

CEVO[®]-protect O-6211



Corrosion protection



Mold release



Dispersing



Viscosity-regulating

WAX ADDITIVE FOR SOLVENT-BORNE DISPERSIONS



CEVO®-protect O-6211

Characterisation

CEVO®-protect O-6211 is a high-melting, hard special wax. It is used as a wax dispersion for solvent-based polishes and coatings.

Typical data and properties			
Acid value *	10 – 14 mg KOH/g	Saponification value *	17 – 25 mg KOH/g
Drop point *	104 – 112 °C	Solidification point	93 – 99 °C
Colour	almost white, ivory-coloured	Viscosity	90 – 120 mPas; 120 °C
Physical form	flakes or pastilles	Density	< 1 g/cm ³
Packing	paper bag	Penetration value	approx. 4 dmm

* Delivery specification

Solubility

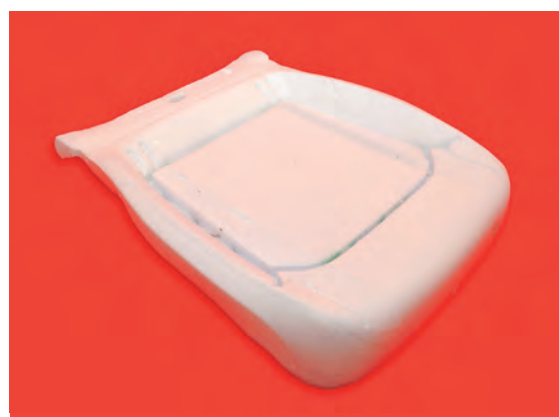
CEVO®-protect O-6211 is insoluble or only very sparingly soluble in all conventional organic solvents at room temperature. It is soluble at elevated temperatures in aliphatic, aromatic and chlorinated hydrocarbons and most other solvents that are not too polar. The following table shows

the temperature at which CEVO®-protect O-6211 forms 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 spirit 140/200 °C	approx. 79	approx. 72
Toluene	approx. 73	approx. 66
Shellsol A	approx. 75	approx. 66

Compatibility

CEVO®-protect O-6211 can be blended with many other types 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 CEVO®-protect O-6211 in hot organic solvents crystallise 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.

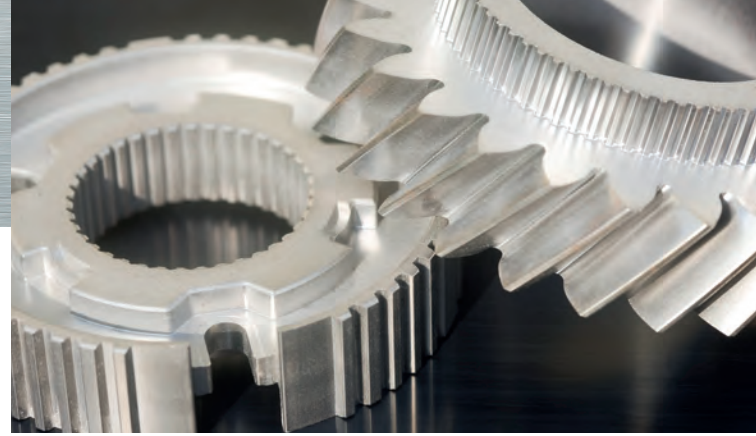
To manufacture the wax pastes, CEVO®-protect O-6211 alone or with other waxes and components are blended together at approx. 110 °C. The solvent, which can also contain dissolved silicon oil and other substances, is then added; at this stage, a clear solution must be produced.

The temperature 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 CEVO®-protect O-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. CEVO®-protect O-6211 is also used as stop-off wax, e.g. in galvanne applications.

Modifications of the formed films can be obtained with combinations of CEVO®-protect O-6211 and paraffin wax or microcrystalline wax because of the very strong dispersing action of CEVO®-protect O-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 CEVO®-protect O-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 film 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.

Release agents

Dispersions of CEVO®-protect O-6211 can be used in injection moulding as a mould release coating in the processing of thermosets, e.g. polyurethane and plastics (polyester). The consistency of the wax paste can be controlled by adjusting the proportion of CEVO®-protect O-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 – 3). Partly they are tested successfully in practice and partly successfully in the laboratory and should inspire for further developments.



BASE FORMULATIONS

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)	(All figures in % w/w)	(All figures in % w/w)
CEVO®-protect O-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)	(All figures in % w/w)	(All figures in % w/w)
CEVO®-protect O-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 81	6.0	4.0	-
Corrosion inhibitor (e.g. Sodium sulfonates)	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	Highly liquid	Highly liquid	Soft paste	Hard paste
Solid content in % w/w	5	10	30	30
Components	(All figures in % w/w)	(All figures in % w/w)	(All figures in % w/w)	(All figures in % w/w)
CEVO®-protect O-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 3: Formulations with different consistencies for release agents and various other applications

PRODUCT INFORMATION

CEVO®-protect O-6211

Product Description

CEVO®-protect O-6211 is a special wax blend, based on polymer waxes, hydrocarbon waxes and stearates.

General Advantages

Depending from the concentration, clear solutions of CEVO®-protect O-6211 in hot organic solvents crystallise 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

- CEVO®-protect O-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. CEVO®-protect O-6211 is also used as stop-off wax, e.g. in galvano 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 surfaces, furniture, parquet), which require a good film formation.
- Dispersions of CEVO®-protect O-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 CEVO®-protect O-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

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 maximum shelf life is 5 years after production. Thereafter, tests of the chemical characteristics are recommended. After delivery, a minimum remaining shelf life at the customer of 1.5 years is warranted.

Safety

CEVO®-protect O-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 (tailor-made) special wax blends for coating applications. Please contact us for your individual requirements.

Legislation

Food contact legislation:

- Product for technical applications

Other legislation:

- REACH compliant; all components registered or exempt (polymers, salts of fatty acids)
- RoHS and CONEG compliant
- Ingredients listed in all relevant national inventories

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

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Issued: 2019-04-17, supersedes all previous editions

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Design: www.artfaktor.de

2nd edition | March 2020



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