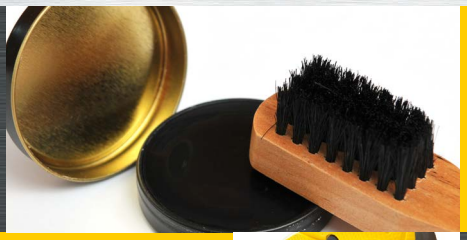
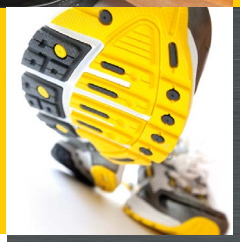
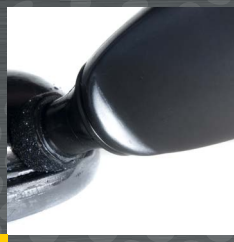
VOELPKER



Water resistant

Shoe polish, paste
Shoe polish, cream





Soft paste,
high-gloss effects

WHEN PERFORMANCE COUNTS

**Montan waxes and special wax blends for shoe polish:
Guide to suggested formulations**

2016 | 2017
INNOVATIVE THROUGH RESEARCH
Awarded by the Stifterverband
VOE6635VOE

WARADUR® E

Water-based paste, greasy – formulation guide (laboratory scale)

Paste

g	Raw material
17.5	WARADUR® E
7.5	Microcrystalline wax
6.0	Oleic acid
3.0	Triethanolamine
66.0	Demineralised water

1. Melt WARADUR® E and microcrystalline wax at 120 °C and add oleic acid.
2. Dissolve triethanolamine in water and heat the solution to approx. 90 °C.
3. Add the wax/oleic acid mixture to the solution and bring the resulting mixture to a boil (foam formation).
4. Emulsify while stirring vigorously at approx. 90 - 95 °C for about 3 minutes.
5. Let it cool down.

The hardness of the paste can be increased/adjusted by adding WARADUR® S wax.
Adding WARADUR® S also results in improved shine when polishing.

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WARADUR® E

Hydrophobic emulsion for leather – formulation guide (laboratory scale)

Emulsion

g	Raw material
10.0	WARADUR® E
10.0	Paraffin 52/54
5.0	Oleic acid
8.0	Triethanolamine
2.0	Potash
1.0	Polyvinyl alcohol, e.g. Mowiol® 4-98
75.0	Water

1. Dissolve PVA in hot demineralised water
2. Melt WARADUR® E and paraffin 52/54 at approx. 110 °C while stirring.
3. Add oleic acid and triethanolamine to the melted wax.
4. Add potash and saponify for approx. 5 minutes while stirring vigorously.
5. Add hot demineralised water containing PVA.
6. Cool down to room temperature while stirring.

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WARADUR® KME

O/W Emulsion – base formula (laboratory scale)

Emulsion

g	Raw material
12.0	WARADUR® KME
88.0	Demineralised water

1. Water is pre-heated (27 % of the whole amount) to 90 - 95 °C and 12 g WARADUR® KME wax is added while stirring.
2. Then heat while stirring for another approx. 2 - 3 minutes to emulsify the wax.
3. This pre-emulsion is added to cold water (83 % of the whole amount).
   Quickly cool to approx. 40 °C to get the final product.

Note: This is only a basic formulation. The wax concentration, temperatures and amount of stirring have to be adjusted to individual requirements and according to the equipment used.

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WARADUR® KME | VOELPKER® 6548

Instant-shine emulsion for smooth leather – formulation guide (laboratory scale)

Emulsion blend

%	Raw material
25	WARADUR® KME (25 % solids content) → page 4
75	VOELPKER® 6548 (25 % solids content) → page 13

The emulsions mentioned above are mixed without heating.

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WARADUR® OP

Producing water-based paste – formulation guide (laboratory scale)

Paste

g	Raw material
8.0	WARADUR® OP
8.0	Soft waxes, e.g. paraffin 58/60, white oil
4.0	Emulsifiers, e.g. ceteareth, i-C13 alcohol ethoxylates
80.0	Demineralised water

1. Melt WARADUR® OP, soft waxes and emulsifiers at approx. 110 °C.
2. Stir the melted wax into boiling water and emulsify at 95 - 100 °C for about 3 minutes.
3. Cool by stirring.

Filling temperature depends on the emulsifier composition:

For a filling temperature of approx. 45 °C:
2 g ceteareth (20 EO) + 2 g i-C13 alcohol ethoxylate (3 EO)

For a filling temperature of approx. 90 °C:
4 g ceteareth (6 EO)

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WARADUR® S

Producing water-based paste – formulation guide (laboratory scale)

Paste

g	Raw material
10.0	WARADUR® S
10.0	Soft waxes, e.g. paraffin 58/60, white oil (1:1)
1.5	Ozokerite
2.0	Rosin ester
3.0	Lanolin
4.0	Emulsifiers, e.g. fatty alcohol ethoxylates
0.5	KOH
69.0	Demineralised water

1. Melt WARADUR® S, soft waxes, ozokerite, rosin ester and emulsifiers at approx. 110 °C.
2. Dissolve KOH in hot (95 °C), demineralised water.
3. Stir the melted wax into the hot, demineralised water and emulsify at 95 - 100 °C for about 5 minutes while stirring.
4. While stirring, let cool and as soon as cloudiness appears (approx. at 60 °C), pour the solution into a container, e.g. a can.

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WARADUR® S

Producing instant shine shoe cream – formulation guide (laboratory scale)

Paste

g	Raw material
15.0	WARADUR® S
15.0	Soft waxes, e.g. paraffin 58/60, White Oil (1:1)
0.78	KOH
35.0	Glycerol
26.0	Demineralised water
9.0	Butylene glycol

1. Melt WARADUR® S wax and soft waxes at approx. 110 °C.
2. Dissolve KOH in hot (95°C) demineralised water.
3. Stir the hot, demineralised water into the melted wax and saponify at 95-100 °C for about 3 minutes while stirring.
4. Add glycerol and butylene glycol and stir for another 3 minutes.
5. While stirring, let cool to room temperature and pump the cream into a container, e.g. a can.

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VOELPKER® 2013

Water-based paste, greasy – formulation guide (laboratory scale)

Paste

g	Raw material
25.0	VOELPKER® 2013
6.0	Oleic acid
3.0	Triethanolamine
66.0	Demineralised water

1. Melt VOELPKER® 2013 at 120 °C and add oleic acid.
2. Dissolve triethanolamine in water and heat the solution to approx. 90 °C.
3. Add the wax/oleic acid mixture to the solution and bring the resulting mixture to a boil (foam formation).
4. Let it cool down.

The hardness of the paste can be increased/adjusted by adding WARADUR® S wax.
Adding WARADUR® S also results in improved shine when polishing.

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VOELPKER® 5622

Base paste, type OM – formulation guide (laboratory scale)

Paste

g	Raw material
6.0	VOELPKER® 5622
1.0	Ozokerite (e.g. Type Z 130, Tromm, Cologne)
6.0	Paraffin 52/54
46.0 ml	Mineral spirit (e.g. Shellsol D 60)

1. Melt VOELPKER® 5622, Ozokerite and paraffin 52/54 at 110 °C and mix well.
2. Then add 46 ml mineral spirit while stirring; let the temperature of the mixture cool down to approx. 60 °C.
3. When the temperature of the mixture has reached 48 °C, it is poured into a shoe-paste tin container.
4. Let the mixture cool down in a cool, windless place.

The temperatures (especially when filling into cans) and stirring action have to be adjusted to individual requirements and according to the equipment used.

The formulation guide described above can be modified according to the individual requirements. Typical ingredients: OP wax, beeswax, lanolin, odorous compounds, etc.

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VOELPKER® 6202

Shoe care agent, greasy – formulation guide (laboratory scale)

Paste

g	Raw material
20.0	VOELPKER® 6202
5.0	WARADUR® S
75.0	White spirit

1. Melt VOELPKER® 6202 and WARADUR® S at approx. 110 °C.
2. Heat the white spirit to approx. 80 °C and add it slowly to the melted wax.

The hardness of the paste can be increased/adjusted by adding WARADUR® S wax.
Adding WARADUR® S also results in improved shine when polishing.

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VOELPKER® 6202

Solvent-based paste – formulation guide (laboratory scale)

Paste

g	Raw material
20.0	VOELPKER® 6202
1.0	WARADUR® S
6.0	White spirit/mineral spirit (e.g. Shellsol D60)

1. Melt VOELPKER® 6202 at 110 °C.
2. Add WARADUR® S and stir.
3. Heat white spirit/mineral spirit to approx. 80 °C.
4. Add warm solvent slowly to the melted wax.
5. Cool down and stir until cloudiness appears.
6. Raise the temperature again, then cool down to the temperature approx. 5 degrees over the cloud point.
7. Then fill into cans.

The hardness of the paste can be increased/adjusted through the amount of WARADUR® S.
WARADUR® S results in improved shine when polishing.

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VOELPKER® 6548

Shoe polish instructions (laboratory scale)

Emulsion

g	Raw material
50.0	VOELPKER® 6548
150.0	Demineralised water

1. Melt VOELPKER® 6548 at approx. 120 - 130 °C
2. The molten wax is poured in a thin stream into 150 ml of water, heated up to 96 - 98 °C, while it is being stirred vigorously (1,200 rpm).
3. The speed and dimensions of the mixer should be so selected that the surface of the emulsion water forms a deep funnel into which the stream of hot wax is directed, without its hitting the side of the vessel or the mixer paddles (to avoid solid particles from forming).
4. While being stirred, the emulsion is then cooled as quickly as possible to 40 °C.
5. The emulsion thus formed (with a 25 % solid content) is beige, highly transparent and, when applied to surfaces, produces a high-gloss effect without the need for polishing.

Cream

1. At room temperature, the following ingredients are mixed by hand with a glass rod: 30 g of the emulsion based on VOELPKER® 6548, 12 g of a 25 % solution of Bremar 9180 (Robert Kraemer GmbH & Co. KG, D - Rastede) and 1 g of Colanyl black PR 130.
2. 10 g of isopropanol are added to this black solution and stirring by hand is continued until the formulation attains a creamy consistency (only a few minutes).
3. The resultant cream is black and shiny.

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VOELPKER® 6628

Soft, water-based paste as a glossy finish for shoe toecaps (with darkening effect) – formulation guide (laboratory scale)

Paste

g	Raw material
15.0	VOELPKER® 6628
5.5	Triethanolamine
79.5	Demineralised water

1. Melt VOELPKER® 6628 at 100 °C.
2. Dissolve triethanolamine in water and heat the solution to approx. 90 °C.
3. Add the wax to the solution and bring the resulting mixture to a boil (foam formation).
4. Let it cool down.

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VOELPKER® 8015

Liquid crystal oil in water – formulation guide (laboratory scale)

Soft paste

Phase A

g	Raw material
3.0	Span 60 (Croda)
50.0	Crystal oil 60

Phase B

g	Raw material
5.0	VOELPKER® 8015
5.0	Emulan® OC (BASF)
30.0	Demineralised water

Preparation method:

Phase A is stirred continuously and pre-heated to approx. 85 °C.

Phase B is first heated to the boiling point. Then maintain a temperature in the 95 - 100 °C range for about 1 minute while stirring the pre-emulsion. Then cool down to approx. 90 °C and slowly add phase B to phase A. Stir continuously for about 1 minute and cool to approx. 40 °C.

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