Professional vehicle cleaning

Formulation Guide

Nouryon

Formulating high performance vehicle cleaners

Besides surfactants, there are other components in a vehicle cleaning formulation, such as builders, chelating agents and solvents. Some of the following products are used to increase the pH and buffer formulation upon the dilution:

Sodium hydroxide

A very strong base, strongly enhances grease removal. Corrosive to metals like aluminum and zinc, in excessively high concentrations it may cause damage to car wheels or other light metal car parts. Depending on type of water in the recycling plant, may interact negatively with plant parts, resulting in corrosion.

Silicates

Sodium metasilicate is one of the most common alkalis on the market. It must not be allowed to dry on glass. Formulations containing silicates need to be thoroughly rinsed. It also interacts with polyaluminum chloride (waste water flocculant), resulting in hard abrasive particles that might slowly decline the functionality of the pumps in the recycling plant.

Amines

Monoethanolamine (MEA) and triethanolamine (TEA) can be used when the two alkalis above need to be avoided. More common in household formulations, they can also be used to neutralize fatty acids to anionic surfactants.

Complexing agents are used for binding to the free metal ions in the water and thus preventing those to interfere with the surfactants. They may also enhance the cleaning effect.

EDTA

A very strong complexing agent, widely used in Central and Southern Europe, is often substituted with milder alternatives in the Nordic countries.

GLDA

A safe and readily biodegradable chelating agent, that can be used as alternative for NTA, EDTA and phosphates especially in cleaning. Largely bio-based.

IDS

With no environmental label, this complexing agent is an interesting alternative. However, it shows slightly worse properties than EDTA and NTA, and is more expensive.

Phosphates

Good dispersing agents, these complexing agents find their use in both professional and personal care products.

Citrates, gluconates

Generally considered to be very weak chelating agents, they are offer mild and environmentally friendly performance.

Formulations

Different steps in vehicle cleaning require different types of formulations. Pre-soak, shampoo and rinse aid are some of these different steps.

High pressure cleaning

One specific vehicle cleaning is high pressure or touchless cleaning. In this type of cleaning the lack of mechanical action by brushes must be compensated for by the power of the surfactant.

Water-based high pressure shampoo

Berol® ENV226 PLUS*	10%
Berol® R648 NG* or Berol® 561* (summertime for better traffic film removal)	2%
TKPP	6%
Metasilicate	2%
Water	Balance
Dilution: 1:60, 1:80	

Pre-soak

Water based 1

Berol ENV226 PLUS, Berol® 226*, Berol® EZ-1 or Berol® DGR 81	10%
TKPP	6%
Metasilicate	4%
Water	Balance
Dilution: 1:20	

Water based 2

Ethylan® 1005	4%
Berol R648 NG	4%
Dissolvine® GL-38	3%
Metasilicate	1%
NaOH	1%
Water	Balance
Dilution: 1:20	

Shampoo

Shampoo 1

Berol ENV226 PLUS	10%
TKPP	6%
Metasilicate	2%
Water	Balance
Dilution: 1:40 or 1:60	

Shampoo 2

Berol EZ-1 or Berol DGR 81	10%
TKPP	6%
Metasilicate	2%
Water	Balance
Dilution: 1:20	

Foam shampoo

Foam shampoo 1

Berol ENV226 PLUS	10%
Ampholak® YCE*	1%
TKPP	6%
Metasilicate	2%
Water	Balance
Dilution: 1:40 or 1:60	

Foam shampoo 2

Berol EZ-1 or Berol DGR 81	10%
Ampholak YCE	1%
TKPP	6%
Metasilicate	2%
Water	Balance
Dilution: 1:20	

Brush shampoo

Brush shampoo 1

Ethylan 1005	5%
Berol 260	1%
LAS	18%
IPA	18%
NaOH	4%
TEA	4%
Water	Balance
Dilution: 1:30 or 1:100	

Brush shampoo 2

Berol® 784	25%
Dissolvine® E-39	2%
IPA	7%
Water	Balance
Dilution: 1:30 or 1:100	

Truck cleaner

Truck cleaner 1 - high foam		Truck cleaner 2	
Ethylan® 1008W	4%	Berol ENV226 PLUS	12%
Berol R648 NG	2%	AG™ 6206	3%
Ampholak YCE	2%	NaOH	1%
NaOH	1-2%	Dissolvine E-39	20%
Dissolvine E-39	20%	Water	Balance
Water	Balance	Dilution: 1:40 or 1:80	
Dilution: 1:40 or 1:60			

*Some ingredients have regional availability only:
EU - Berol ENV226 PLUS, Berol R648 NG, Ampholak YCE
Non-EU - Berol 226, Berol 561

Contact us directly for detailed product information and sample request
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Nouryon is a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of more than 7,900 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our website and follow us @Nouryon and on LinkedIn.

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