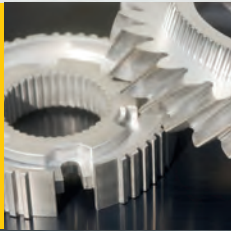
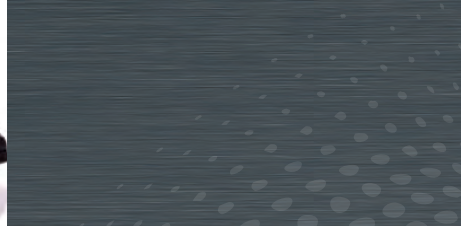




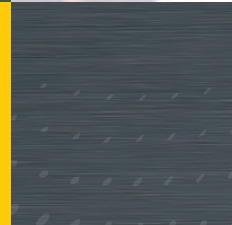
**Corrosion
Protection**



Polishes



**Release
agents**



VOELPKER® 6211



VOELPKER® 6211

Characterization

VOELPKER® 6211 is a high-melting, hard special wax. It is used as a wax dispersion for solvent-based polishes, for anti-corrosion films and various polishes as well as for mould release agents.

Delivery specification

Acid value	10 – 14 mg KOH/g
Saponification value	17 – 25 mg KOH/g
Drop point	104 – 112 °C
Colour	almost white, ivory-coloured
Physical form	flakes or pastilles
Packing	paper bag

Typical data and properties

Solidification point	93 – 99 °C
Viscosity	90 – 120 mPas; 120 °C
Density	< 1 g/cm ³
Penetration value	approx. 4 dmm

Solubility

VOELPKER® 6211 is insoluble or only very sparingly soluble in all conventional organic solvents at room temperature. It is soluble at elevated temperatures in aliphatic, aromatic and chlorinated hydrocarbons and most other solvents that are not too polar.

The following table shows the temperature at which VOELPKER® 6211 form a clear 10 % solution in selected solvents (clear point). The cloud point is the temperature at which dissolved solids are no longer completely soluble, precipitating as a second phase giving the fluid a cloudy appearance.

Solvent	Clear point [°C]	Cloud point [°C]
Petrol 100/140°C	approx. 76	approx. 71
White mineral spirits 140/200 °C	approx. 79	approx. 72
Toluene	approx. 73	approx. 66
Shellsol A	approx. 75	approx. 66

Compatibility

VOELPKER® 6211 can be blended with many other type of waxes like paraffin, microcrystalline wax, polyethylene wax and ester wax (e.g. montan-, carnauba-, beeswax) simply by melting and stirring them together.



APPLICATION

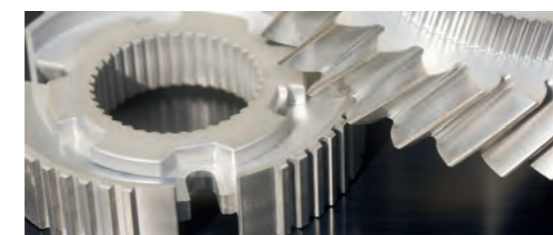
General

Depending from the concentration, clear solutions of VOELPKER® 6211 in hot organic solvents crystallize to form very finely divided liquid dispersions, gels or pastes when the heated solution is cooled under stirring. The received wax preparations have a very slightly solvent retention when the wax dispersion is dried. On a surface they form very dense, buffable films.

To manufacture the wax pastes, VOELPKER® 6211 alone or with other waxes and components are blended together at approx. 110 °C. The solvent, which can also contain dissolved silicon oil and other substances, is then added; at this stage, a clear solution must be produced. The tem-

perature during the mixing process should be in the region of 75 – 80 °C. In the manufacture of fine and low-viscosity wax dispersions (e.g. for floor polish) with VOELPKER® 6211 it is important to cool down the clear solution of the wax in the solvent as quickly as possible whilst stirring vigorously (water cooling). A further improvement in the fineness of the particles is provided by subsequent brief homogenisation with a high-speed stirrer (e.g. Ultra-Turrax).

To obtain fine, softer creamier pastes or gels, the mixture is cooled down, until clouding clearly starts to occur (pouring temperature) and is poured out, e.g. into tins.





Corrosion protecting films

The a.m. films are impermeable to air, corrosive gases, water, salt solutions, acids, alkalis, coolant and other aggressive substances. These films are therefore very good for protecting metal surfaces from corrosion, e.g. during transportation by sea or during storage of new tools, machinery and motors, to preserve the coated surface of new motor vehicles, refrigerators, washing machines etc. and for car underbody protection. VOELPKER® 6211 is also used as stop-off wax, e.g. in galvano applications.

Modifications of the formed films can be obtained with combinations of VOELPKER® 6211 and paraffin wax or microcrystalline wax because of the very strong dispersing action of VOELPKER® 6211 with other waxes.

Other components like montan waxes, silicon oil, resins, bitumen, metal stearates and corrosion inhibitors can be added in order to obtain specific film properties.

Because of the high dropping point of VOELPKER® 6211, these anti-corrosion films can even be used at working temperatures of up to

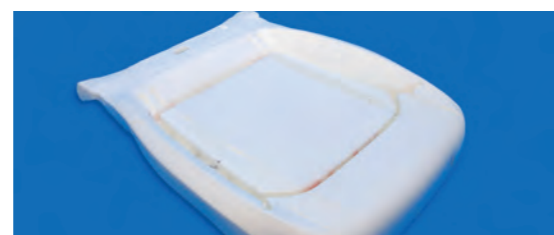
90 °C, depending on the composition of the wax blends. The wax films can be removed easily and completely with cold cleaning agents based on organic solvents (aliphatic hydrocarbons) and surfactants. Steam jet cleaning also works very well.

Polishes

Very finely divided, liquid wax dispersions can be prepared that dry to form a very glossy and dense, easy to polish film. This is very important for polishes applied to floors and car bodywork or other substrates (other tin surfaces, furniture, parquet-ry), which requires a good film formation.

Release agents

Dispersions of VOELPKER® 6211 can be used in injection moulding as a mould release agent for thermosets, e.g. polyurethane and plastics (polyester). The consistency of the wax paste can be controlled by adjusting the proportion of VOELPKER® 6211 and the different waxes employed or by adjusting the total wax content.



BASE FORMULATIONS

Base formulations for the most important applications are suggested in the following tables (1 – 5). Partly they are tested successfully in practice and partly successfully in the laboratory and should inspire for further developments.

Formulation no	1	2	3
Application	Protection from corrosion and protection of motor vehicles	Protection from corrosion and protection of motor vehicles	Protection of motor vehicles and base coat for cavity protection coatings with anti-corrosion effect
Solid content in % w/w	11	9	11
Components	(All figures in % w/w)		
VOELPKER® 6211	4.0	3.0	5.0
Hard microcrystalline wax Fp = 85 – 92 °C	1.0	-	4.0
Soft microcrystalline wax Fp = 65 – 72 °C	3.0	3.0	-
Paraffin wax 52/54 °C	-	3.0	-
Paraffin wax 56/58 °C	3.0	-	-
Paraffin wax 60/62 °C	-	-	1.0
Mg stearate	-	-	1.0
Petrol 100/140 °C	89.0	-	89.0
White spirit 140/200 °C	-	91.0	-

Table 1: Anti-corrosion dispersions

Formulation no	4	5	6
Application	Car underbody protection	Car underbody protection	Protection from corrosion
Solid content in % w/w	15	30	8
Components	(All figures in % w/w)		
VOELPKER® 6211	9.0	8.0	3.0
Hard microcrystalline wax Fp = 85 – 92 °C	-	-	0.8
Soft microcrystalline wax Fp = 65 – 72 °C	-	-	2.1
Paraffin wax 60/62 °C	-	-	2.1
Bitumen 70/100 ("B 80")	-	18.0	-
Laropal K 80	6.0	4.0	-
Sepacorr AP (corrosion inhibitor)	0.05	-	-
Petrol 100/140 °C	-	25.0	-
White spirit 140/200 °C	85.0	45.0	92.0

Table 2: Anti-corrosion dispersions



Formulation no	7	8	9	10
Physical form	Liquid	Liquid	Liquid	Soft paste for tube packaging
Solid content in % w/w	12	12	15	27
Components	(All figures in % w/w)			
VOELPKER® 6211	3.5	6.0	4.0	1.5
WARADUR® E	-	-	-	0.5
Luwax A	-	-	-	4.5
Hard microcrystalline wax Fp = 85 – 92 °C	2.0	-	3.0	3.0
Soft microcrystalline wax Fp = 65 – 72 °C	2.0	-	-	-
Paraffin wax 52/54 °C	4.5	6.0	8.0	17.5
White spirit 140/200 °C	88.0	88.0	85.0	73.0

Table 3: Liquid floor polishes

Formulation no	11	12	13	14
Application	Car	Car	Furniture and parquetry	Shoe
Physical form	Liquid	Liquid	Liquid	Soft paste for tubes
Solid content in % w/w	7	29	7	23
Components	(All figures in % w/w)			
VOELPKER® 6211	3.8	2.0	2.0	1.0
WARADUR® OP	-	-	-	2.0
WARADUR® E	-	0.5	-	-
Luwax A	-	4.5	-	4.0
Hard microcrystalline wax Fp = 85 – 92 °C	-	3.0	0.5	-
Soft microcrystalline wax Fp = 65 – 72 °C	-	-	1.5	2.0
Paraffin wax 52/54 °C	-	17.0	1.5	14.0
Silicon oil 350 mm ² /s	0.6	2.0	-	-
Wacker silicon paste P 8	-	-	1.5	-
Dow Corning Fluid 530	0.4	-	-	-
Dow Corning Fluid 531	2.2	-	-	-
Petrol 100/140 °C	63.0	-	43.0	-
White spirit 140/200 °C	30.0	71.0	50.0	77.0

Table 4: Polishes

Formulation no	15	16	17	18
Physical form	Highly liquid	Highly liquid	Soft paste	Hard paste
Solid content in % w/w	5	10	30	30
Components	(All figures in % w/w)			
VOELPKER® 6211	2.0	4.0	5.0	10.0
Hard microcrystalline wax Fp = 85 – 92 °C	-	-	5.0	10.0
Soft microcrystalline wax Fp = 65 – 72 °C	1.0	2.0	-	-
Paraffin wax 52/54 °C	1.5	3.0	20.0	-
Paraffin wax 60/62 °C	-	-	-	10.0
Silicon oil 350 mm ² /s	0.5	1.0	-	-
Petrol 100/140 °C	50.0	50.0	-	-
White spirit 140/200 °C	45.0	40.0	70.0	70.0

Table 5: Polishes

VOELPKER® 6211 Product Information

Product Description

VOELPKER® 6211 is a special wax blend based on polymer waxes, hydrocarbon waxes and stearates.

General Advantages

Depending from the concentration, clear solutions of VOELPKER® 6211 in hot organic solvents crystallize to form very finely divided liquid dispersions, gels or pastes when the heated solution is cooled under stirring. The received wax preparations have a very slightly solvent retention when the wax dispersion is dried. On a surface they form very dense, buffable films.

Examples of Use

- VOELPKER® 6211 films are impermeable to air, corrosive gases, water, salt solutions, acids, alkalis, coolants and other aggressive substances. These films are therefore very good for protecting metal surfaces from corrosion, e.g. during transportation by sea or during storage of new tools, machinery and motors to preserve the coated surface of new motor vehicles, refrigerators, washing machines etc. and for car underbody protection. VOELPKER® 6211 is also used as stop-off wax, e.g. in galvanne applications.
- Very finely divided, liquid wax dispersions can be prepared that dry to form a very glossy and dense, easy to polish film. This is very important for polishes applied to floors and car bodywork or other substrates (other tin surfaces, furniture, parquetry), which requires a good film formation.
- Dispersions of VOELPKER® 6211 can be used in injection moulding as a mould release agent for thermosets, e.g. polyurethanes.
- The consistency of the wax dispersion can be adjusted from liquid to pasty by choosing the adequate proportion and concentration of VOELPKER® 6211 and if necessary other additional waxes.
- Technical information brochure available upon request.

Delivery Specifications *

Characteristics	Unit	Target value	Method
Acid value *	mg KOH/g	10 – 14	ISO 2114
Saponification value *	mg KOH/g	17 – 25	ISO 3681
Drop point *	°C	104 – 112	ASTM 3954
Colour	-	off-white	AA 3.2.1.505
Viscosity @ 120 °C	mPas	90 – 120	AA 3.2.1.520
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Pastilles
Packaging	Paper bag or Big Bag
Storage	Store at ambient temperature on a dry place. Protect from heat/overheating and direct sunlight. The minimum remaining period is 1.5 years and is defined as the minimum shelf life at the customer. Thereafter, tests of the chemical characteristics are recommended. The maximum shelf life of 5 years is indicated.

Safety

VOELPKER® 6211 is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings.

For more information, consult SDS.

Delivery Time and Availability

Standard delivery time: 2 – 3 weeks. Preconditions can be met for achieving shorter delivery times on standard products when demanded by the market.

Remark: Voelpker's R&D department is permanently developing new special wax blends for the preparation of solvent-based dispersions. Please contact us for your individual requirements.

Legislation

Food contact legislation:

- Product for technical applications

Other legislation:

- RoHS and CONEG compliant
- Ingredients listed in all relevant National Inventories

For further information, please contact mailbox@voelpker.com.

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Safety

See information and advices given in the Safety Data Sheet.

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