject to stratification | oily liquid with a yellow to light brown colour |
| Colour in iodine scale, mgI <sub>2</sub> | max.10                    | max.10 at 50°C                                       | max.10 at 50°C                                       | –                                               |
| Saponification number, mg KOH/g          | 74 -- 82                  | 55 -- 64                                             | 40 -- 45                                             | 90 -- 110                                       |
| pH in solution                           | 7.5 -- 9.5 (10% solution) | 6.5 -- 8.0 (1% solution)                             | 6.5 -- 8.0 (1% solution)                             | min. 9.0 (12% solution)                         |
| Water, % (m/m)                           | max.0.5                   | max.1.0                                              | max.1.0                                              |                                                 |





# 03 / Classification of product groups in terms of their function in textile processes

## Spinning

| Product        | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description             | CAS         | HLB  |
|----------------|---------|------------|-----------------------------|-------------|------------|-------------|-------------|----------|-----------|-------------------|-----------------|-------------------------|-------------|------|
| ROKAnol DB3    |         |            |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C12-15 + 3 EO | 68131-39-5  | 7.8  |
| ROKAnol DB5    |         |            |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C12-15 + 5 EO | 68131-39-5  | 10.5 |
| ROKAnol DB6    |         |            |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C12-15 + 5 EO | 68131-39-5  | 11.4 |
| ROKAnol DB6M   |         |            |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C12-15 + 5 EO | 68131-39-5  | 11.4 |
| ROKAnol DB7    | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-15 + 7 EO | 68131-39-5  | 12.0 |
| ROKAnol DB7R   | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-15 + 7 EO | 68131-39-5  | 12.0 |
| ROKAnol DB7W   | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-15 + 7 EO | 68131-39-5  | 12.0 |
| ROKAnol DB9    | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-15 + 9 EO | 68131-39-5  | 13.2 |
| ROKAnol EH3    |         |            |                             | •           |            | •           |             | •        |           |                   | N               | Isooctanol + 3 EO       | 26468-86-0  | –    |
| ROKAnol GA7    | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C10 + 7 EO    | 160875-66-1 | 13.0 |
| ROKAnol GA7LA  | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA7LAW | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA7W   | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C10 + 7 EO    | 160875-66-1 | 13.0 |
| ROKAnol GA8    | •       | •          |                             | •           | •          | •           |             |          |           |                   | N               | Alcohols, C10 + 8 EO    | 160875-66-1 | 14.0 |
| ROKAnol GA8LA  | •       | •          |                             | •           | •          | •           |             |          |           |                   | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA8W   | •       | •          |                             | •           | •          | •           |             |          |           |                   | N               | Alcohols, C10 + 8 EO    | 160875-66-1 | 14.0 |
| ROKAnol GT3    |         |            |                             | •           |            | •           |             |          |           |                   | N               | Alcohols, C9-16 + 3 EO  | 97043-91-9  | 8.5  |
| ROKAnol GT5    |         | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C9-16 + 5 EO  | 97043-91-9  | 10.7 |
| ROKAnol GT6    | •       | •          |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C9-16 + 6 EO  | 97043-91-9  | 12.0 |
| ROKAnol GT7    | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C9-16 + 7 EO  | 97043-91-9  | 12.8 |
| ROKAnol GT8    | •       | •          |                             | •           | •          | •           |             |          |           |                   | N               | Alcohols, C9-16 + 8 EO  | 97043-91-9  | 13.3 |
| ROKAnol GT9    | •       | •          |                             |             | •          |             | •           | •        |           |                   | N               | Alcohols, C9-16 + 9 EO  | 97043-91-9  | –    |
| ROKAnol GT9W   | •       | •          |                             |             | •          |             | •           | •        |           |                   | N               | Alcohols, C9-16 + 9 EO  | 97043-91-9  | –    |

## Spinning

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                    | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-------------|----------|-----------|-------------------|-----------------|--------------------------------|-------------|------|
| ROKAnol IT3     |         |            |                             | •           |            | •           |             |          |           |                   | N               | Alcohols, C13, branched + 3 EO | 69011-36-5  | 8.0  |
| ROKAnol IT5     |         | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C13, branched + 5 EO | 69011-36-5  | 10.5 |
| ROKAnol IT6     | •       | •          |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.4 |
| ROKAnol IT6R    | •       | •          |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.5 |
| ROKAnol IT7     | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT7W    | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT8     | •       | •          |                             | •           | •          | •           |             |          |           |                   |                 | Alcohols, C13, branched + 8 EO | 69011-36-5  | 12.8 |
| ROKAnol IT9     |         | •          |                             |             | •          |             | •           | •        |           |                   | N               | Alcohols, C13, branched + 9 EO | 69011-36-5  | 13.3 |
| ROKAnol IT9W    |         | •          |                             |             | •          |             | •           | •        |           |                   | N               | Alcohols, C13, branched + 9 EO | 69011-36-5  | 13.3 |
| ROKAnol L4      | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-14 + 4 EO        | 68439-50-9  | 10.0 |
| ROKAnol L4P5    | •       |            | •                           | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-14 + EO/PO       | 68439-51-0  | 5.3  |
| ROKAnol L5A     |         | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-16 + 5 EO        | 68551-12-2  | 10.5 |
| ROKAnol L5P5    | •       | •          | •                           | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-14 + EO/PO       | 68439-51-0  | 6.0  |
| ROKAnol L7      | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-14 + 7 EO        | 68439-50-9  | 12.9 |
| ROKAnol L7A     | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-16 + 7 EO        | 68551-12-2  | 12.9 |
| ROKAnol L7W     | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C12-14 + 7 EO        | 68439-50-9  | 12.9 |
| ROKAnol L9A     |         | •          |                             |             | •          |             | •           | •        |           |                   | N               | Alcohols, C12-16 + 9 EO        | –           | –    |
| ROKAnol L9AW    |         | •          |                             |             | •          |             | •           | •        |           |                   | N               | Alcohols, C12-16 + 9 EO        | –           | 13.3 |
| ROKAnol L10     | •       | •          |                             | •           | •          |             |             | •        |           |                   | N               | Alcohols, C12-14 + 10 EO       | 68439-50-9  | 14.1 |
| ROKAnol L10A    | •       | •          |                             | •           | •          |             |             | •        |           |                   | N               | Alcohols, C12-16 + 10 EO       | 68551-12-2  | 14.1 |
| ROKAnol L10/80  | •       | •          |                             | •           | •          |             |             | •        |           |                   | N               | Alcohols, C12-14 + 10 EO       | 68439-50-9  | 14.1 |
| ROKAnol L80/50W | •       | •          | •                           | •           | •          |             |             | •        |           |                   | N               | Alcohol, C12-14 + EO/PO        | 68439-51-0  | 17.6 |
| ROKAnol LK1     |         |            |                             | •           |            | •           |             |          |           |                   | N               | Alcohols, C12-14 + EO          | 68439-50-9  | 3.7  |
| ROKAnol LK2     |         | •          |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C12-14 + 2 EO        | 68439-50-9  | 6.2  |
| ROKAnol LK3     |         | •          |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C12-14 + 3 EO        | 68439-50-9  | 7.8  |
| ROKAnol UD3     | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C11-Iso + 3 EO       | 127036-24-2 | 8.7  |
| ROKAnol UD5     | •       | •          |                             | •           |            |             |             | •        |           |                   | N               | Alcohols, C11-Iso + 5 EO       | 127036-24-2 | 11.0 |
| ROKAnol UD7     | •       | •          |                             | •           |            | •           |             | •        |           |                   | N               | Alcohols, C11-Iso + 7 EO       | 127036-24-2 | 12.3 |
| ROKAfenol N7    | •       | •          |                             | •           | •          |             | •           | •        |           |                   | N               | Nonylphenol + 7 EO             | 127087-87-0 | 11.5 |
| ROKAfenol N8    | •       | •          |                             | •           | •          |             | •           | •        |           |                   | N               | Nonylphenol + 9 EO             | 127087-87-0 | 12.5 |
| ROKAfenol N8P7  | •       | •          | •                           | •           | •          |             | •           | •        |           |                   | N               | Nonylphenol + EO/PO            | 37251-69-7  | 7.7  |

## Spinning

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                   | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-------------|----------|-----------|-------------------|-----------------|-------------------------------|-------------|------|
| ROKAfenol N8P14 | •       | •          | •                           | •           | •          |             | •           | •        |           |                   | N               | Nonylphenol + EO/PO           | 37251-69-7  | 5.5  |
| ROKAfenol N9    | •       | •          |                             | •           | •          |             | •           | •        |           |                   | N               | Nonylphenol + 9 EO            | 127087-87-0 | 12.8 |
| ROKAamid MRZ17  |         |            |                             | •           | •          |             |             |          |           |                   | N               | Glyceryl Rapeate + 17 EO      | 221045-17-6 | –    |
| ROKAamid RAD    |         |            |                             | •           | •          |             |             |          |           |                   | N               | C16-18 and C18- unsatd        | 68603-38-3  | –    |
| ROKAcet K7      |         |            |                             | •           |            | •           |             |          | •         | •                 | N               | Cocoate + 7 EO                | 61791-29-5  | 11.6 |
| ROKAcet KO300G  |         |            |                             | •           |            | •           |             |          |           | •                 | N               | Glyceryl Cocoate + 7 EO       | 68201-46-7  | –    |
| ROKAcet O7      |         |            |                             | •           |            | •           |             |          |           |                   | N               | Oleate + 7 EO                 | 9004-96-0   | 10.6 |
| ROKwin 60       |         |            |                             | •           |            |             |             |          |           |                   | N               | Sorbitan Monostearate         | 1338-43-8   | 4.7  |
| ROKwin 80       |         |            |                             | •           |            |             |             |          |           |                   | N               | Sorbitan Monooleate           | 1338-43-8   | 4.7  |
| ROKwinol 20     |         |            |                             | •           |            |             |             |          |           |                   | N               | Sorbitan Monooleate + 20 EO   | 9005-64-5   | 16.7 |
| ROKwinol 60     |         |            |                             | •           |            |             |             |          |           |                   | N               | Sorbitan Monostearate + 20 EO | 9005-67-8   | 14.9 |
| ROKwinol 80     |         |            |                             | •           |            |             |             |          |           |                   | N               | Sorbitan Monooleate + 20 EO   | 9005-65-6   | 15.0 |



## Desizing

| Product             | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Dye removal | Cleaning | Softening | Ionic character | Description                               | CAS         | HLB  |
|---------------------|---------|------------|-----------------------------|-------------|------------|-------------|-------------|----------|-----------|-----------------|-------------------------------------------|-------------|------|
| ABS Acid            | •       | •          |                             | •           |            |             |             | •        |           | A               | Dodecylbenzene Sulfonic Acid              | 85536-14-7  | –    |
| ABS Acid/1          | •       | •          |                             | •           |            |             |             | •        |           | A               | Dodecylbenzene Sulfonic Acid              | 85536-14-7  | –    |
| ABSNa 30            | •       | •          |                             | •           |            |             |             | •        |           | A               | Sodium Dodecylbenzenesulfonate            | 68411-30-3  | –    |
| ABSNa 50            | •       | •          |                             | •           |            |             |             | •        |           | A               | Sodium Dodecylbenzenesulfonate            | 68411-30-3  | –    |
| SULFOROKAnol L225/1 | •       | •          |                             |             |            |             | •           | •        |           | A               | Sodium Laureth Sulfate                    | 68891-38-3  | –    |
| SULFOROKAnol L227/1 | •       | •          |                             |             |            |             | •           | •        |           | A               | Sodium Laureth Sulfate                    | 68891-38-3  | –    |
| SULFOROKAnol L270/1 | •       | •          |                             |             |            |             | •           | •        |           | A               | Sodium Laureth Sulfate                    | 68891-38-3  | –    |
| SULFOROKAnol L327   | •       | •          |                             |             |            |             | •           | •        |           | A               | Sodium C12-C15 Pareth Sulfate             | 68891-38-3  | –    |
| ROSULfan D          | •       | •          |                             |             |            |             |             | •        |           | A               | Sodium Decyl Sulfate                      | 142-87-0    | –    |
| ROSULfan E          | •       | •          |                             |             |            |             |             | •        |           | A               | Sodium 2-Ethylhexyl Sulfate               | 126-92-1    | –    |
| ROSULfan L          | •       | •          |                             |             |            |             |             | •        |           | A               | Sodium Lauryl Sulfate                     | 85586-07-8  | –    |
| ROSULfan O          | •       | •          |                             |             |            |             |             | •        |           | A               | Sodium Octyl Sulphate                     | 142-31-4    | –    |
| EXOfos PA–1300      |         |            |                             |             |            | •           |             |          |           | A               | Tridecyl Ether Phosphate                  | -           | –    |
| EXOfos PB–136       | •       | •          |                             |             |            | •           |             | •        |           | A               | POE (6) Tridecyl Ether Phosphate          | 9046-01-9   | –    |
| EXOfos PB–136B      | •       | •          |                             |             |            | •           |             | •        |           | A               | POE (6) Tridecyl Ether Phosphate          | 9046-01-9   | –    |
| EXOfos PB–139       | •       | •          |                             |             |            | •           |             | •        |           | A               | POE (9) Tridecyl Ether Phosphate          | 9046-01-9   | –    |
| EXOfos PB–264       | •       | •          |                             | •           |            | •           |             | •        |           | A               | POE (4) Lauryl Ether Phosphate            | 68511-37-5  | –    |
| EXOfos PT–E         |         | •          | •                           |             | •          | •           |             |          |           | A               | POE (16) Tristyrylphenol Ether Phosphate, | 90093-37-1  | –    |
| ROKAfos 1013        | •       |            |                             |             |            | •           |             | •        |           | A               | POE (9) Tridecyl Ether Phosphate          | 9046-01-9   | –    |
| ROKAnol GA3         |         | •          | •                           | •           |            |             |             | •        |           | N               | Alcohols, C10 + 3 EO                      | 160875-66-1 | 9.0  |
| ROKAnol GA4         |         | •          | •                           | •           |            |             |             | •        |           | N               | Alcohols, C10 + 4 EO                      | 160875-66-1 | –    |
| ROKAnol GA5         |         | •          | •                           | •           |            |             |             | •        |           | N               | Alcohols, C10 + 5 EO                      | 160875-66-1 | –    |
| ROKAnol GA5W        |         | •          | •                           | •           |            |             |             | •        |           | N               | Alcohols, C10 + 5 EO                      | 160875-66-1 | –    |
| ROKAnol GA6         | •       | •          | •                           | •           |            |             |             | •        | •         | N               | Alcohols, C10 + 6 EO                      | 160875-66-1 | 12.5 |
| ROKAnol GA7         | •       | •          | •                           | •           |            |             |             | •        | •         | N               | Alcohols, C10 + 7 EO                      | 160875-66-1 | 13.0 |
| ROKAnol GA7LA       | •       | •          | •                           | •           |            |             |             | •        | •         | N               | Alcohols, C10 + EO/PO                     | 166736-08-9 | –    |
| ROKAnol GA7LAW      | •       | •          | •                           | •           |            |             |             | •        | •         | N               | Alcohols, C10 + EO/PO                     | 166736-08-9 | –    |
| ROKAnol GA7W        | •       | •          | •                           | •           |            |             |             | •        | •         | N               | Alcohols, C10 + 7 EO                      | 160875-66-1 | 13.0 |
| ROKAnol GA8         | •       | •          | •                           | •           | •          | •           | •           | •        |           | N               | Alcohols, C10 + 8 EO                      | 160875-66-1 | 14.0 |
| ROKAnol GA8LA       | •       | •          | •                           | •           | •          | •           |             |          |           | N               | Alcohols, C10 + EO/PO                     | 166736-08-9 | –    |
| ROKAnol GA8W        | •       | •          | •                           | •           | •          | •           |             |          |           | N               | Alcohols, C10 + 8 EO                      | 160875-66-1 | 14.0 |

## Desizing

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Dye removal | Cleaning | Softening | Ionic character | Description                    | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-------------|----------|-----------|-----------------|--------------------------------|-------------|------|
| ROKAnol GA9     |         | •          | •                           |             | •          |             | •           | •        |           | N               | Alcohols, C10 + 9 EO           | 160875-66-1 | 14.5 |
| ROKAnol GA9LA   |         | •          | •                           |             | •          |             | •           | •        |           | N               | Alcohols, C10 + EO/PO          | 166736-08-9 | –    |
| ROKAnol GA9W/80 |         | •          | •                           |             | •          |             | •           | •        |           | N               | Alcohols, C10 + 9 EO           | 160875-66-1 | –    |
| ROKAnol GT5     |         | •          |                             |             |            | •           |             |          |           | N               | Alcohols, C9-16 + 5 EO         | 97043-91-9  | 10.7 |
| ROKAnol GT6     | •       | •          |                             | •           |            | •           |             |          |           | N               | Alcohols, C9-16 + 6 EO         | 97043-91-9  | 12.0 |
| ROKAnol GT7     | •       | •          |                             |             |            | •           |             |          |           | N               | Alcohols, C9-16 + 7 EO         | 97043-91-9  | 12.8 |
| ROKAnol GT8     | •       | •          | •                           | •           |            |             |             |          |           | N               | Alcohols, C9-16 + 8 EO         | 97043-91-9  | 13.3 |
| ROKAnol GT9     | •       |            | •                           |             | •          | •           |             |          |           | N               | Alcohols, C9-16 + 9 EO         | 97043-91-9  | –    |
| ROKAnol GT9W    | •       |            | •                           |             | •          | •           |             |          |           | N               | Alcohols, C9-16 + 9 EO         | 97043-91-9  | –    |
| ROKAnol ID5     | •       | •          |                             |             | •          | •           |             |          |           | N               | Isodecanol + 5 EO              | 78330-20-8  | 11.7 |
| ROKAnol ID6     | •       | •          |                             | •           |            |             |             |          |           | N               | Isodecanol + 6 EO              | 78330-20-8  | 12.4 |
| ROKAnol ID7     | •       | •          |                             | •           |            |             |             |          |           | N               | Isodecanol + 7 EO              | 78330-20-8  | 13.2 |
| ROKAnol ID8     | •       | •          |                             | •           |            |             |             |          |           | N               | Isodecanol + 8 EO              | 78330-20-8  | 13.8 |
| ROKAnol IT5     |         | •          |                             | •           |            |             |             |          |           | N               | Alcohols, C13, branched + 5 EO | 69011-36-5  | 10.5 |
| ROKAnol IT6     | •       | •          |                             | •           |            | •           |             | •        |           | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.4 |
| ROKAnol IT6R    | •       | •          |                             | •           |            | •           |             | •        |           | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.5 |
| ROKAnol IT7     | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT7W    | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT8     | •       | •          |                             | •           |            | •           |             |          |           | N               | Alcohols, C13, branched + 8 EO | 69011-36-5  | 12.8 |
| ROKAnol IT9     |         | •          |                             |             | •          |             | •           | •        |           | N               | Alcohols, C13, branched + 9 EO | 69011-36-5  | 13.3 |
| ROKAnol IT9W    |         | •          |                             |             | •          |             | •           | •        |           | N               | Alcohols, C13, branched + 9 EO | 69011-36-5  | 13.3 |
| ROKAnol LP27    | •       | •          | •                           | •           | •          |             | •           | •        |           | N               | Alcohols, C12-14 + EO/PO       | 68439-51-0  | 6.0  |
| ROKAnol LP3943  | •       | •          | •                           |             |            |             |             | •        |           | N               | Alcohols, C12-15 + EO/PO       | 120313-48-6 | –    |
| ROKAnol LP400   | •       | •          | •                           | •           |            |             | •           | •        |           | N               | Isodecyl Alcohol + EO/PO       | 103818-93-5 | –    |
| ROKAnol LP700   | •       | •          | •                           | •           |            |             |             | •        |           | N               | Isotridecyl Alcohol + EO/PO    | 196823-11-7 | –    |
| ROKAnol LP911   | •       | •          | •                           |             |            |             |             | •        |           | N               | Alcohols, C9-11+ EO/PO         | 102782-43-4 | –    |
| ROKAnol MT5E    | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C8-18 + 5 EO         | 157707-43-2 | –    |
| ROKAnol MT7E    | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C8-18 + 7 EO         | 157707-43-2 | –    |
| ROKAnol NL3     | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 3 EO         | 68439-46-3  | 8.5  |
| ROKAnol NL4     | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 4 EO         | 68439-46-3  | –    |
| ROKAnol NL5     | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 5 EO         | 68439-46-3  | 11.6 |

## Desizing

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Dye removal | Cleaning | Softening | Ionic character | Description              | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-------------|----------|-----------|-----------------|--------------------------|-------------|------|
| ROKAnol NL6     | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 6 EO   | 68439-46-3  | 12.5 |
| ROKAnol NL6W    | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 6 EO   | 68439-46-3  | –    |
| ROKAnol NL6W/95 | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 6 EO   | 68439-46-3  | 12.5 |
| ROKAnol NL8     | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 8 EO   | 68439-46-3  | 15.7 |
| ROKAnol NL8W    | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + 8 EO   | 68439-46-3  | 13.8 |
| ROKAnol NL8P4   | •       | •          | •                           | •           | •          |             |             | •        |           | N               | Alcohols, C9-11 + EO/PO  | 103818-93-5 | 9.5  |
| ROKAnol TMP3    | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C13-15 + 3 EO  | 157627-86-6 | –    |
| ROKAnol TMP5    | •       | •          |                             | •           | •          |             |             | •        |           | N               | Alcohols, C13-15 + 5 EO  | 157627-86-6 | 12   |
| ROKAnol TMP7    | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C13-15 + 7 EO  | 157627-86-6 | 12   |
| ROKAnol TMP7R   | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C13-15 + 7 EO  | 157627-86-6 | 12   |
| ROKAnol UD3     | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C11-Iso + 3 EO | 127036-24-2 | 8.7  |
| ROKAnol UD5     | •       | •          |                             | •           |            |             |             | •        |           | N               | Alcohols, C11-Iso + 5 EO | 127036-24-2 | 11.0 |
| ROKAnol UD7     | •       | •          |                             | •           |            | •           |             | •        |           | N               | Alcohols, C11-Iso + 7 EO | 127036-24-2 | 12.3 |
| ROKAfenol N7    | •       | •          |                             | •           | •          |             | •           | •        |           | N               | Nonylphenol + 7 EO       | 127087-87-0 | 11.5 |
| ROKAfenol N8    | •       | •          |                             | •           | •          |             | •           | •        |           | N               | Nonylphenol + 9 EO       | 127087-87-0 | 12.5 |
| ROKAfenol N8P7  | •       | •          | •                           | •           | •          |             | •           | •        |           | N               | Nonylphenol + EO/PO      | 37251-69-7  | 7.7  |
| ROKAfenol N8P14 | •       | •          | •                           | •           | •          |             | •           | •        |           | N               | Nonylphenol + EO/PO      | 37251-69-7  | 5.5  |
| ROKAfenol N9    | •       | •          |                             | •           | •          |             | •           | •        |           | N               | Nonylphenol + 9 EO       | 127087-87-0 | 12.8 |
| ROKAmer 2100    | •       |            | •                           | •           | •          |             |             |          |           | N               | PEG/PPG-Copolymer        | 9003-11-6   | 3.4  |
| ROKAmer 2330    | •       |            | •                           | •           | •          |             |             |          |           | N               | PEG/PPG-Copolymer        | 9003-11-6   | 4.9  |
| ROKAmer 2950    | •       | •          | •                           | •           | •          |             |             | •        | •         | N               | PEG/PPG-Copolymer        | 9003-11-6   | 8.1  |
| ROKAmer PP450   | •       | •          | •                           | •           | •          |             |             | •        |           | N               | PPG                      | 25322-69-4  | –    |
| EXOdemul S11    | •       | •          | •                           | •           | •          |             |             | •        |           | N               | PEG/PPG-Copolymer        | -           | –    |
| EXOdemul WD–18  | •       | •          | •                           | •           | •          |             |             | •        |           | N               | PEG/PPG-Copolymer        | 9003-11-6   | –    |

## Scouring

| Product             | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                                           | CAS         | HLB  |
|---------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-------------------------------------------------------|-------------|------|
| ABS Acid            | •       | •          |                             | •           |            |             |           |             | •        |           | A               | Dodecylbenzene Sulfonic Acid                          | 85536-14-7  | –    |
| ABS Acid/1          | •       | •          |                             | •           |            |             |           |             | •        |           | A               | Dodecylbenzene Sulfonic Acid                          | 85536-14-7  | –    |
| ABSNa 30            | •       | •          |                             | •           |            |             |           |             | •        |           | A               | Sodium Dodecylbenzenesulfonate                        | 68411-30-3  | –    |
| ABSNa 50            | •       | •          |                             | •           |            |             |           |             | •        |           | A               | Sodium Dodecylbenzenesulfonate                        | 68411-30-3  | –    |
| SULFOROKAnol L225/1 | •       | •          |                             |             |            |             | •         | •           | •        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3  | –    |
| SULFOROKAnol L227/1 | •       | •          |                             |             |            |             | •         | •           | •        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3  | –    |
| SULFOROKAnol L270/1 | •       | •          |                             |             |            |             | •         | •           | •        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3  | –    |
| SULFOROKAnol L327   | •       | •          |                             |             |            |             | •         | •           | •        |           | A               | Sodium C12-C15 Pareth Sulfate                         | 68891-38-3  | –    |
| ROSULfan D          | •       | •          |                             |             |            |             |           | •           |          |           | A               | Sodium Decyl Sulfate                                  | 142-87-0    | –    |
| ROSULfan E          | •       | •          |                             |             |            |             |           | •           |          |           | A               | Sodium 2-Ethylhexyl Sulfate                           | 126-92-1    | –    |
| ROSULfan L          | •       | •          |                             |             |            |             |           | •           |          |           | A               | Sodium Lauryl Sulfate                                 | 85586-07-8  | –    |
| ROSULfan O          | •       | •          |                             |             |            |             |           | •           |          |           | A               | Sodium Octyl Sulphate                                 | 142-31-4    | –    |
| EXOfos PA–0805      |         | •          |                             | •           |            |             |           |             |          |           | A               | 2-Ethylhexyl Ether Phosphate                          | 12645-31-7  | –    |
| EXOfos PB–043K      |         | •          | •                           | •           |            |             | •         | •           | •        |           | A               | POE (3) Butyl Alcohol Ether Phosphate, Potassium salt | –           | –    |
| EXOfos PB–083       | •       | •          | •                           |             |            |             | •         | •           | •        |           | A               | POE (3) 2-Ethylhexyl Ether Phosphate                  | 68439-39-4  | A    |
| EXOfos PB–136       | •       | •          |                             | •           |            | •           |           | •           |          |           | A               | POE (6) Tridecyl Ether Phosphate                      | 9046-01-9   | A    |
| EXOfos PB–136B      | •       | •          |                             |             |            | •           |           | •           |          |           | A               | POE (6) Tridecyl Ether Phosphate                      | 9046-01-9   | A    |
| EXOfos PB–138       | •       | •          |                             |             |            | •           |           | •           |          |           | A               | POE (8) Tridecyl Ether Phosphate                      | 39464-69-2  | A    |
| EXOfos PB–139       | •       | •          |                             |             |            | •           |           | •           |          |           | A               | POE (9) Tridecyl Ether Phosphate                      | 9046-01-9   | A    |
| EXOfos PB–184       | •       | •          |                             |             |            | •           |           | •           |          |           | A               | POE (4) Oleyl Ether Phosphate                         | 39464-69-2  | A    |
| EXOfos PB–264       | •       | •          |                             |             |            | •           |           | •           |          |           | A               | POE (4) Lauryl Ether Phosphate                        | 68511-37-5  | A    |
| EXOfos PT–E         |         | •          | •                           |             | •          | •           |           |             |          |           | A               | POE (16) Tristyrylphenol Ether Phosphate              | 90093-37-1  | –    |
| ROKAfos 1013        | •       |            |                             |             |            | •           |           | •           |          |           | A               | POE (9)Tridecyl Ether Phosphate                       | 9046-01-9   | –    |
| ROKAnol B2          | •       | •          | •                           | •           |            |             |           |             | •        |           | N               | Alcohols, C16-18 + EO/PO                              | 68002-96-0  | 6.2  |
| ROKAnol D5          | •       | •          |                             |             |            |             |           |             | •        |           | N               | Alcohols, C10-16 + 5 EO                               | 78330-20-8  | 11.9 |
| ROKAnol D7          | •       | •          |                             |             |            |             |           |             | •        |           | N               | Alcohols, C10-16 + 7 EO                               | 68002-97-1  | 13.1 |
| ROKAnol DB5         |         |            |                             | •           |            | •           |           |             |          |           | N               | Alcohols, C12-15 + 5 EO                               | 68131-39-5  | 10.5 |
| ROKAnol DB6         | •       |            |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C12-15 + 5 EO                               | 68131-39-5  | 11.4 |
| ROKAnol DB6M        | •       |            |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C12-15 + 5 EO                               | 68131-39-5  | 11.4 |
| ROKAnol GA3         |         | •          | •                           |             |            |             | •         |             |          |           | N               | Alcohols, C10 + 3 EO                                  | 160875-66-1 | 9.0  |
| ROKAnol GA4         |         | •          | •                           |             |            |             | •         |             |          |           | N               | Alcohols, C10 + 4 EO                                  | 160875-66-1 | –    |

## Scouring

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                    | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|--------------------------------|-------------|------|
| ROKAnol GA5     |         | •          | •                           |             |            |             | •         |             |          |           | N               | Alcohols, C10 + 5 EO           | 160875-66-1 | –    |
| ROKAnol GA5W    | •       | •          | •                           |             |            |             | •         |             |          |           | N               | Alcohols, C10 + 5 EO           | 160875-66-1 | –    |
| ROKAnol GA6     | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + 6 EO           | 160875-66-1 | 12.5 |
| ROKAnol GA7     | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + 7 EO           | 160875-66-1 | 13.0 |
| ROKAnol GA7LA   | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + EO/PO          | 166736-08-9 | –    |
| ROKAnol GA7LAW  | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + EO/PO          | 166736-08-9 | –    |
| ROKAnol GA7W    | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + 7 EO           | 160875-66-1 | 13.0 |
| ROKAnol GA8     | •       | •          | •                           | •           | •          | •           | •         | •           |          |           | N               | Alcohols, C10 + 8 EO           | 160875-66-1 | 14.0 |
| ROKAnol GA8LA   | •       | •          | •                           | •           | •          | •           |           |             |          |           | N               | Alcohols, C10 + EO/PO          | 166736-08-9 | –    |
| ROKAnol GA8W    | •       | •          | •                           | •           | •          | •           |           |             |          |           | N               | Alcohols, C10 + 8 EO           | 160875-66-1 | 14.0 |
| ROKAnol GA9     |         | •          | •                           |             | •          |             | •         | •           |          |           | N               | Alcohols, C10 + 9 EO           | 160875-66-1 | 14.5 |
| ROKAnol GA9LA   |         | •          | •                           |             | •          |             | •         | •           |          |           | N               | Alcohols, C10 + EO/PO          | 166736-08-9 | –    |
| ROKAnol GA9W/80 |         | •          | •                           |             | •          |             | •         | •           |          |           | N               | Alcohols, C10 + 9 EO           | 160875-66-1 | –    |
| ROKAnol GT3     |         | •          |                             |             |            | •           |           |             |          |           | N               | Alcohols, C9-16 + 3 EO         | 97043-91-9  | 8.5  |
| ROKAnol GT5     |         | •          |                             | •           |            | •           |           |             |          |           | N               | Alcohols, C9-16 + 5 EO         | 97043-91-9  | 10.7 |
| ROKAnol GT6     | •       | •          |                             |             |            | •           |           |             |          |           | N               | Alcohols, C9-16 + 6 EO         | 97043-91-9  | 12.0 |
| ROKAnol GT7     | •       | •          | •                           | •           |            |             |           |             |          |           | N               | Alcohols, C9-16 + 7 EO         | 97043-91-9  | 12.8 |
| ROKAnol GT8     | •       |            | •                           |             | •          | •           |           |             |          |           | N               | Alcohols, C9-16 + 8 EO         | 97043-91-9  | 13.3 |
| ROKAnol GT9     | •       |            | •                           |             | •          | •           |           |             |          |           | N               | Alcohols, C9-16 + 9 EO         | 97043-91-9  | –    |
| ROKAnol GT9W    | •       |            | •                           |             | •          | •           |           |             |          |           | N               | Alcohols, C9-16 + 9 EO         | 97043-91-9  | –    |
| ROKAnol ID5     | •       | •          |                             |             | •          | •           |           |             |          |           | N               | Isodecanol + 5 EO              | 78330-20-8  | 11.7 |
| ROKAnol ID6     | •       | •          |                             |             | •          | •           |           |             |          |           | N               | Isodecanol + 6 EO              | 78330-20-8  | 12.4 |
| ROKAnol ID7     | •       | •          |                             | •           |            |             |           |             |          |           | N               | Isodecanol + 7 EO              | 78330-20-8  | 13.2 |
| ROKAnol ID8     | •       | •          |                             | •           |            |             |           |             |          |           | N               | Isodecanol + 8 EO              | 78330-20-8  | 13.8 |
| ROKAnol IT3     |         | •          |                             |             |            | •           |           |             |          |           | N               | Alcohols, C13, branched + 3 EO | 69011-36-5  | 8.0  |
| ROKAnol IT5     |         | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13, branched + 5 EO | 69011-36-5  | 10.5 |
| ROKAnol IT6     | •       | •          |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.4 |
| ROKAnol IT6R    | •       | •          |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.5 |
| ROKAnol IT7     | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT7W    | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT8     | •       | •          |                             | •           | •          | •           |           |             |          |           | N               | Alcohols, C13, branched + 8 EO | 69011-36-5  | 12.8 |

## Scouring

| Product            | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                                                           | CAS         | HLB  |
|--------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-----------------------------------------------------------------------|-------------|------|
| ROKAnol IT9        |         | ●          |                             |             | ●          |             |           | ●           | ●        |           | N               | Alcohols, C13, branched + 9 EO                                        | 69011-36-5  | 13.3 |
| ROKAnol IT9W       |         | ●          |                             |             | ●          |             |           | ●           | ●        |           | N               | Alcohols, C13, branched + 9 EO                                        | 69011-36-5  | 13.3 |
| ROKAnol K3         |         |            |                             | ●           |            |             |           |             |          |           | N               | Alcohols, C16-18 unsaturated + 3 EO                                   | 68920-66-1  | 7.0  |
| ROKAnol K5         |         |            |                             | ●           |            |             |           |             |          |           | N               | Alcohols, C16-18 unsaturated + 5 EO                                   | 68920-66-1  | 9.2  |
| ROKAnol K7         |         |            |                             | ●           |            |             |           |             |          |           | N               | Alcohols, C16-18 unsaturated + 7 EO                                   | 68920-66-1  | 10.8 |
| ROKAnol K18        |         | ●          |                             | ●           | ●          |             |           | ●           | ●        |           | N               | Alcohols, C16-18 unsaturated + 18 EO                                  | 68920-66-1  | 16.3 |
| ROKAnol K21        |         | ●          |                             | ●           | ●          |             |           | ●           | ●        |           | N               | Alcohols, C16-18 unsaturated + 21 EO                                  | 68920-66-1  | 16.5 |
| ROKAnol L4P5       | ●       |            | ●                           | ●           |            |             |           |             | ●        |           | N               | Alcohols, C12-14 + EO/PO                                              | 68439-51-0  | 5.3  |
| ROKAnol L5P5       | ●       | ●          | ●                           | ●           |            |             |           |             | ●        |           | N               | Alcohols, C12-14 + EO/PO                                              | 68439-51-0  | 6.0  |
| ROKAnol L10        | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C12-14 + 10 EO                                              | 68439-50-9  | 14.1 |
| ROKAnol L10A       | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C12-16 + 10 EO                                              | 68551-12-2  | 14.1 |
| ROKAnol L10/80     | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C12-14 + 10 EO                                              | 68439-50-9  | 14.1 |
| ROKAnol L80/50W    | ●       | ●          | ●                           | ●           | ●          |             |           |             | ●        |           | N               | Alcohol, C12-14 + EO/PO                                               | 68439-51-0  | 17.6 |
| ROKAnol LK1        |         | ●          |                             | ●           |            | ●           |           |             | ●        |           | N               | Alcohols, C12-14 + EO                                                 | 68439-50-9  | 3.7  |
| ROKAnol LK2        |         | ●          |                             | ●           |            | ●           |           |             | ●        |           | N               | Alcohols, C12-14 + 2 EO                                               | 68439-50-9  | 6.2  |
| ROKAnol LK3        |         | ●          |                             | ●           |            | ●           |           |             | ●        |           | N               | Alcohols, C12-14 + 3 EO                                               | 68439-50-9  | 7.8  |
| ROKAnol LP2024W/95 | ●       | ●          | ●                           | ●           | ●          | ●           |           | ●           | ●        |           | N               | Alcohols, C10 + EO/PO                                                 | 37251-67-5  | 6.3  |
| ROKAnol LP100      | ●       | ●          | ●                           |             | ●          |             |           | ●           | ●        |           | N               | Alcohols, C12-15 + EO/PO                                              | 120313-48-6 | –    |
| ROKAnol LP1319     |         |            | ●                           |             |            |             |           |             |          |           | N               | Alcohols, C16-18 + EO/PO                                              | 68002-96-0  | –    |
| ROKAnol LP160      |         | ●          | ●                           |             | ●          |             |           | ●           |          |           | N               | Alcohols, C12-14, ethoxylated propoxylated                            | 68439-51-0  | –    |
| ROKAnol LP200      |         |            | ●                           |             | ●          |             |           | ●           | ●        |           | N               | Isodecyl Alcohol + EO/PO                                              | 68439-30-5  | –    |
| ROKAnol LP2023     |         |            | ●                           |             | ●          |             |           |             |          |           | N               | Alcohols, C16-18 + EO/PO                                              | 68002-96-0  | –    |
| ROKAnol LP2126     | ●       |            | ●                           | ●           | ●          |             |           | ●           | ●        |           | N               | Alcohols, C16-18 + EO/PO                                              | 68002-96-0  | –    |
| ROKAnol LP2227     | ●       | ●          | ●                           | ●           | ●          |             |           | ●           | ●        |           | N               | Oxirane, 2-methyl-, polymer with oxirane, mono (2-propylheptyl) ether | 166736-08-9 | –    |
| ROKAnol LP2529     | ●       | ●          | ●                           | ●           |            |             |           |             | ●        |           | N               | Alcohols, C12-14 + EO/PO                                              | 68551-13-3  | 3.5  |
| ROKAnol LP27       | ●       | ●          | ●                           | ●           | ●          |             |           | ●           | ●        |           | N               | Alcohols, C12-14 + EO/PO                                              | 68439-51-0  | 6.0  |
| ROKAnol LP3135     | ●       | ●          | ●                           | ●           |            |             |           |             | ●        |           | N               | Alcohols, C9-11-Iso-, C10- rich + EO/PO                               | 154518-36-2 | –    |
| ROKAnol LP3943     | ●       | ●          | ●                           |             |            |             |           |             | ●        |           | N               | Alcohols, C12-15 + EO/PO                                              | 120313-48-6 | –    |
| ROKAnol LP400      | ●       | ●          | ●                           | ●           |            |             |           | ●           | ●        |           | N               | Isodecyl Alcohol + EO/PO                                              | 103818-93-5 | –    |
| ROKAnol LP60       |         |            | ●                           |             |            |             |           |             | ●        |           | N               | Alcohols, C9-11 + PO                                                  | 68920-69-4  | –    |

## Scouring

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                 | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-----------------------------|-------------|------|
| ROKAnol LP700   | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Isotridecyl Alcohol + EO/PO | 196823-11-7 | –    |
| ROKAnol LP911   | •       | •          | •                           |             |            |             |           |             | •        |           | N               | Alcohols, C9-11+ EO/PO      | 102782-43-4 | –    |
| ROKAnol NL6     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | 12.5 |
| ROKAnol NL6W    | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | –    |
| ROKAnol NL6W/95 | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | 12.5 |
| ROKAnol NL8     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | 15.7 |
| ROKAnol NL8W    | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | 13.8 |
| ROKAnol NL8P4   | •       | •          | •                           | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + EO/PO     | 103818-93-5 | 9.5  |
| ROKAnol NL9     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | –    |
| ROKAnol RZ4P11™ | •       | •          | •                           |             | •          |             |           |             |          |           | N               | Alcohols, C16-18 + EO/PO    | 68002-96-0  | 3.3  |
| ROKAnol T6      |         |            |                             | •           | •          |             |           |             |          |           | N               | Alcohols, C16-18 + 6 EO     | 68439-49-6  | 10   |
| ROKAnol T12     |         |            |                             | •           | •          |             |           |             |          |           | N               | Alcohols, C16-18 + 12 EO    | 68439-49-6  | 13.5 |
| ROKAnol TMP7    | •       | •          |                             | •           |            |             |           | •           |          |           | N               | Alcohols, C13-15 + 7 EO     | 157627-86-6 | 12   |
| ROKAnol TMP7R   | •       | •          |                             | •           |            |             |           | •           |          |           | N               | Alcohols, C13-15 + 7 EO     | 157627-86-6 | 12   |
| ROKAnol UD3     | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C11-Iso + 3 EO    | 127036-24-2 | 8.7  |
| ROKAnol UD5     | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C11-Iso + 5 EO    | 127036-24-2 | 11.0 |
| ROKAnol UD7     | •       | •          |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C11-Iso + 7 EO    | 127036-24-2 | 12.3 |
| ROKAfenol N7    | •       | •          |                             | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + 7 EO          | 127087-87-0 | 11.5 |
| ROKAfenol N8    | •       | •          |                             | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + 9 EO          | 127087-87-0 | 12.5 |
| ROKAfenol N8P7  | •       | •          | •                           | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + EO/PO         | 37251-69-7  | 7.7  |
| ROKAfenol N8P14 | •       | •          | •                           | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + EO/PO         | 37251-69-7  | 5.5  |
| ROKAmin SR8P4   |         |            | •                           | •           |            |             | •         |             | •        |           | N               | Tallow Amine + EO/PO        | –           | 8.8  |
| ROKAcet O7      |         |            |                             | •           |            | •           |           |             |          |           | N               | Oleate + 7 EO               | 9004-96-0   | 10.6 |
| ROKAmer 2000    | •       |            | •                           |             |            |             |           |             | •        |           | N               | PEG/PPG Copolymer           | 9003-11-6   | 2.4  |
| ROKAmer 2100    | •       |            | •                           | •           | •          |             |           |             |          |           | N               | PEG/PPG-Copolymer           | 9003-11-6   | 3.4  |
| ROKAmer 2330    | •       |            | •                           | •           | •          |             |           |             |          |           | N               | PEG/PPG Copolymer           | 9003-11-6   | 4.9  |
| ROKAmer 2400    | •       |            | •                           |             |            |             |           |             |          |           | N               | PEG/PPG Copolymer           | 9003-11-6   | –    |
| ROKAmer 2600    |         |            | •                           |             |            |             |           |             | •        |           | N               | PEG/PPG Copolymer           | 9003-11-6   | 5.6  |
| ROKAmer 2950    | •       | •          | •                           | •           | •          |             |           |             | •        | •         | N               | PEG/PPG Copolymer           | 9003-11-6   | 8.1  |
| ROKAmer G3400   |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO           | 9082-00-2   | –    |
| ROKAmer G3500   |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO           | 9082-00-2   | –    |

## Scouring

| Product        | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description       | CAS        | HLB |
|----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-------------------|------------|-----|
| ROKAmer G3800  |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO | 9082-00-2  | –   |
| ROKAmer GS000E |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO | 9082-00-2  | –   |
| ROKAmer PP450  |         |            | •                           |             |            |             |           |             | •        |           | N               | PPG               | 25322-69-4 | –   |
| ROKAmer PP2000 |         | •          | •                           |             |            |             |           |             |          |           | N               | PPG               | 25322-69-4 | –   |
| ROKAmer PP4000 |         |            | •                           |             |            |             |           |             |          |           | N               | PPG               | 25322-69-4 | –   |



## Bleaching

| Product             | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                                           | CAS        | HLB  |
|---------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-------------------------------------------------------|------------|------|
| ABS Acid            | ●       | ●          |                             | ●           |            |             |           |             | ●        |           | A               | Dodecylbenzene Sulfonic Acid                          | 85536-14-7 | –    |
| ABS Acid/1          | ●       | ●          |                             | ●           |            |             |           |             | ●        |           | A               | Dodecylbenzene Sulfonic Acid                          | 85536-14-7 | –    |
| ABSNa 30            | ●       | ●          |                             | ●           |            |             |           |             | ●        |           | A               | Sodium Dodecylbenzenesulfon ate                       | 68411-30-3 | –    |
| ABSNa 50            | ●       | ●          |                             | ●           |            |             |           |             | ●        |           | A               | Sodium Dodecylbenzenesulfon ate                       | 68411-30-3 | –    |
| SULFOROKAnol L225/1 | ●       | ●          |                             |             |            |             | ●         | ●           | ●        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3 | –    |
| SULFOROKAnol L227/1 | ●       | ●          |                             |             |            |             | ●         | ●           | ●        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3 | –    |
| SULFOROKAnol L270/1 | ●       | ●          |                             |             |            |             | ●         | ●           | ●        |           | A               | Sodium Laureth Sulfate                                | 68891-38-3 | –    |
| SULFOROKAnol L327   | ●       | ●          |                             |             |            |             | ●         | ●           | ●        |           | A               | Sodium C12-C15 Pareth Sulfate                         | 68891-38-3 | –    |
| ROSULfan D          | ●       | ●          |                             |             |            |             |           | ●           |          |           | A               | Sodium Decyl Sulfate                                  | 142-87-0   | –    |
| ROSULfan E          | ●       | ●          |                             |             |            |             |           | ●           |          |           | A               | Sodium 2-Ethylhexyl Sulfate                           | 126-92-1   | –    |
| ROSULfan L          | ●       | ●          |                             |             |            |             |           | ●           |          |           | A               | Sodium Lauryl Sulfate                                 | 85586-07-8 | –    |
| ROSULfan O          | ●       | ●          |                             |             |            |             |           | ●           |          |           | A               | Sodium Octyl Sulphate                                 | 142-31-4   | –    |
| EXOfos PA–0805      |         | ●          |                             | ●           |            |             |           |             |          |           | A               | 2-Ethylhexyl Ether Phosphate                          | 12645-31-7 | –    |
| EXOfos PA–1300      |         |            |                             |             |            | ●           |           |             |          |           | A               | Tridecyl Ether Phosphate                              | –          | –    |
| EXOfos PB–043K      |         | ●          | ●                           | ●           |            |             | ●         | ●           | ●        |           | A               | POE (3) Butyl Alcohol Ether Phosphate, Potassium salt | –          | –    |
| EXOfos PB–083       | ●       | ●          | ●                           |             |            |             | ●         | ●           | ●        |           | A               | POE (3) 2-Ethylhexyl Ether Phosphate                  | 68439-39-4 | A    |
| EXOfos PB–136       | ●       | ●          |                             | ●           |            | ●           |           | ●           |          |           | A               | POE (6) Tridecyl Ether Phosphate                      | 9046-01-9  | A    |
| EXOfos PB–136B      | ●       | ●          |                             |             |            | ●           |           | ●           |          |           | A               | POE (6) Tridecyl Ether Phosphate                      | 9046-01-9  | A    |
| EXOfos PB–138       | ●       | ●          |                             |             |            | ●           |           | ●           |          |           | A               | POE (8) Tridecyl Ether Phosphate                      | 39464-69-2 | A    |
| EXOfos PB–139       | ●       | ●          |                             |             |            | ●           |           | ●           |          |           | A               | POE (9) Tridecyl Ether Phosphate                      | 9046-01-9  | A    |
| EXOfos PB–184       | ●       | ●          |                             |             |            | ●           |           | ●           |          |           | A               | POE (4) Oleyl Ether Phosphate                         | 39464-69-2 | A    |
| EXOfos PB–264       | ●       | ●          |                             |             |            | ●           |           | ●           |          |           | A               | POE (4) Lauryl Ether Phosphate                        | 68511-37-5 | A    |
| EXOfos PT–E         |         | ●          | ●                           |             | ●          | ●           |           |             |          |           | A               | POE (16) Tristyrylphenol Ether Phosphate              | 90093-37-1 | –    |
| ROKAnol B2          | ●       | ●          | ●                           | ●           |            |             |           |             | ●        |           | N               | Alcohols, C16-18 + EO/PO                              | 68002-96-0 | 6.2  |
| ROKAnol D5          | ●       | ●          |                             |             |            |             |           |             | ●        |           | N               | Alcohols, C10-16 + 5 EO                               | 78330-20-8 | 11.9 |
| ROKAnol D7          | ●       | ●          |                             |             |            |             |           |             | ●        |           | N               | Alcohols, C10-16 + 7 EO                               | 68002-97-1 | 13.1 |
| ROKAnol NL6         | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C9-11 + 6 EO                                | 68439-46-3 | 12.5 |
| ROKAnol NL6W        | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C9-11 + 6 EO                                | 68439-46-3 | –    |
| ROKAnol NL6W/95     | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C9-11 + 6 EO                                | 68439-46-3 | 12.5 |
| ROKAnol NL8         | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C9-11 + 8 EO                                | 68439-46-3 | 15.7 |
| ROKAnol NL8W        | ●       | ●          |                             | ●           | ●          |             |           |             | ●        |           | N               | Alcohols, C9-11 + 8 EO                                | 68439-46-3 | 13.8 |

## Bleaching

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description             | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-------------------------|-------------|------|
| ROKAnol NL8P4   | •       | •          | •                           | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + EO/PO | 103818-93-5 | 9.5  |
| ROKAnol DB3     |         |            |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C12-15 + 3 EO | 68131-39-5  | 7.8  |
| ROKAnol DB5     |         |            |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C12-15 + 5 EO | 68131-39-5  | 10.5 |
| ROKAnol DB6     | •       | •          |                             | •           |            |             |           |             |          |           | N               | Alcohols, C12-15 + 5 EO | 68131-39-5  | 11.4 |
| ROKAnol DB6M    | •       | •          |                             | •           |            |             |           |             |          |           | N               | Alcohols, C12-15 + 5 EO | 68131-39-5  | 11.4 |
| ROKAnol DB7     | •       | •          |                             | •           |            |             |           |             |          |           | N               | Alcohols, C12-15 + 7 EO | 68131-39-5  | 12.0 |
| ROKAnol DB7R    | •       | •          |                             | •           |            |             |           |             |          |           | N               | Alcohols, C12-15 + 7 EO | 68131-39-5  | 12.0 |
| ROKAnol DB7W    | •       | •          |                             | •           |            |             |           |             |          |           | N               | Alcohols, C12-15 + 7 EO | 68131-39-5  | 12.0 |
| ROKAnol DB9     | •       | •          |                             | •           | •          |             |           | •           | •        |           | N               | Alcohols, C12-15 + 9 EO | 68131-39-5  | 13.2 |
| ROKAnol EH3     |         |            |                             | •           |            | •           |           | •           |          |           | N               | Isooctanol + 3 EO       | 26468-86-0  | –    |
| ROKAnol G8      |         |            |                             |             |            | •           | •         |             |          | •         | N               | Glycereth-8             | 31694-55-0  | 14.0 |
| ROKAnol G12     |         |            |                             |             |            | •           | •         |             |          | •         | N               | Glycereth-12            | 31694-55-0  | 17.0 |
| ROKAnol G15     |         |            |                             |             |            | •           | •         |             |          | •         | N               | Glycereth-15            | 31694-55-0  | 17.5 |
| ROKAnol GA3     |         | •          | •                           | •           |            |             |           | •           |          |           | N               | Alcohols, C10 + 3 EO    | 160875-66-1 | 9.0  |
| ROKAnol GA4     |         | •          | •                           | •           |            |             |           | •           |          |           | N               | Alcohols, C10 + 4 EO    | 160875-66-1 | –    |
| ROKAnol GA5     |         | •          | •                           | •           |            |             |           | •           |          |           | N               | Alcohols, C10 + 5 EO    | 160875-66-1 | –    |
| ROKAnol GA5W    |         | •          | •                           | •           |            |             |           | •           |          |           | N               | Alcohols, C10 + 5 EO    | 160875-66-1 | –    |
| ROKAnol GA6     | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + 6 EO    | 160875-66-1 | 12.5 |
| ROKAnol GA7     | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + 7 EO    | 160875-66-1 | 13.0 |
| ROKAnol GA7LA   | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA7LAW  | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA7W    | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Alcohols, C10 + 7 EO    | 160875-66-1 | 13.0 |
| ROKAnol GA8     | •       | •          | •                           | •           | •          | •           | •         | •           |          |           | N               | Alcohols, C10 + 8 EO    | 160875-66-1 | 14.0 |
| ROKAnol GA8LA   | •       | •          | •                           | •           | •          | •           |           |             |          |           | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA8W    | •       | •          | •                           | •           | •          | •           |           |             |          |           | N               | Alcohols, C10 + 8 EO    | 160875-66-1 | 14.0 |
| ROKAnol GA9     |         | •          | •                           |             | •          |             | •         | •           |          |           | N               | Alcohols, C10 + 9 EO    | 160875-66-1 | 14.5 |
| ROKAnol GA9LA   |         | •          | •                           |             | •          |             | •         | •           |          |           | N               | Alcohols, C10 + EO/PO   | 166736-08-9 | –    |
| ROKAnol GA9W/80 |         | •          | •                           |             | •          |             | •         | •           |          |           | N               | Alcohols, C10 + 9 EO    | 160875-66-1 | –    |
| ROKAnol GT6     | •       | •          |                             | •           |            | •           |           | •           |          |           | N               | Alcohols, C9-16 + 6 EO  | 97043-91-9  | 12.0 |
| ROKAnol GT7     | •       | •          |                             | •           |            |             |           | •           |          |           | N               | Alcohols, C9-16 + 7 EO  | 97043-91-9  | 12.8 |
| ROKAnol GT8     | •       | •          |                             | •           | •          | •           |           |             |          |           | N               | Alcohols, C9-16 + 8 EO  | 97043-91-9  | 13.3 |

## Bleaching

| Product            | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                    | CAS         | HLB  |
|--------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|--------------------------------|-------------|------|
| ROKAnol ID5        | •       | •          |                             |             | •          | •           |           |             |          |           | N               | Isodecanol + 5 EO              | 78330-20-8  | 11.7 |
| ROKAnol ID6        | •       | •          |                             | •           |            |             |           |             |          |           | N               | Isodecanol + 6 EO              | 78330-20-8  | 12.4 |
| ROKAnol ID7        | •       | •          |                             | •           |            |             |           |             |          |           | N               | Isodecanol + 7 EO              | 78330-20-8  | 13.2 |
| ROKAnol ID8        | •       | •          |                             | •           |            |             |           |             |          |           | N               | Isodecanol + 8 EO              | 78330-20-8  | 13.8 |
| ROKAnol IT6        | •       | •          |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.4 |
| ROKAnol IT6R       | •       | •          |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C13, branched + 6 EO | 69011-36-5  | 11.5 |
| ROKAnol IT7        | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT7W       | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13, branched + 7 EO | 69011-36-5  | 12.1 |
| ROKAnol IT8        | •       | •          |                             | •           | •          | •           |           |             |          |           | N               | Alcohols, C13, branched + 8 EO | 69011-36-5  | 12.8 |
| ROKAnol L4         | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C12-14 + 4 EO        | 68439-50-9  | 10.0 |
| ROKAnol L4P5       | •       |            | •                           | •           |            |             |           |             | •        |           | N               | Alcohols, C12-14 + EO/PO       | 68439-51-0  | 5.3  |
| ROKAnol L5A        |         | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C12-16 + 5 EO        | 68551-12-2  | 10.5 |
| ROKAnol L5P5       | •       | •          | •                           | •           |            |             |           |             | •        |           | N               | Alcohols, C12-14 + EO/PO       | 68439-51-0  | 6.0  |
| ROKAnol L7         | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C12-14 + 7 EO        | 68439-50-9  | 12.9 |
| ROKAnol L7A        | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C12-16 + 7 EO        | 68551-12-2  | 12.9 |
| ROKAnol L7W        | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C12-14 + 7 EO        | 68439-50-9  | 12.9 |
| ROKAnol L9A        | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C12-16 + 9 EO        | –           | –    |
| ROKAnol L9AW       | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C12-16 + 9 EO        | –           | 13.3 |
| ROKAnol L10        | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C12-14 + 10 EO       | 68439-50-9  | 14.1 |
| ROKAnol L10A       | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C12-16 + 10 EO       | 68551-12-2  | 14.1 |
| ROKAnol L10/80     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C12-14 + 10 EO       | 68439-50-9  | 14.1 |
| ROKAnol L80/50W    | •       | •          | •                           | •           | •          |             |           |             | •        |           | N               | Alcohol, C12-14 + EO/PO        | 68439-51-0  | 17.6 |
| ROKAnol LK1        |         |            |                             | •           |            | •           |           |             |          |           | N               | Alcohols, C12-14 + EO          | 68439-50-9  | 3.7  |
| ROKAnol LP2024W/95 | •       | •          | •                           | •           | •          | •           |           | •           | •        |           | N               | Alcohols, C10 + EO/PO          | 37251-67-5  | 6.3  |
| ROKAnol LP100      | •       | •          | •                           |             | •          |             |           | •           | •        |           | N               | Alcohols, C12-15 + EO/PO       | 120313-48-6 | –    |
| ROKAnol LP1319     |         |            | •                           |             |            |             |           |             |          |           | N               | Alcohols, C16-18 + EO/PO       | 68002-96-0  | –    |
| ROKAnol LP160      |         | •          | •                           |             | •          |             |           | •           |          |           | N               | Alcohols, C12-14 + PO          | 68439-51-0  | –    |
| ROKAnol LP200      |         |            | •                           |             | •          |             |           | •           | •        |           | N               | Isodecyl Alcohol + EO/PO       | 68439-30-5  | –    |
| ROKAnol LP2023     |         |            | •                           |             | •          |             |           |             |          |           | N               | Alcohols, C16-18 + EO/PO       | 68002-96-0  | –    |
| ROKAnol LP2126     | •       |            | •                           | •           | •          |             |           | •           | •        |           | N               | Alcohols, C16-18 + EO/PO       | 68002-96-0  | –    |
| ROKAnol LP2227     | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | 2-Propylheptanol + EO/PO       | 166736-08-9 | –    |

## Bleaching

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description                 | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|-----------------------------|-------------|------|
| ROKAnol LP2529  | •       | •          | •                           | •           |            |             |           |             | •        |           | N               | Alcohols, C12-14 + EO/PO    | 68551-13-3  | 3.5  |
| ROKAnol LP27    | •       | •          | •                           | •           | •          |             |           | •           | •        |           | N               | Alcohols, C12-14 + EO/PO    | 68439-51-0  | 6.0  |
| ROKAnol LP3135  | •       | •          | •                           | •           |            |             |           |             | •        |           | N               | Alcohols, C9-11 + EO/PO     | 154518-36-2 | –    |
| ROKAnol LP3943  | •       | •          | •                           |             |            |             |           |             | •        |           | N               | Alcohols, C12-15 + EO/PO    | 120313-48-6 | –    |
| ROKAnol LP400   | •       | •          | •                           | •           |            |             |           | •           | •        |           | N               | Isodecyl Alcohol + EO/PO    | 103818-93-5 | –    |
| ROKAnol LP60    |         |            | •                           |             |            |             |           |             | •        |           | N               | Alcohols, C9-11+PO          | 68920-69-4  | –    |
| ROKAnol LP700   | •       | •          | •                           | •           |            |             |           | •           |          |           | N               | Isotridecyl Alcohol + EO/PO | 196823-11-7 | –    |
| ROKAnol LP911   | •       | •          | •                           |             |            |             |           | •           |          |           | N               | Alcohols, C9-11+ EO/PO      | 102782-43-4 | –    |
| ROKAnol NL4     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11+ 4 EO       | 68439-46-3  | –    |
| ROKAnol NL5     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 5 EO      | 68439-46-3  | 11.6 |
| ROKAnol NL6     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | 12.5 |
| ROKAnol NL6W    | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | –    |
| ROKAnol NL6W/95 | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 6 EO      | 68439-46-3  | 12.5 |
| ROKAnol NL8     | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | 15.7 |
| ROKAnol NL8W    | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + 8 EO      | 68439-46-3  | 13.8 |
| ROKAnol NL8P4   | •       | •          | •                           | •           | •          |             |           |             | •        |           | N               | Alcohols, C9-11 + EO/PO     | 103818-93-5 | 9.5  |
| ROKAnol TMP5    | •       | •          |                             | •           | •          |             |           |             | •        |           | N               | Alcohols, C13-15 + 5 EO     | 157627-86-6 | 12   |
| ROKAnol TMP7    | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13-15 + 7 EO     | 157627-86-6 | 12   |
| ROKAnol TMP7R   | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C13-15 + 7 EO     | 157627-86-6 | 12   |
| ROKAnol UD3     | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C11-Iso + 3 EO    | 127036-24-2 | 8.7  |
| ROKAnol UD5     | •       | •          |                             | •           |            |             |           |             | •        |           | N               | Alcohols, C11-Iso + 5 EO    | 127036-24-2 | 11.0 |
| ROKAnol UD7     | •       | •          |                             | •           |            | •           |           |             | •        |           | N               | Alcohols, C11-Iso + 7 EO    | 127036-24-2 | 12.3 |
| ROKAfenol N7    | •       | •          |                             | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + 7 EO          | 127087-87-0 | 11.5 |
| ROKAfenol N8    | •       | •          |                             | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + 9 EO          | 127087-87-0 | 12.5 |
| ROKAfenol N8P7  | •       | •          | •                           | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + EO/PO         | 37251-69-7  | 7.7  |
| ROKAfenol N8P14 | •       | •          | •                           | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + EO/PO         | 37251-69-7  | 5.5  |
| ROKAfenol N9    | •       | •          |                             | •           | •          |             |           | •           | •        |           | N               | Nonylphenol + 9 EO          | 127087-87-0 | 12.8 |
| ROKAmin SR8     | •       |            |                             | •           |            |             | •         |             | •        |           | N               | Tallow Amine + 10 EO        | 61791-26-2  | 12.4 |
| ROKAmin SR8K    | •       |            |                             | •           |            |             | •         |             | •        |           | N               | Tallow Amine + 10 EO        | –           | 12.4 |
| ROKAmin SR8P4   |         |            | •                           | •           |            |             | •         |             | •        |           | N               | Tallow Amine + EO/PO        | –           | 8.8  |
| ROKAmin SR11    |         |            |                             | •           |            |             | •         |             |          |           | N               | Tallow Amine + 11 EO        | 61791-26-2  | 12.5 |

## Bleaching

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Ionic character | Description          | CAS        | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-----------------|----------------------|------------|------|
| ROKAmin SR22    |         |            |                             |             |            |             | •         | •           |          |           | N               | Tallow Amine + 25 EO | 61791-26-2 | 16.1 |
| ROKAmer 1000    |         | •          |                             |             |            |             |           |             |          |           | N               | PEG/PPG-Copolymer    | 9003-11-6  | –    |
| ROKAmer 1010    | •       |            |                             | •           | •          |             |           |             |          |           | N               | PEG/PPG-Copolymer    | 9003-11-6  | 16.6 |
| ROKAmer 1010/50 | •       |            |                             | •           | •          |             |           |             |          |           | N               | PEG/PPG-Copolymer    | 9003-11-6  | 16.6 |
| ROKAmer 2000    |         |            | •                           |             |            |             |           |             | •        |           | N               | PEG/PPG Copolymer    | 9003-11-6  | 2.4  |
| ROKAmer 2400    |         |            | •                           |             |            |             |           |             |          |           | N               | PEG/PPG-Copolymer    | 9003-11-6  |      |
| ROKAmer 2600    |         |            | •                           |             |            |             |           |             | •        |           | N               | PEG/PPG Copolymer    | 9003-11-6  | 5.6  |
| ROKAmer 2950    | •       | •          | •                           | •           | •          |             |           |             | •        | •         | N               | PEG/PPG-Copolymer    | 9003-11-6  | 8.1  |
| ROKAmer G3400   |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO    | 9082-00-2  | –    |
| ROKAmer G3500   |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO    | 9082-00-2  | –    |
| ROKAmer G3800   |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO    | 9082-00-2  | –    |
| ROKAmer G5000E  |         |            | •                           |             |            |             |           |             |          |           | N               | Glycerine + EO/PO    | 9082-00-2  | –    |
| ROKAmer PP450   |         |            | •                           |             |            |             |           | •           | •        |           | N               | PPG                  | 25322-69-4 | –    |
| ROKAmer PP2000  |         | •          | •                           |             |            |             |           |             |          |           | N               | PPG                  | 25322-69-4 | –    |
| ROKAmer PP4000  |         |            | •                           |             |            |             |           |             |          |           | N               | PPG                  | 25322-69-4 | –    |



## Dyeing

| Product             | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                       | CAS         | HLB  |
|---------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|-----------------------------------|-------------|------|
| ROKAfos 1013        | ●       |            |                             |             |            | ●           |           |             | ●        |           |                   | A               | POE (10) Tridecyl Ether Phosphate | 9046-01-9   | –    |
| POLIkol 200         |         |            |                             |             |            | ●           | ●         |             |          |           | ●                 | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 300         |         |            |                             |             |            | ●           | ●         |             |          | ●         | ●                 | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 400         |         |            |                             |             |            | ●           | ●         |             |          | ●         | ●                 | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 600         |         |            |                             |             |            | ●           | ●         |             |          | ●         | ●                 | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 1500        |         |            |                             |             | ●          | ●           | ●         |             |          | ●         | ●                 | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 1500 flakes |         |            |                             |             | ●          | ●           | ●         |             |          | ●         | ●                 | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 2000        |         | ●          | ●                           |             |            |             |           |             |          |           |                   | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 2000 flakes |         | ●          | ●                           |             |            |             |           |             |          |           |                   | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 6000        |         |            |                             |             |            | ●           | ●         |             |          |           |                   | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| POLIkol 6000 flakes |         |            |                             |             |            | ●           | ●         |             |          |           |                   | N               | Polyoxyethylene glycol            | 25322-68-3  | –    |
| ROKAnol GA7         | ●       | ●          | ●                           | ●           |            |             |           |             | ●        | ●         |                   | N               | Alcohols, C10 + 7 EO              | 160875-66-1 | 13.0 |
| ROKAnol GA7LA       | ●       | ●          | ●                           | ●           |            |             |           |             | ●        | ●         |                   | N               | Alcohols, C10 + EO/PO             | 166736-08-9 | –    |
| ROKAnol GA7LAW      | ●       | ●          | ●                           | ●           |            |             |           |             | ●        | ●         |                   | N               | Alcohols, C10 + EO/PO             | 166736-08-9 | –    |
| ROKAnol GA7W        | ●       | ●          | ●                           | ●           |            |             |           |             | ●        | ●         |                   | N               | Alcohols, C10 + 7 EO              | 160875-66-1 | 13.0 |
| ROKAnol GA8LA       | ●       | ●          | ●                           | ●           | ●          | ●           |           |             |          |           |                   | N               | Alcohols, C10 + 9 EO              | 160875-66-1 | 14.5 |
| ROKAnol GA9         |         | ●          | ●                           |             | ●          |             |           | ●           | ●        |           |                   | N               | Alcohols, C10 + 9 EO              | 160875-66-1 | 14.5 |
| ROKAnol GA9LA       |         | ●          | ●                           |             | ●          |             |           | ●           | ●        |           |                   | N               | Alcohols, C10 + EO/PO             | 166736-08-9 | –    |
| ROKAnol GA9W/80     |         | ●          | ●                           |             | ●          |             |           | ●           | ●        |           |                   | N               | Alcohols, C10 + 9 EO              | 160875-66-1 | –    |
| ROKAnol GT5         |         | ●          |                             |             |            | ●           |           |             |          |           |                   | N               | Alcohols, C9-16 + 5 EO            | 97043-91-9  | 10.7 |
| ROKAnol GT6         | ●       | ●          |                             | ●           |            | ●           |           |             |          |           |                   | N               | Alcohols, C9-16 + 6 EO            | 97043-91-9  | 12.0 |
| ROKAnol GT7         | ●       | ●          |                             | ●           |            | ●           |           | ●           | ●        |           |                   | N               | Alcohols, C9-16 + 7 EO            | 97043-91-9  | 12.8 |
| ROKAnol GT8         | ●       | ●          |                             | ●           | ●          | ●           |           | ●           | ●        |           |                   | N               | Alcohols, C9-16 + 8 EO            | 97043-91-9  | 13.3 |
| ROKAnol GT9         | ●       | ●          |                             |             | ●          |             | ●         | ●           | ●        |           |                   | N               | Alcohols, C9-16 + 9 EO            | 97043-91-9  | –    |
| ROKAnol GT9W        | ●       | ●          |                             |             | ●          |             |           | ●           | ●        |           |                   | N               | Alcohols, C9-16 + 9 EO            | 97043-91-9  | –    |
| ROKAnol GT10        | ●       | ●          |                             |             | ●          |             |           | ●           | ●        |           |                   | N               | Alcohols, C9-16 + 10 EO           | 97043-91-9  | –    |
| ROKAnol GT10W       | ●       | ●          |                             |             | ●          |             |           | ●           | ●        |           |                   | N               | Alcohols, C9-16 + 10 EO           | 97043-91-9  | –    |
| ROKAnol GT12        |         | ●          |                             |             | ●          |             |           | ●           |          |           |                   | N               | Alcohols, C9-16 + 12 EO           | 97043-91-9  | 15.0 |
| ROKAnol ID5         | ●       | ●          |                             |             | ●          | ●           |           |             |          |           |                   | N               | Isodecanol + 5 EO                 | 78330-20-8  | 11.7 |
| ROKAnol ID6         | ●       | ●          |                             | ●           |            |             |           |             |          |           |                   | N               | Isodecanol + 6 EO                 | 78330-20-8  | 12.4 |
| ROKAnol ID7         | ●       | ●          |                             | ●           |            |             |           |             |          |           |                   | N               | Isodecanol + 7 EO                 | 78330-20-8  | 13.2 |

## Dyeing

| Product            | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                          | CAS         | HLB  |
|--------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|--------------------------------------|-------------|------|
| ROKAnol ID8        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Isodecanol + 8 EO                    | 78330-20-8  | 13.8 |
| ROKAnol IT5        |         | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13, branched + 5 EO       | 69011-36-5  | 10.5 |
| ROKAnol IT6        | •       | •          |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C13, branched + 6 EO       | 69011-36-5  | 11.4 |
| ROKAnol IT6R       | •       | •          |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C13, branched + 6 EO       | 69011-36-5  | 11.5 |
| ROKAnol IT7        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13, branched + 7 EO       | 69011-36-5  | 12.1 |
| ROKAnol IT7W       | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13, branched + 7 EO       | 69011-36-5  | 12.1 |
| ROKAnol IT8        | •       | •          |                             | •           | •          | •           |           |             |          |           |                   | N               | Alcohols, C13, branched + 8 EO       | 69011-36-5  | 12.8 |
| ROKAnol IT9        |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 9 EO       | 69011-36-5  | 13.3 |
| ROKAnol IT9W       |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 9 EO       | 69011-36-5  | 13.3 |
| ROKAnol IT10       |         | •          |                             | •           | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 10 EO      | 69011-36-5  | 13.8 |
| ROKAnol IT12       |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 12 EO      | 69011-36-5  | 14.5 |
| ROKAnol IT12R      |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 12 EO      | 69011-36-5  | 14.5 |
| ROKAnol IT20       |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13-Iso + 20 EO            | 69011-36-5  | 15.9 |
| ROKAnol K18        |         | •          |                             | •           | •          |             |           | •           | •        |           |                   | N               | Alcohols, C16-18 unsaturated + 18 EO | 68920-66-1  | 16.3 |
| ROKAnol K21        |         | •          |                             | •           | •          |             |           |             |          |           |                   | N               | Alcohols, C16-18 unsaturated + 21 EO | 68920-66-1  | 16.5 |
| ROKAnol L4         | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + 4 EO              | 68439-50-9  | 10.0 |
| ROKAnol L4P5       | •       |            | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + EO/PO             | 68439-51-0  | 5.3  |
| ROKAnol L5A        |         | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-16 + 5 EO              | 68551-12-2  | 10.5 |
| ROKAnol L5P5       | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + EO/PO             | 68439-51-0  | 6.0  |
| ROKAnol L7         | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + 7 EO              | 68439-50-9  | 12.9 |
| ROKAnol L7A        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-16 + 7 EO              | 68551-12-2  | 12.9 |
| ROKAnol L7W        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + 7 EO              | 68439-50-9  | 12.9 |
| ROKAnol L9A        |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C12-16 + 9 EO              | –           | –    |
| ROKAnol L9AW       |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C12-16 + 9 EO              | –           | 13.3 |
| ROKAnol L10        | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + 10 EO             | 68439-50-9  | 14.1 |
| ROKAnol L10A       | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C12-16 + 10 EO             | 68551-12-2  | 14.1 |
| ROKAnol L10/80     | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + 10 EO             | 68439-50-9  | 14.1 |
| ROKAnol L80/50W    | •       | •          | •                           | •           | •          |             |           |             | •        |           |                   | N               | Alcohol, C12-14 + EO/PO              | 68439-51-0  | 17.6 |
| ROKAnol LK1        |         |            |                             | •           |            | •           |           |             |          |           |                   | N               | Alcohols, C12-14 + EO                | 68439-50-9  | 3.7  |
| ROKAnol LP2024W/95 | •       | •          | •                           | •           | •          | •           |           | •           | •        |           |                   | N               | Alcohols, C10 + EO/PO                | 37251-67-5  | 6.3  |
| ROKAnol LP100      | •       | •          | •                           |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C12-15 + EO/PO             | 120313-48-6 | –    |

## Dyeing

| Product            | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                                       | CAS         | HLB  |
|--------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|---------------------------------------------------|-------------|------|
| ROKAnol LP1319     |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Alcohols, C16-18 + EO/PO                          | 68002-96-0  | –    |
| ROKAnol LP160      |         | •          | •                           |             | •          |             |           | •           |          |           |                   | N               | Alcohols, C12-14 + PO                             | 68439-51-0  | –    |
| ROKAnol LP200      |         |            | •                           |             | •          |             |           | •           | •        |           |                   | N               | Isodecyl Alcohol + EO/PO                          | 68439-30-5  | –    |
| ROKAnol LP2023     |         |            | •                           |             | •          |             |           |             |          |           |                   | N               | Alcohols, C16-18 + EO/PO                          | 68002-96-0  | –    |
| ROKAnol LP2126     | •       |            | •                           | •           | •          |             |           | •           | •        |           |                   | N               | Alcohols, C16-18 + EO/PO                          | 68002-96-0  | –    |
| ROKAnol LP2227     | •       | •          | •                           | •           | •          |             |           | •           | •        |           |                   | N               | 2-Propylheptanol + EO/PO                          | 166736-08-9 | –    |
| ROKAnol LP2529     | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-14 + EO/PO                          | 68551-13-3  | 3.5  |
| ROKAnol LP27       | •       | •          | •                           | •           | •          |             |           | •           | •        |           |                   | N               | Alcohols, C12-14 + EO/PO                          | 68439-51-0  | 6.0  |
| ROKAnol LP3135     | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + EO/PO Isodecyl                  | 154518-36-2 | –    |
| ROKAnol LP400      | •       | •          | •                           | •           |            |             |           |             | •        | •         |                   | N               | Alcohol + EO/PO                                   | 103818-93-5 | –    |
| ROKAnol LP60       |         |            | •                           |             |            |             |           |             |          | •         |                   | N               | Alcohols, C9-11+PO                                | 68920-69-4  | –    |
| ROKAnol LP700      | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Isotridecyl Alcohol + EO/PO                       | 196823-11-7 | –    |
| ROKAnol LP911      | •       | •          | •                           |             |            |             |           |             | •        |           |                   | N               | Alcohols, C9-11+ EO/PO                            | 102782-43-4 | –    |
| ROKAnol MT5E       | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C8-18 + 5 EO                            | 157707-43-2 | –    |
| ROKAnol MT7E       | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C8-18 + 7 EO                            | 157707-43-2 | –    |
| ROKAnol NL3        | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 3 EO                            | 68439-46-3  | 8.5  |
| ROKAnol NL4        | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11+ 4 EO                             | 68439-46-3  | –    |
| ROKAnol NL5        | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 5 EO                            | 68439-46-3  | 11.6 |
| ROKAnol NL6        | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 6 EO                            | 68439-46-3  | 12.5 |
| ROKAnol NL6W       | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 6 EO                            | 68439-46-3  | –    |
| ROKAnol NL6W/95    | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 6 EO                            | 68439-46-3  | 12.5 |
| ROKAnol NL8        | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 8 EO                            | 68439-46-3  | 15.7 |
| ROKAnol NL8W       | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + 8 EO                            | 68439-46-3  | 13.8 |
| ROKAnol NL8P4      | •       | •          | •                           | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9-11 + EO/PO                           | 103818-93-5 | 9.5  |
| ROKAnol T6         |         |            |                             | •           | •          |             |           |             |          |           |                   | N               | Alcohols, C16-18 + 6 EO                           | 68439-49-6  | 10   |
| ROKAnol T12        |         |            |                             | •           | •          |             |           |             |          |           |                   | N               | Alcohols, C16-18 + 12 EO                          | 68439-49-6  | 13.5 |
| ROKAnol T18        |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Alcohols, C16-18 + 18 EO                          | 68439-49-6  | 16.3 |
| ROKAnol T18W       |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Alcohols, C16-18,<br>ethoxylated Aqueous solution | –           | –    |
| ROKAnol T20        |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Alcohols, C16-18 + 20 EO                          | 68439-49-6  | 15.3 |
| ROKAnol T20 flakes |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Alcohols, C16-18 + 20 EO                          | 68439-49-6  | 15.3 |
| ROKAnol T25        |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Alcohols, C16-18 + 25 EO                          | 68439-49-6  | 16   |

## Dyeing

| Product            | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                                  | CAS         | HLB  |
|--------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|----------------------------------------------|-------------|------|
| ROKAnol T25 flakes |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Alcohols, C16-18 + 25 EO                     | 68439-49-6  | 16   |
| ROKAnol TMP3       | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13-15 + 3 EO                      | 157627-86-6 | –    |
| ROKAnol TMP5       | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C13-15 + 5 EO                      | 157627-86-6 | 12   |
| ROKAnol TMP7       | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13-15 + 7 EO                      | 157627-86-6 | 12   |
| ROKAnol TMP7R      | •       | •          |                             |             |            |             |           |             | •        |           |                   | N               | Alcohols, C13-15 + 7 EO                      | 157627-86-6 | 12   |
| ROKAnol UD5        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C11-Iso + 5 EO                     | 127036-24-2 | 11.0 |
| ROKAnol UD7        | •       | •          |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C11-Iso + 7 EO                     | 127036-24-2 | 12.3 |
| ROKAfenol N7       | •       | •          |                             | •           | •          |             |           | •           | •        |           |                   | N               | Nonylphenol + 7 EO                           | 127087-87-0 | 11.5 |
| ROKAfenol N8       | •       | •          |                             | •           | •          |             |           | •           | •        |           |                   | N               | Nonylphenol + 9 EO                           | 127087-87-0 | 12.5 |
| ROKAfenol N8P7     | •       | •          | •                           | •           | •          |             |           | •           | •        |           |                   | N               | Nonylphenol + EO/PO                          | 37251-69-7  | 7.7  |
| ROKAfenol N8P14    | •       | •          | •                           | •           | •          |             |           | •           | •        |           |                   | N               | Nonylphenol + EO/PO                          | 37251-69-7  | 5.5  |
| ROKAfenol N9       | •       | •          |                             | •           | •          |             |           | •           | •        |           |                   | N               | Nonylphenol + 9 EO                           | 127087-87-0 | 12.8 |
| ROKAamid MRZ17     |         |            |                             | •           | •          |             |           |             |          |           |                   | N               | Glycerol Rapeate + 17 EO                     | 221045-17-6 | –    |
| ROKAamid RAD       |         |            |                             | •           | •          |             |           |             |          |           |                   | N               | C16-18 and C18- unsatd                       | 68603-38-3  | –    |
| ROKAmin K15        |         |            |                             | •           |            |             | •         |             |          |           |                   | N               | Cocamine + 15 EO                             | 61791-14-8  | 15.5 |
| ROKAmin SR5        |         |            |                             | •           |            |             | •         |             |          |           |                   | N               | Tallow Amine + 5.8 EO                        | 61791-26-2  | 9.8  |
| ROKAmin SR8        | •       |            |                             | •           |            |             | •         |             |          |           |                   | N               | Tallow Amine + 10 EO                         | 61791-26-2  | 12.4 |
| ROKAmin SR8K       | •       |            |                             | •           |            |             | •         |             |          |           |                   | N               | Tallow Amine + 10 EO                         | –           | 12.4 |
| ROKAmin SR8P4      |         |            | •                           | •           |            |             | •         |             | •        |           |                   | N               | Tallow Amine + EO/PO                         | –           | 8.8  |
| ROKAmin SR11       |         |            |                             | •           |            |             | •         |             |          |           |                   | N               | Tallow Amine + 11 EO                         | 61791-26-2  | 12.5 |
| ROKAmin SR22       |         |            |                             |             |            |             |           | •           | •        |           |                   | N               | Tallow Amine + 25 EO                         | 61791-26-2  | 16.1 |
| ROKAcet R11        |         |            |                             | •           | •          |             |           | •           |          | •         |                   | N               | Castor Oil + 11 EO                           | 61791-12-6  | –    |
| ROKAcet R26        |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Castor oil + 26 EO                           | 61791-12-6  | 11.0 |
| ROKAcet R36        |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Castor Oil + 36 EO                           | 61791-12-6  | –    |
| ROKAcet R40        |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Castor oil + 40 EO                           | 61791-12-6  | 13.0 |
| ROKAcet R70        |         |            |                             |             | •          |             |           | •           |          |           |                   | N               | Castor oil + 70 EO                           | 61791-12-6  | 15.4 |
| ROKAcet RZ17       |         |            |                             | •           | •          |             |           | •           |          |           |                   | N               | Fatty Acid Glycerol Ester,<br>C14-18 + 17 EO | 70914-02-2  | –    |
| ROKAmer 1000       |         |            | •                           |             |            |             |           |             |          |           |                   | N               | PEG/PPG-Copolymer                            | 9003-11-6   | –    |
| ROKAmer 1010       | •       |            | •                           | •           | •          |             |           |             |          |           |                   | N               | PEG/PPG-Copolymer                            | 9003-11-6   | 16.6 |
| ROKAmer 1010/50    | •       |            | •                           | •           | •          |             |           |             |          |           |                   | N               | PEG/PPG-Copolymer                            | 9003-11-6   | 16.6 |
| ROKAmer 2000       |         |            | •                           |             |            |             |           |             | •        |           |                   | N               | PEG/PPG Copolymer                            | 9003-11-6   | 2.4  |

## Dyeing

| Product        | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                           | CAS        | HLB  |
|----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|---------------------------------------|------------|------|
| ROKAmer 2100   | •       |            | •                           | •           | •          |             |           |             |          |           |                   | N               | PEG/PPG-Copolymer                     | 9003-11-6  | 3.4  |
| ROKAmer 2330   | •       |            | •                           | •           | •          |             |           |             |          |           |                   | N               | PEG/PPG-Copolymer                     | 9003-11-6  | 4.9  |
| ROKAmer 2400   |         |            | •                           |             |            |             |           |             |          |           |                   | N               | PEG/PPG-Copolymer                     | 9003-11-6  |      |
| ROKAmer 2600   |         |            | •                           |             |            |             |           |             | •        |           |                   | N               | PEG/PPG Copolymer                     | 9003-11-6  | 5.6  |
| ROKAmer 2950   | •       | •          | •                           | •           | •          |             |           |             | •        | •         |                   | N               | PEG/PPG-Copolymer                     | 9003-11-6  | 8.1  |
| ROKAmer G3400  |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Glycerine + EO/PO                     | 9082-00-2  | –    |
| ROKAmer G3500  |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Glycerine + EO/PO                     | 9082-00-2  | –    |
| ROKAmer G3800  |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Glycerine + EO/PO                     | 9082-00-2  | –    |
| ROKAmer G5000E |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Glycerine + EO/PO                     | 9082-00-2  | –    |
| ROKAmer PP450  |         |            | •                           |             |            |             |           |             | •        | •         |                   | N               | PPG                                   | 25322-69-4 | –    |
| ROKAmer PP2000 |         | •          | •                           |             |            |             |           |             |          |           |                   | N               | PPG                                   | 25322-69-4 | –    |
| ROKAmer PP4000 |         |            | •                           |             |            |             |           |             |          |           |                   | N               | PPG                                   | 25322-69-4 | –    |
| ROKwin 60      |         |            |                             | •           |            |             |           |             |          |           |                   | N               | Sorbitan Monostearate                 | 1338-43-8  | 4.7  |
| ROKwin 80      |         |            |                             | •           |            |             |           |             |          |           |                   | N               | Sorbitan Monooleate                   | 1338-43-8  | –    |
| ROKwinol 20    |         |            |                             | •           |            |             |           |             |          |           |                   | N               | Sorbitan Monooleate + 20 EO           | 9005-64-5  | 15.0 |
| ROKwinol 60    |         |            |                             | •           |            |             |           |             |          |           |                   | N               | Polyoxyethylene sorbitan monostearate | 9005-67-8  | –    |
| ROKwinol 80    |         |            |                             | •           |            |             |           |             |          |           |                   | N               | Sorbitan Monooleate + 20 EO           | 9005-65-6  | –    |



## Finishing

| Product             | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                                                                  | CAS         | HLB  |
|---------------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|------------------------------------------------------------------------------|-------------|------|
| EXOfos PA-080S      |         | •          |                             | •           |            |             |           |             |          |           |                   | A               | 2-Ethylhexanol phosphate                                                     | 12645-31-7  | –    |
| EXOfos PB-043K      |         | •          | •                           | •           |            |             | •         | •           | •        |           |                   | A               | Poly(oxy-1,2-ethanediyl),<br>α-butyl-ωhydroxy-,<br>phosphate, potassium salt | –           | –    |
| EXOfos PB-083       | •       | •          | •                           |             |            |             | •         | •           | •        |           |                   | A               | POE (3) 2-Ethylhexyl Phosphate                                               | 68439-39-4  | –    |
| EXOfos PB-138       | •       | •          |                             |             |            | •           |           | •           |          |           |                   | A               | POE (8) Tridecyl Ether Phosphate                                             | 9046-01-9   | –    |
| EXOfos PB-184       | •       | •          |                             |             |            | •           |           | •           |          |           |                   | A               | Oleyl alcohol phosphorus ester,<br>ethoxylated                               | 39464-69-2  | –    |
| POLIkol 200         |         |            |                             |             |            |             | •         | •           |          | •         | •                 | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 300         |         |            |                             |             |            |             | •         | •           |          | •         | •                 | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 400         |         |            |                             |             |            |             | •         | •           |          | •         | •                 | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 600         |         |            |                             |             |            |             | •         | •           |          | •         | •                 | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 1500        |         |            |                             |             |            | •           | •         | •           |          | •         | •                 | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 1500 flakes |         |            |                             |             |            | •           | •         | •           |          | •         | •                 | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 2000        |         | •          | •                           |             |            |             |           |             |          |           |                   | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 2000 flakes |         | •          | •                           |             |            |             |           |             |          |           |                   | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 6000        |         |            |                             |             |            |             | •         | •           |          |           |                   | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| POLIkol 6000 flakes |         |            |                             |             |            |             | •         | •           |          |           |                   | N               | Polyoxyethylene glycol                                                       | 25322-68-3  | –    |
| ROKAnol DB3         |         |            |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C12-15 + 3 EO                                                      | 68131-39-5  | 7.8  |
| ROKAnol DB5         |         |            |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C12-15 + 5 EO                                                      | 68131-39-5  | 10.5 |
| ROKAnol DB6         |         |            |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C12-15 + 5 EO                                                      | 68131-39-5  | 11.4 |
| ROKAnol DB6M        |         |            |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C12-15 + 5 EO                                                      | 68131-39-5  | 11.4 |
| ROKAnol DB7         | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-15 + 7 EO                                                      | 68131-39-5  | 12.0 |
| ROKAnol DB7R        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-15 + 7 EO                                                      | 68131-39-5  | 12.0 |
| ROKAnol DB7W        | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-15 + 7 EO                                                      | 68131-39-5  | 12.0 |
| ROKAnol DB9         | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-15 + 9 EO                                                      | 68131-39-5  | 13.2 |
| ROKAnol DB11W       | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C12-15 + 11 EO                                                     | 68131-39-5  | 13.6 |
| ROKAnol EH3         |         |            |                             | •           |            | •           |           | •           |          |           |                   | N               | Isooctanol + 3 EO                                                            | 26468-86-0  | –    |
| ROKAnol G8          |         |            |                             |             |            | •           | •         |             |          | •         |                   | N               | Glycereth-8                                                                  | 31694-55-0  | 14.0 |
| ROKAnol G12         |         |            |                             |             |            | •           | •         |             |          | •         |                   | N               | Glycereth-12                                                                 | 31694-55-0  | 17.0 |
| ROKAnol G12         |         |            |                             |             |            | •           | •         |             |          | •         |                   | N               | Glycereth-15                                                                 | 31694-55-0  | 17.5 |
| ROKAnol GA7         | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C10 + 7 EO                                                         | 160875-66-1 | 13.0 |
| ROKAnol GA7LA       | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C10 + EO/PO                                                        | 166736-08-9 | –    |

## Finishing

| Product         | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                    | CAS         | HLB  |
|-----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|--------------------------------|-------------|------|
| ROKAnol GA7LAW  | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C10 + EO/PO          | 166736–08–9 | –    |
| ROKAnol GA7W    | •       | •          | •                           | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C10 + 7 EO           | 160875–66–1 | 13.0 |
| ROKAnol GT7     | •       | •          |                             | •           |            | •           |           | •           | •        |           |                   | N               | Alcohols, C9–16 + 7 EO         | 97043–91–9  | 12.8 |
| ROKAnol GT8     | •       | •          |                             | •           | •          | •           | •         | •           | •        |           |                   | N               | Alcohols, C9–16 + 8 EO         | 97043–91–9  | 13.3 |
| ROKAnol GT9     | •       | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C9–16 + 9 EO         | 97043–91–9  | –    |
| ROKAnol GT9W    | •       | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C9–16 + 9 EO         | 97043–91–9  | –    |
| ROKAnol ID5     | •       | •          |                             |             | •          | •           |           |             |          |           |                   | N               | Isodecanol + 5 EO              | 78330–20–8  | 11.7 |
| ROKAnol ID6     | •       | •          |                             | •           |            |             |           |             |          |           |                   | N               | Isodecanol + 6 EO              | 78330–20–8  | 12.4 |
| ROKAnol ID7     | •       | •          |                             | •           |            |             |           |             |          |           |                   | N               | Isodecanol + 7 EO              | 78330–20–8  | 13.2 |
| ROKAnol IT7     | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13, branched + 7 EO | 69011–36–5  | 12.1 |
| ROKAnol IT7W    | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13, branched + 7 EO | 69011–36–5  | 12.1 |
| ROKAnol IT8     | •       | •          |                             | •           | •          | •           |           |             |          |           |                   | N               | Alcohols, C13, branched + 8 EO | 69011–36–5  | 12.8 |
| ROKAnol IT9     |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 9 EO | 69011–36–5  | 13.3 |
| ROKAnol IT9W    |         | •          |                             |             | •          |             |           | •           | •        |           |                   | N               | Alcohols, C13, branched + 9 EO | 69011–36–5  | 13.3 |
| ROKAnol LK2     |         | •          |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C12–14 + 2 EO        | 68439–50–9  | 6.2  |
| ROKAnol LK3     |         | •          |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C12–14 + 3 EO        | 68439–50–9  | 7.8  |
| ROKAnol MT5E    | •       | •          |                             | •           |            |             |           |             |          | •         |                   | N               | Alcohols, C8–18 + 5 EO         | 157707–43–2 | –    |
| ROKAnol MT7E    | •       | •          |                             | •           |            |             |           |             |          | •         |                   | N               | Alcohols, C8–18 + 7 EO         | 157707–43–2 | –    |
| ROKAnol NL4     | •       | •          |                             | •           | •          |             |           |             |          |           |                   | N               | Alcohols, C9–11 + 4 EO         | 68439–46–3  | –    |
| ROKAnol NL5     | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + 5 EO         | 68439–46–3  | 11.6 |
| ROKAnol NL6     | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + 6 EO         | 68439–46–3  | 12.5 |
| ROKAnol NL6W    | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + 6 EO         | 68439–46–3  | –    |
| ROKAnol NL6W/95 | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + 6 EO         | 68439–46–3  | 12.5 |
| ROKAnol NL8     | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + 8 EO         | 68439–46–3  | 15.7 |
| ROKAnol NL8W    | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + 8 EO         | 68439–46–3  | 13.8 |
| ROKAnol NL8P4   | •       | •          | •                           | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C9–11 + EO/PO        | 103818–93–5 | 9.5  |
| ROKAnol O3      |         | •          |                             | •           | •          |             |           |             | •        | •         |                   | N               | Oleyl Alcohol + 3 EO           | 9004–98–2   | 7.1  |
| ROKAnol O5      |         | •          |                             | •           | •          |             |           |             | •        | •         |                   | N               | Oleyl Alcohol + 5 EO           | 9004–98–2   | 9.1  |
| ROKAnol O18     |         | •          |                             | •           | •          |             |           |             | •        | •         |                   | N               | Oleyl Alcohol + 18 EO          | 9004–98–2   | 16.3 |
| ROKAnol O20     |         | •          |                             | •           | •          |             |           |             | •        | •         |                   | N               | Oleyl Alcohol + 20 EO          | 9004–98–2   | 15.3 |
| ROKAnol O100    |         | •          |                             |             | •          |             |           |             | •        |           |                   | N               | Oleyl Alcohol + 100 EO         | 9004–98–2   | 18.8 |

## Finishing

| Product        | Wetting | Degreasing | Antifoaming/<br>Low foaming | Emulsifying | Dispersing | Lubrication | Levelling | Dye removal | Cleaning | Softening | Antielectrostatic | Ionic character | Description                                                                                                | CAS         | HLB  |
|----------------|---------|------------|-----------------------------|-------------|------------|-------------|-----------|-------------|----------|-----------|-------------------|-----------------|------------------------------------------------------------------------------------------------------------|-------------|------|
| ROKAnol TMP5   | •       | •          |                             | •           | •          |             |           |             | •        |           |                   | N               | Alcohols, C13–15 + 5 EO                                                                                    | 157627–86–6 | 12   |
| ROKAnol TMP7   | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13–15 + 7 EO                                                                                    | 157627–86–6 | 12   |
| ROKAnol TMP7R  | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C13–15 + 7 EO                                                                                    | 157627–86–6 | 12   |
| ROKAnol UD5    | •       | •          |                             | •           |            |             |           |             | •        |           |                   | N               | Alcohols, C11–Iso + 5 EO                                                                                   | 127036–24–2 | 11.0 |
| ROKAnol UD7    | •       | •          |                             | •           |            | •           |           |             | •        |           |                   | N               | Alcohols, C11–Iso + 7 EO                                                                                   | 127036–24–2 | 12.3 |
| ROKAmin K15K   | •       | •          |                             | •           | •          |             | •         | •           |          | •         | •                 | C               | Cocamine + 15 EO, Methosulfate                                                                             | 68989–03–7  | –    |
| ROKAmin SRK8   | •       | •          |                             | •           | •          |             | •         | •           |          | •         | •                 | C               | Tallow Amine + 8 EO, Methosulfate                                                                          | 73138–81–5  | –    |
| ROKAcet K7     |         |            |                             | •           |            | •           |           |             |          | •         | •                 | N               | Cocoate + 7 EO                                                                                             | 61791–29–5  | 11.6 |
| ROKAcet KO300G |         |            |                             | •           |            | •           |           |             |          |           | •                 | N               | Glyceryl Cocoate + 7 EO                                                                                    | 68201–46–7  | –    |
| ROKAcet R11    |         |            |                             | •           | •          |             | •         |             |          | •         |                   | N               | Castor Oil + 11 EO                                                                                         | 61791–12–6  | –    |
| ROKAcet R26    |         |            |                             | •           | •          |             | •         |             |          | •         |                   | N               | Castor oil + 26 EO                                                                                         | 61791–12–6  | 11.0 |
| ROKAcet R36    |         |            |                             | •           | •          |             | •         |             |          | •         |                   | N               | Castor Oil + 36 EO                                                                                         | 61791–12–6  | –    |
| ROKAcet R40    |         |            |                             | •           | •          |             | •         |             |          |           | •                 | N               | Castor oil + 40 EO                                                                                         | 61791–12–6  | 13.0 |
| ROKAcet S7     |         |            |                             |             | •          |             |           |             |          | •         |                   | N               | Stearate + 7 EO                                                                                            | 9004–99–3   | 10.6 |
| ROKAcet S24    |         |            |                             |             | •          |             |           |             |          | •         |                   | N               | Stearate + 24 EO                                                                                           | 9004–99–3   | 15.8 |
| ROKAmer 2950   | •       | •          | •                           | •           | •          |             |           |             | •        | •         |                   | N               | PEG/PPG–Copolymer                                                                                          | 9003–11–6   | 8.1  |
| ROKAmer PP450  |         | •          | •                           | •           |            |             |           |             | •        | •         |                   | N               | PPG                                                                                                        | 25322–69–4  | –    |
| ROKwinol 20    |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Sorbitan Monooleate + 20 EO                                                                                | 9005–64–5   | 15.0 |
| ROKwinol 60    |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Polyoxyethylene sorbitan monostearate                                                                      | 9005–67–8   | –    |
| ROKwinol 80    |         |            | •                           |             |            |             |           |             |          |           |                   | N               | Sorbitan Monooleate + 20 EO                                                                                | 9005–65–6   | –    |
| Tequat LC90i   |         | •          |                             | •           | •          |             | •         | •           |          | •         | •                 | C               | Dihydrogenated Tallowethyl Hydroxyethylmonium Methosulfate & Ditallowethyl Hydroxyethylmonium Methosulfate | –           | –    |
| EXOdemul S11   | •       | •          | •                           | •           | •          |             |           |             |          | •         |                   | MIX             | PEG/PPG–Copolymer                                                                                          | –           | –    |
| EXOdemul WD–18 | •       | •          | •                           | •           | •          |             |           |             |          | •         |                   | MIX             | PEG/PPG–Copolymer                                                                                          | 9003–11–6   | –    |









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

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