

CEVO® WAX ADDITIVES



Higher tensile
strength /
impact strength



Proper
dispersion



Flow
improvement



Reduced
ejection force

IMPROVE YOUR PLASTIC PRODUCTION

 **CEVO®**

CEVO®-process A-3100 | CEVO®-process A-3110

CEVO®-process J-3400 | CEVO®-process J-4055

CEVO®-process J-4418 | CEVO®-stab B-5200 | CEVO®-stab F-5510

CEVO® – SPECIALLY DEVELOPED FOR YOU

What began as a service for our customers has, over time, become a passion: additives developed by our chemists and experts that are perfectly suited to the required application. With the CEVO® products, the innovation potential of specialised waxes can be fully exploited. In particular, CEVO® additives can be used to solve processing- and application-related issues. For example, when it comes to good distribution of the material used, fast injection, filling long flow paths, the avoidance of friction peaks, fast demoulding, or the process stabilisation of the compound to be produced. This is how we help you to continue to improve your product performance and keep pace with technical progress.



CASE STUDIES

CEVO®-process A-3110

Stable quality of recyclates

A compounder using re-milled and agglomerate-based polyamide for the production of polyamide compounds was not able to improve and stabilise the quality of his product. The quality of such polyamide compounds is normally more volatile than that of virgin based compounds. The reasons for this are primarily the

degradation induced in the used polyamides initiated by thermal preloads and processing-related inhomogeneities of the recycled material. The use of CEVO®-process A-3110 enabled the production of compounds with low variation in mechanical characteristics and consistent processing properties.



CEVO®-process J-4418

Reaching the required effectivity

A microtalc filled PA6 compound showed ineffective processing behaviour in injection moulding. The customer replaced the incorporated, insufficiently performing wax additive with our biobased 0.5% CEVO®-process J-4418. The flow behaviour was improved by 15 % and both, ejection force and the cycle time were reduced by > 40%.



CEVO®-process J-3400

Passed odour standard

With 20% glass fibre reinforced polycarbonate did not pass the odour test according to VW standard PV 3900. The requirement could be met by a 1:1 replacement of the process aid PETS by CEVO®-process J-3400, without the characteristic properties of the compound being adversely affected.



CEVO®-process A-3100

Cost reduction / Improved performance

A compounder of glass fibre reinforced and impact modified polyamide compounds was able to improve mould filling of his product by 45 % (spiral flow test) using 0.5 % of CEVO®-process A-3100 instead of zinc stearate. The additive further improved the surface quality of the injection moulded parts produced.



CEVO®-process J-4055

Improved pigment dispersion

A compounder's high melt viscosity PC/ABS compound could not be evenly coloured. The pigment mixture itself was not allowed to be changed. 0.5% CEVO®-process J-4055 eliminated this problem.



CEVO®-stab F-5510

Elimination of free formaldehyde from POM-Copo recycle

In the processing of polyacetal waste based on copolymers (POM Copolymer) a customer determined the formation of free formaldehyde. It was found that the problem continued with the further processing of the POM recycle. The reason for this was the fact that the material had already been thermally pre-stressed in its processing history. This resulted in blistering during injection moulding and various other processing issues.



Compounding with 0.4% CEVO®-stab F-5510 completely eliminated the processing problems. CEVO®-stab F-5510 also reduced the typical odour of freshly moulded plastic parts based on POM by acting as a formaldehyde scavenger.

CEVO®-stab B-5200

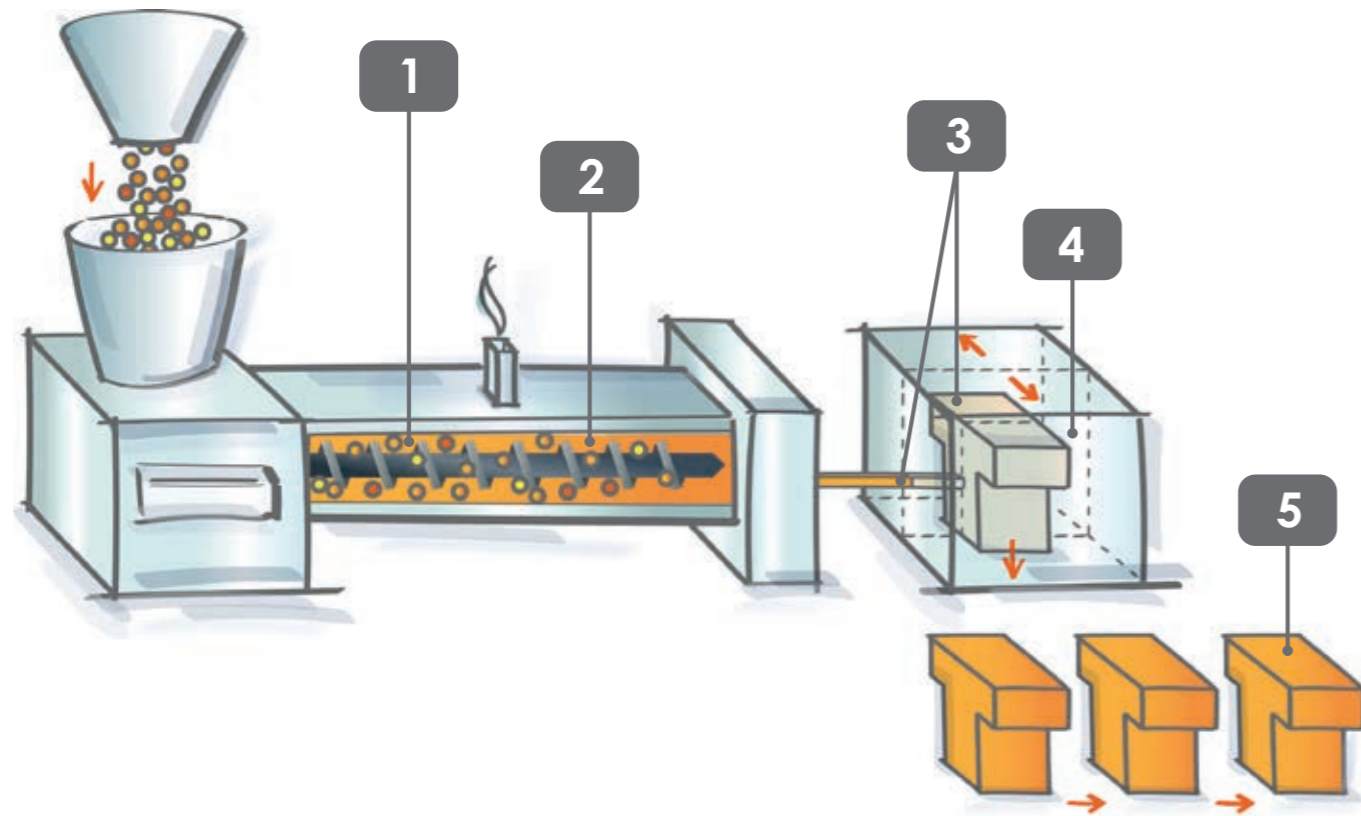
Improved quality of recycled PP

PP compounds resulting from the recycling of industrial waste are prone to degradation. The reason for this is the fact that the material has already been thermally stressed during its processing history. In addition, processing-related inhomogeneities lead to a strongly fluctuating property profile of such compounds. A compounder stabilised his compound for further

processing with 0.5 % CEVO®-stab B-5200. This improved the surface quality of the manufactured components. In addition, an effective distribution of fillers and reinforcing agents has been effected. Surface defects caused by the regrinds used were eliminated and the lifetime of the components significantly increased.

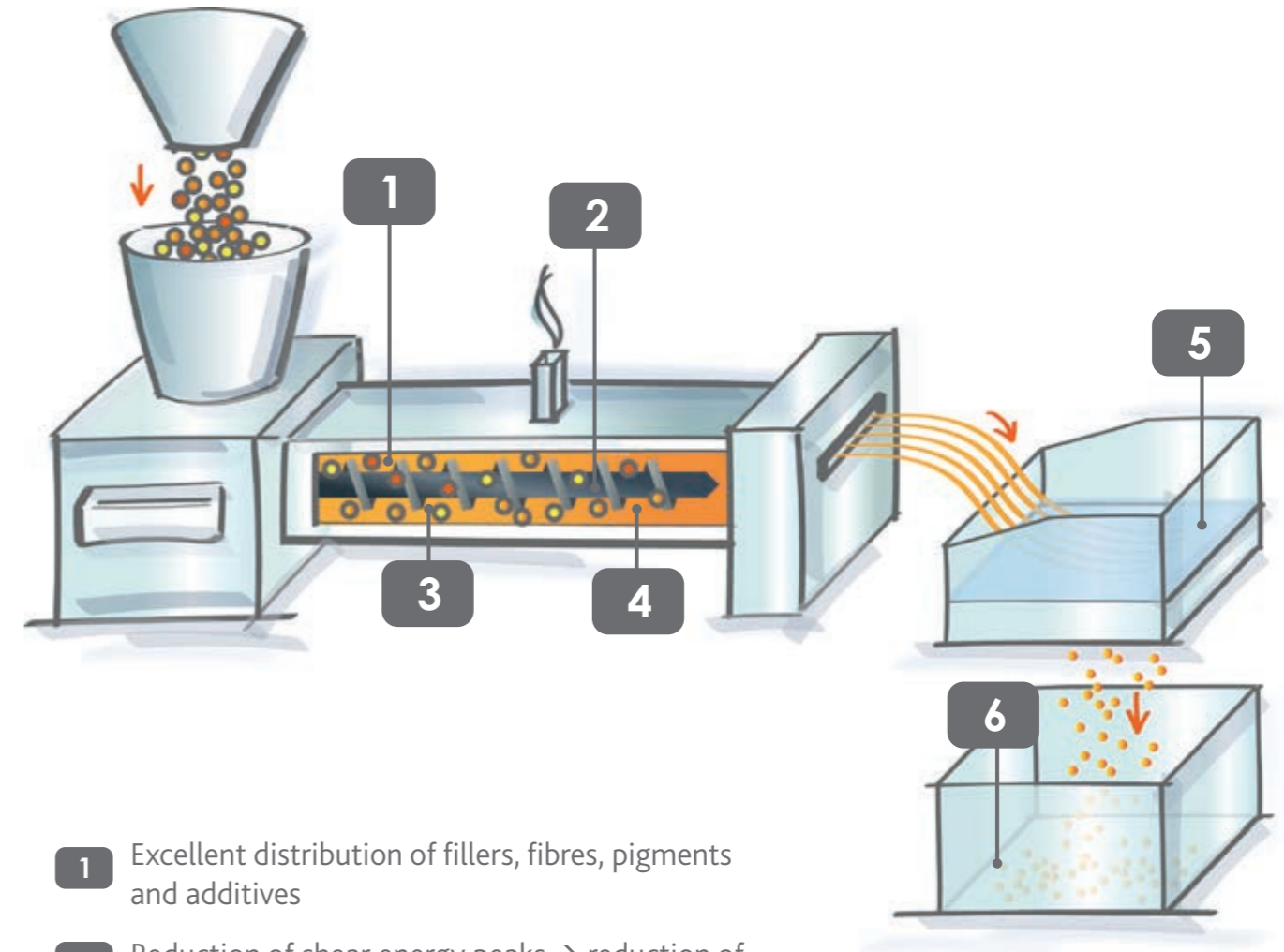


Positive effects of VOELPKER® wax additives in the production of extruded / injection moulded parts



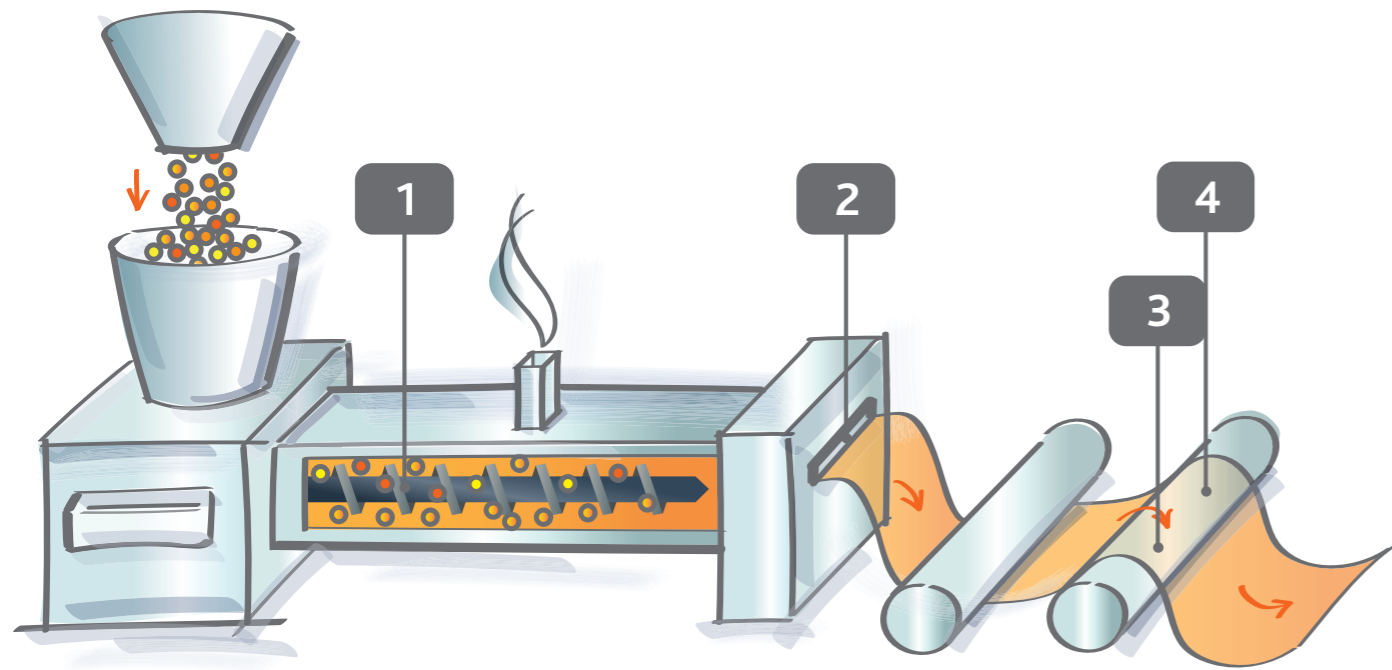
- 1 Excellent distribution of used additives, pigments and fillers
- 2 Stabilisation of the compound against stress during processing
- 3 Reduction of melt viscosity → realisation of long flow paths, lower injection time
- 4 Reduction of adhesive forces between part and mould surface → quicker demoulding → shorter cycle times
- 5 Improved surface on the final product

Positive effects of VOELPKER® wax additives in the production of compounds



- 1 Excellent distribution of fillers, fibres, pigments and additives
- 2 Reduction of shear energy peaks → reduction of thermo-oxidative degradation of the melt
- 3 Stabilisation of the compound against stress during processing
- 4 For glass fibre-filled systems: lowered melt viscosity and partial coating of the glass fibres → better alignment of the glass fibres and thus significantly fewer surface defects resulting from extruding glass fibres (smoother surfaces)
- 5 In underwater pelletising, our products can prevent TPU regranulate from clumping together
- 6 Improved surface quality of granules, in some cases reduction of drying time of granules

Positive effects of VOELPKER® wax additives in the production of calendered sheet/flat film



- 1 Stabilisation of compound against stress during processing/good distribution of used additives, pigments and fillers
- 2 Reduction of deposit formation by reducing melt viscosity and stabilising the process (very few decomposition products, reduced drool formation)
- 3 Prevention of adhesion of the film to roller surfaces
- 4 Wiping the rollers with a wipe impregnated with montan wax cleans the rollers and prevents adhesion

PRODUCT INFORMATION

CEVO®-process A-3100

Product Description

CEVO®-process A-3100 is a processing auxiliary and it includes a synergistic combination of different lubricating, release- and dispersing agents.

General Advantages

The mixture was engineered especially for the application in polyamides.

Examples of Use

By the addition to the most different formulations long flow paths can be realized and injected parts themselves can be faster ejected. The use in filled or reinforced compounds improves, for example, the homogeneity of the fibre glass distribution, reduces the polyamide degradation and leads to an improved surface quality. In addition, damages by friction peaks can be avoided in sensitive formulations. We recommend to add amounts of 0.3 – 0.7 %.

Delivery Specifications *

Characteristics	Unit	Target value	Method
Drop point *	°C	> 140	ASTM 3954
Colour	–	pale yellow	AA 3.2.1.505
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Powder
Packaging	Paper 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®-process A-3100 is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings.

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.

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 application@voelpker.com.

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PRODUCT INFORMATION

CEVO®-process J-3400

Product Description

CEVO®-process J-3400 is a processing auxiliary and it includes a synergistic combination of different lubricating, release- and dispersing agents.

General Advantages

The mixture was engineered especially for the application in polymers or polymer blends with high melt viscosities (PS, ABS, PLA, PC, POM, ...).

Examples of Use

By the addition to the most different formulations injected parts themselves can be faster ejected. The use in mineral filled, glass fibre reinforced and/or pigmented compounds improves the homogeneity of the filler and/or pigment distribution, reduces damages by friction peaks and leads to an improved surface quality. We recommend to add amounts of 0.3 – 0.5 %.

Delivery Specifications *

Characteristics	Unit	Target value	Method
Drop point *	°C	> 80	ASTM 3954
Colour	–	pale yellow	AA 3.2.1.505
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Powder
Packaging	Paper 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®-process J-3400 is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings.

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.

Legislation

- Food contact legislation:
- Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food
- Other legislation:
- RoHS and CONEG compliant

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

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PRODUCT INFORMATION

CEVO®-process J-4055

Product Description

CEVO®-process J-4055 is a special wax blend, based chiefly on multifunctional fatty acid esters.

General Advantages

Improves filler dispersion and the flow properties and release during processing. Low volatility.

Examples of Use

Effective lubricant and dispersing agent in transparent engineering plastics such as PET/PBT and in reinforced polypropylene (PP); lubricant, release agent and dispersing agent in polystyrene (PS), polyoxymethylene (POM) and nylon (PA, PA6, PA66); external lubricant for rigid PVC profiles; lubricant, release agent, slip agent and anti-fog agent in thermoplastic polyurethane (TPU), lubricant and anti-blocking agent in polymethylmethacrylate (PMMA).

Delivery Specifications *

Characteristics	Unit	Target value	Method
Acid value *	mg KOH/g	0 – 5	ISO 2114
Drop point *	°C	75 – 85	ASTM 3954
Colour	–	white – off-white	AA 3.2.1.505
Viscosity @ 120 °C	mPas	approx. 5 – 20	AA 3.2.1.520

Packaging and Handling

Physical form	Pastilles or flakes
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®-process J-4055 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 mould release applications. Please contact us for your individual requirements.

Legislation

- Food contact legislation:
- Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food

- Other legislation:
- REACH, RoHS and CONEG compliant
 - Ingredients listed in all relevant national inventories

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

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PRODUCT INFORMATION

CEVO®-process J-4418

Product Description

CEVO®-process J-4418 is a patented organic ester wax, based on renewable plant waxes. It combines in an ideal manner the characteristics of a multi-purpose plastics additive with the call for bio-based raw materials. It is therefore also perfectly suitable for thermoplastic polymers, that are derived from renewable resources. In CEVO®-process J-4418 natural long-chain fatty acids (mainly C19 – C32) have been modified by an innovative technology to give a bio-based polymer additive that meets the highest standards in the polymer industry.

General Advantages

High effectiveness at low concentrations: CEVO®-process J-4418 reveals a wide effect spectrum: it is extremely versatile and suitable for a wide range of plastics applications as a multi-purpose additive, e.g. release agent, flow improver, dispersing agent, gloss booster, surface improver CEVO®-process J-4418 is suitable for engineering plastics (also, for example PLA), thermosets, PVC, etc.

Examples of Use

- Thermoplastics: PLA, PA, PBT, TPE, PC, PVC, styrenics
- Thermosets: epoxy resins, phenolic resins, polyurethane
- Dispersing agents for colour masterbatches and filled plastics (talc, glass fibre)

Delivery Specifications *

Characteristics	Unit	Target value	Method
Acid value *	mg KOH/g	12 – 25	ISO 2114
Drop point *	°C	83 – 90	ASTM 3954
Colour	–	pale yellow	AA 3.2.1.505

Packaging and Handling

Physical form	Flakes or powder
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®-process J-4418
- is made from a renewable biological source
 - reached the criteria for inherent biodegradability (OECD Guideline 301 D, Closed Bottle Test)
 - is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings

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.

Legislation

- Food contact legislation:
- Product for technical applications
- Other legislation:
- DIN certified as bio-based (> 85 %)
 - REACH, RoHS and CONEG compliant
 - TSCA (USA) and DSL (Canada): listed

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

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PRODUCT INFORMATION

CEVO®-process A-3110

Product Description

CEVO®-process A-3110 is a special one pack and it includes a synergistic combination of different lubricating agents as well as a balanced mixture of stabilisers.

General Advantages

The mixture was engineered especially for the application in polyamides.

Examples of Use

By the addition to the formulations the degradation of polymer during extrusion process will be reduced and the flow characteristic will be enhanced. The package improves the homogeneity of filler distribution and leads to an increased surface quality. Excellent for use in recycling PA. We recommend to add amounts of 0.5 – 0.8 %.

Delivery Specifications *

Characteristics	Unit	Target value	Method
Melting point *	°C	> 180	ASTM 3954
Colour	–	white	AA 3.2.1.505
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Powder
Packaging	Paper 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®-process A-3110 is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings.

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.

Legislation

- Product for technical applications.
- RoHS and CONEG compliant
 - Ingredients listed in all relevant national inventories

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

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PRODUCT INFORMATION

CEVO®-stab B-5200

Product Description

CEVO®-stab B-5200 is a one pack and it includes a synergistic combination of different lubricating and dispersing agents as well as a balanced mixture of diverse stabilisers and co-stabilisers.

General Advantages

The mixture was engineered especially for the use in polyolefine compounds based on recycled polyolefines.

Examples of Use

The package improves the homogeneity of the filler distribution, reduces degradation by friction peaks and leads to an improved surface quality and increases the thermo-oxidative stability of produced compound.
We recommend to add amounts of 0.5 %.

Delivery Specifications *

Characteristics	Unit	Target value	Method
Melting point *	°C	> 120	ASTM 3954
Colour	–	white	AA 3.2.1.505
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Powder
Packaging	Paper 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®-stab B-5200 is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings.

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.

Legislation

Product for technical applications.

- RoHS and CONEG compliant
- Ingredients listed in all relevant national inventories

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

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PRODUCT INFORMATION

CEVO®-stab F-5510

Product Description

CEVO®-stab F-5510 is a special one pack and it includes a synergistic combination of different lubricating and dispersing agents as well as a balanced mixture of diverse stabilisers.

General Advantages

The mixture was engineered especially for the recycling processes of POM Copolymer (reinforced and unreinforced) waste.

Examples of Use

By the addition to the formulations the thermo-oxidative force of polymer during extrusion process will be minimised and the package works as scavenger for formed formaldehyde.
We recommend to add amounts of 0.4 – 0.6 %.

Delivery Specifications *

Characteristics	Unit	Target value	Method
Melting point *	°C	> 120	ASTM 3954
Colour	–	white	AA 3.2.1.505
Density	g/cm ³	1.00 – 1.02	Ph. Eur. 2.2.5

Packaging and Handling

Physical form	Powder
Packaging	Paper 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®-stab F-5510 is not classified as carcinogenic, mutagenic or reprotoxic; no health or environmental hazards are known, provided it is applied in industrial and professional settings.

Delivery Time and Availability

Standard delivery time: 4 weeks. Preconditions can be met for achieving shorter delivery times on standard products when demanded by the market.

Legislation

Product for technical applications.

- REACh, RoHS and CONEG compliant
- Ingredients listed in relevant national inventories

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

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Völpker Spezialprodukte GmbH · Fabrikstraße 1 · 39393 Völpke · Germany · Telephone +49 39402 962-0 · www.voelpker.com



VOELPKER

Völpker Spezialprodukte GmbH
Fabrikstraße 1 | 39393 Völpke | Germany
Tel. +49 (0) 39402 962-0
Fax +49 (0) 39402 215
plastics@voelpker.com
www.voelpker.com

Design: www.artfaktor.de

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