ZERUST EXCOR

VALENO® CAMPO®

EXCOR® VALENO® CAMPO® combines the established anti-corrosion effect of EXCOR® with the barrier layer properties of a UV-stabilized co-extrusion shrink film as per DIN 55530 and TL 813500-19.

If very large objects that are susceptible to corrosion are exposed to the elements during transport and temporary storage, special protective measures are required. Thanks to a central layer with a high specific density, EXCOR® VALENO® CAMPO® has particularly low water vapor permeability. EXCOR® VALENO® CAMPO® is available with and without integrated EXCOR® corrosion protection.

In regions with strong sunlight over long periods and in the case of prolonged storage, the use of a sandwich packaging structure has proved effective. Here the goods that require protection are first tightly packed with an EXCOR® VALENO® anti-corrosion film, standard, consisting of a lower and upper film. The CAMPO® barrier layer shrink film (without VCI) is only used after that. It should be ensured here that the inner film has as few contact points with the outer film as possible. This procedure protects the VCI active ingredients against breaking down too quickly through thermal loads resulting from sunlight. The outer packaging must be manufactured with great care. Before it is shrunk, complete envelopment is required, e.g. in the form of an upper and base film welded together. Our packaging technicians will be happy to help the user when it comes to selection and design – including in relation to the essential technical equipment such as welding tongs and a shrink gun.

▶ ADVANTAGES

barrier layer properties as per DIN 55530 and TL 813500-19

corrosion protection properties as per TL 8135-0043, Level 3

biaxial shrinking

easy and cost-effective to use

no danger from skin contact or inhalation if used properly

EXCOR®: The corrosion protection that comes from the packaging!

Protective effect*

Type E: steel, cast steel, partly galvanized steel, Cr, Al 4xxx (Si > 7%), cast iron

Type NE(C): Cu, brass, Al 2xxx (Cu) and 5xxx (magnesium) possible

Type NE(S): Ag, Cu, brass, Al 2xxx (Cu) and 5xxx (magnesium) possible

Type MM: steel, galvanized and tin-plated steel, Cu, brass, aluminum 2xxx (Cu), Al 4xxx (Si > 7%), 5xxx (Mg), 6xxx (Mg, Si), 7xxx (Zn), other Al alloys on request, combinations of the above metals

Type A: steel, galvanized steel, Cu, brass, aluminum 2xxx (Cu), Mg alloys possible, cast iron

* For metal parts with unusual surface finishes, e.g. very rough surfaces or adhesive residues from processing agents, it is advisable to carry out tests using model packaging in a climate that simulates actual conditions before using EXCOR® VCI materials on a large scale. Climate test cabinets and chambers (up to a volume of 16 m³) are available for this purpose at EXCOR® Korrosionsforschung GmbH in Dresden.

VALENO®
CAMPO®

◢ Technical data

Brief description	EXCOR® VALENO® CAMPO® barrier-layer UV-stabilized shrink film is a 3-layer COEX shrink film made from polyethylene. The UV-stabilized outer layer is white in color. The barrier layer properties meet DIN 55530 and TL 813500-19. The yellow inner layer has EXCOR® VCI active ingredients integrated into its polymer matrix.
Dosage	1 m² of film can protect up to 10 m² of metal surface. As factors such as pretreatment of the parts, packaging design, and logistics processes can influence the protective effect, technical coordination of the dosage may be advisable. Our application engineers will be happy to advise you.
Passivation phase of the active ingredient	Approx. 1 hour in an enclosed and sealed packaging space of 1 m³ and at a temperature of 20 °C. The closer the packaged goods to be protected are to the VCI dispenser, the shorter the passivation phase.
Effective period	Up to 2 years from production if application instructions are observed. If the application instructions and specific logistical and technical packaging requirements are observed, long-term corrosion protection of up to 15 years is possible.
Storage	EXCOR® VALENO® CAMPO® can be stored for up to 3 years as delivered in its sealed packaging and protected from direct sunlight, moisture, and dirt, under normal storage conditions.

Technical data	Property	Unit	Test standard	
	Film density	g/cm³	DIN 53479	0.91–0.98
	Film thickness	µm	DIN 53370	200
	Tensile strength			
	longitudinal	MPa	DIN EN ISO 527-3/2/200	25
	transverse			24
	Tear strength			
	longitudinal	MPa	DIN EN ISO 527-3/2/200	25
	transverse			24
	Elongation at break			
	longitudinal	%	DIN EN ISO 527-3/2/200	600
	transverse			650
	Puncture resistance (falling weight test)	g	ASTM D1709/A	800
	Water vapor permeability	g/m²d	DIN 53122-1	0.3
	Welding properties	Impulse welding Cut and seal welding		

Quality assurance	For each production run of VCI packaging, EXCOR® checks representative samples for the content of corrosion inhibitors. The emission rate of the VCI components is checked by sampling. TÜV Süd certifies the testing, measurement methods, and QM processes used.

ISO 9001
TÜV SÜD
Certified Quality Management System
www.tuv-sud.com/ms-cert

▶ Delivery forms

- EXCOR® VALENO® CAMPO® barrier layer shrink film Type E, 200 µm
- 6,000 mm wide, 50 rm/roll, folded to 1,500 mm
- UV-stabilized, biaxial shrinking 60/40 Barrier layer properties as per DIN 55530 and TL 813500-19

- CAMPO® barrier layer shrink film, 200 µm
- 6,200 mm wide, 50 rm/roll, folded to 1,550 mm
- UV-stabilized, biaxial shrinking 60/40 Barrier layer properties as per DIN 55530 and TL 813500-19

Disposal

Can be recycled for materials or energy in accordance with local regulations.
Review safety datasheet.

▶ Health

Classification not required under 1272/2008/EC (CLP Regulation on Classification, Labelling and Packaging of Substances and Mixtures).

No risk to the skin in dermatological testing.

No monitoring under TRGS 615 and TRGS 900.

Contact us at:

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