

BioCor® VCI CORROSION PROTECTION FILM

The first corrosion protection from nature based on BioVCI® technology



MetPro VCI products – for comprehensive corrosion protection!

PRODUCT DESCRIPTION:

MetPro BioCor® is a new generation of VCI film, which combines even better corrosion protection with the highest level of responsibility for occupational health. The vapour corrosion inhibitors integrated into the film consist entirely of natural extracts, which redefine toxicological safety in the field of VCI. In addition, the carefully defined dosage meets recycling criteria and optimisation of resources.

MetPro BioCor® provides genuine multi-metal protection (including aluminium, brass, copper, steel, cast iron) during transportation and long-term storage. This is demonstrated by extensive approvals in the metalworking and automotive industries, as well as the relevant tests by the BFSV, IKS and PIRA.

BioCor® is transparent, easily heat sealed, durable, recyclable and manufactured according to the MetPro quality standard DIN EN 9001/2008. Depending on the construction of the package, BioCor® can provide corrosion protection for up to 15 years' storage. BioCor® is available in various formats, from stretch film thickness up to 250 µm, with high penetration resistance or high temperature resistance. BioCor® is approved for direct contact with foods. Ask our technical advisors about the wide range of options.

TECHNICAL INFORMATION, e.g. BioCor® 100 µm:

Characteristic	Value	Unit	Test method
Total thickness	100	µm	DIN 53370
Substance	93	g/m ²	DIN 53365
Dart – Drop (Type ST)	>200	g	ASTM D 1709/A
Dart – Drop (Type HP)	>550	g	ASTM D 1709/A
Tensile strength – Machine Direction	>18	MPa	DIN EN ISO 527-3
Opacity	<24	%	ASTM D 1746
Tensile strength – Cross Direction	>16	MPa	DIN EN ISO 527-3
Elongation at break	300	%	DIN 53455
Tear strength – Machine Direction	62	N/15mm	DIN 53363
Tear strength – Cross Direction	44	N/15mm	DIN 53363
Water vapour transmission rate	0,7	g/[m ² 24h]	DIN 53122
Temperature resistance	-45/+85	°C	-
UV resistance	12	Months	-
Seal strength	25	N/15mm	DIN 53455
Recommended sealing temperature	160	°C	-

*All details are information with the usual tolerances according to GKV and DIN. ** These values are currently being determined in the laboratory.

USE:

Packaging of metal goods, dry and clean, without a coating of oil or grease. As a complete wrapper, as contact protection or for crate lining. (approx. 6 m²/m³). Please contact our technical advisors, who will be glad to assist with a packaging specification for your application.

SCOPE OF PROTECTION:

Steel, stainless steel, galvanised steel, aluminium, aluminium alloys, copper and copper alloys, brass, cast iron, silver, tin, nickel, magnesium.

AVAILABLE FORMATS:

Flat bags, zip bags, layflat tube, gusseted bags, Y-hoods, elasticated bags and hoods, box and crate liners (flat films and machine covers) and flat film in various widths. BioCor® HS bags, heat sealable, optionally resealable, printed or unprinted. Coloured mandarin orange as standard, special colours available, as required by the customer.

Special feature: BioCor® is amine and nitrite free, compliant with TRGS 900 and TRGS 615, and is approved for direct food contact.

We reserve the right to make technical modifications. The usability of our products must be validated by the customer under local conditions. The information provided in this product information is not to be considered as a warranty of assured properties, but merely provides recommendations which are based on our many years of experience and testing. Climatic effects, contamination and environmental effects may have a considerable influence on the protective effect of corrosion protection products. Tolerances in dimensions and quantities are according to GKV 2007.

Based on Document: MSDS BioCor® VCI Film Version 3 Date 22.05.2017 from Louise O'Brien

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SAFETY DATA SHEET

According to Regulation (EC) No.1272/2008 (REACH)
Modified in accordance with Regulation (EU) No. 2015/830

1. Identification of the Substance / Preparation and of the Company / Undertaking

- 1.1 Product Identifier:** BioCor® VCI Film
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
VCI corrosion protection film
- 1.3 Details of the supplier of the safety data sheet:**
Company / Manufacturer
MetPro Verpackungs-Service GmbH
Robert-Bosch-Str. 17
71701 Schwieberdingen, Deutschland
Tel: +49 (0) 7150/92483-0
Fax: +49 (0) 7150/92483-80
info@metpro.de
- 1.4 Emergency Telephone Number:** Tel.: +49 (0)7150/92483-0
(Mon. – Fri. 8:00 to 17:00)

2. Hazards Identification

- 2.1 Classification of the substance or mixture**
The product is not classified hazardous according to the Regulation (EC) No. 1272/2008 and the Council Directives 67/548/EEC and 1999/45/EEC.
- 2.2 Label elements**
No special labelling required
- 2.3 Other hazards**
Explosion hazard
Material is not explosive as defined by established regulatory criteria
- Heating**
When heating the product, e.g. for shrink wrapping, ensure that the workplace is well ventilated. In individual cases, extraction equipment should be installed directly over the systems.

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Overheating

Improper processing of polyethylene may result in the formation of low molecular weight decomposition products. Because of this, in particular overheating of the molten material must be avoided. Toxic gases are produced on combustion (see sections 5 and 10).

Fire hazard

Not a fire hazard

Dust/sparking

Danger of electrostatic charging. The product may become electrostatically charged, which may cause discharges capable of causing ignition. All product machines must be properly earthed.

Slip hazard

Film lying on the floor presents a risk of slipping

3. Composition/information on ingredients

3.1 Substance

Ingredient	CAS No.	Concentration
Polyethylene	9002-88-4	>96%
VCI Additive	Proprietary	<3%

3.2 Mixture

Not applicable

4. First Aid Measures

4.1 Description of first aid measures

General Information:	In cases of doubt, or where symptoms persist, seek medical attention. Never give anything by mouth if the victim is unconscious.
Skin contact:	For the hot product: Cool the affected area with plenty of cold water. Then cover with a clean cloth or sterile gauze and provide immediate medical treatment. Do not attempt to remove the product from the skin or take off contaminated clothing as this may tear off skin tissue
Eye contact:	Rinse continuously for at least 10 minutes. Call a doctor in case of irritation.
Ingestion:	Very unlikely to be ingested but consultation with a doctor is recommended in the unlikely event.

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- 4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available
- 4.3 Indication of any immediate medical attention and special treatment needed**
Treat symptomatically.

5. Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

In case of fire, use water spray (fog), foam or dry chemical.

Unsuitable extinguishing media

Do not use waterjet.

5.2 Special hazards arising from the substance or mixture

May be combustible at high temperatures.

Hazardous thermal decomposition products

Burning can produce carbon monoxide and/or carbon dioxide and other harmful products. The major decomposition products are low molecular weight oligomers (C6-C18) of polypropylene. Degradation products may include trace amounts of acrolein, formaldehyde, aldehydes and other organic vapours.

5.3 Advice for fire-fighters

Special protective actions for fire-fighters

Isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face respirator. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

5.4 Further information

Electrical equipment and lighting must be protected according to the appropriate standards to prevent dust from coming into contact with hot surfaces, sparks or other sources of ignition.

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6. Accidental Release Measures

6.1 **Personal precautions, protective equipment and emergency procedures**

No action should be taken involving personal risk of without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through split material. Shut off all ignition sources. Turn off all ignition sources. Put on appropriate PPE.

6.2 **Environmental precautions**

It is not expected to cause a hazardous situation

6.3 **Methods and material for containment and cleaning up**

For small and large spills, sweep up material and place in a designated waste container

6.4 **Reference to other sections**

Information on emergency contact, see section 1

Information on safe handling, see section 7

Information on personal protection equipment, see section 8

Information on disposal, see section 13.

7. Handling and Storage

7.1 **Precautions for safe handling**

Molten product can cause burns, please handle with care. Use of gloves is recommended in case of sensitive skin types. Take measures to prevent electrostatic charging

7.2 **Conditions for safe storage, including any incompatibilities**

Store on pallets in dry, closed spaces on a firm floor. It is recommended the the product is only stored in the original packaging, protected from direct sunlight. Do not store open packages. Tightly seal open packages immediately or completely use up the product. Store the product in a cool place if possible. Eliminate all ignition sources. Separate from oxidising materials.

7.3 **Specific end use(s)**

See product use, chapter 1.2

8. Exposure Controls and Personal Protection

8.1 **Control parameters**

Ingredients with occupational exposure limits to be monitored

None established

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8.2 Exposure controls

Recommended method for monitoring of polyethylene dust in air on workplace: gravimetry and dust meter.

General protective and hygienic measures

Wash hands, forearms and face thoroughly after handling chemical products before eating, smoking and using the lavatory and at the end of the working period.

Personal Protection Equipment:



Skin/hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary

Eye protection

Wear tightly closing eye protection

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

As there are no ingredients which are listed in the Technical Rules for Hazardous Substances, TRGS900, no special precautions with regard to respiratory protection need to be taken. In the unlikely event of experiencing discomfort, use a self-contained breathing apparatus.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

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9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Form	VCI corrosion protection film
Colour	As required
Odour	Slight coconut smell
Odour threshold	Not determined
pH-value at 20°C	Not applicable
Melting point	100°C - 115°C
Initial boiling point / range	Not applicable
Flash Point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	Not applicable

9.2 Other information

Amine content	None
Nitrites	None
Heavy metals	None
Solids content	100%

10. Stability and Reactivity

10.1 Reactivity

None identified

10.2 Chemical stability

The product is chemically stable under normal conditions of storage, handling and use.

10.3 Possibility of hazardous reactions

No hazardous reactions known

10.4 Conditions to avoid

Temperatures above 300°C and exposure to direct sunlight or UV light may cause decomposition of polymers in the product.

10.5 Incompatible materials

Strong bases, alkaline solutions, oxidising agents.

10.6 Hazardous decomposition products

Decomposition under extreme high temperatures in the air atmosphere may produce CO, CO₂ selected alkenes and aldehydes.

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11. Toxicological Information

According to current state of expert knowledge this substance is not considered as hazardous for human and has no adverse effects on human health

Acute Toxicity (oral-rat):

>4,900 mg/kg (Calculated)

Skin corrosion/irritation

No irritating effects are known

Serious eye damage/irritation

No irritating effects are known

Skin sensitisation

No sensitisation known

CMR effects (carcinogenicity, mutagenicity, reproduction toxicity)

The substance has no known CMR effects

Specific target organ toxicity (STOT) – single exposure

No data available

Specific target organ toxicity (STOT) – repeated exposure

No data available

Aspiration hazard

No data available

Other information:

Amine and nitrite free.

Handle in accordance with good industrial hygiene and safety practice

12. Ecological Information

12.1 Toxicity

Aquatic toxicity:

This material is not believed to have detrimental effects on aquatic organisms and is not soluble in water.

12.2 Persistence and degradability

This substance has no harmful effects in the environment. It is a foreign substance in the environment with a very slow degradation. The degradation is mainly caused by UV radiation.

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12.3 Bioaccumulative potential

No relevant further information available

12.4 Mobility in soil

This product is expected to float on water and is not likely to move rapidly with surface or ground water flows due to its low water solubility. The material is insoluble in water.

12.5 Results of PBT and vPvB assessment

No relevant further information available

12.6 Other adverse effects

This product is not considered to be a harmful or dangerous material.

12.7 Additional information

Do not allow to run into surface waters, wastewater or soil

13. Disposal Considerations

13.1 Waste treatment methods

Product

Methods of disposal

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Hazardous waste

Within the present knowledge of the supplier, this product is not regarded as hazardous waste as defined by EU Directive, 2008/98/EC.

Packaging

Methods of disposal

Generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport Information

The material is categorized as being safe for transport. Store cool and dry if possible

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PRODUCT INFORMATION

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Regulations	UN Number	Shipping Name	Classes	VG	Label
ADR/RID class	Not categorised	-	Not hazardous	-	-
ADNR class	Not categorised	-	Not hazardous	-	-
IMDG class	Not categorised	-	Not hazardous	-	-
IATA class	Not categorised	-	Not hazardous	-	-

15. Regulatory Information

15.1 Labelling and Classification EC

Material is not dangerous as defined by the EU Dangerous Substances / Preparations Directives

15.2 Regulatory Status and Applicable Laws and Regulations

Complies with the following national/regional chemical inventory requirements: TSCA, EINECS

16. Other Information

We reserve the right to make technical modifications. The usability of our products must be validated by the customer under local conditions. The information provided in this product information is not to be considered as a warranty of assured properties, but merely provides recommendations which are based on our many years of experience and testing. Climactic effects, contamination and environmental effects may have a considerable influence on the positive effect of corrosion protection products.

This information is based on the present state of knowledge and experience. The Safety Data Sheet describes the products with regard to safety requirements. The information does not constitute a warranty of specific properties.

Department issuing SDS

Technical Department

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