

Material Product Data Sheet

Metcoseal HP-30 Sealer for Thermal Spray Coatings

Sealer Products: Metcoseal™ HP-30

1 Introduction

Metcoseal HP-30 is a high solid content impregnating 2-component sealer for sealing internal porosity in thermal spray coatings. Metcoseal HP-30 is optimized for maximum penetration and pore filling capability in oxide ceramic coatings. Open porosity is effectively sealed throughout the coating and structure is strengthened for maximum dielectric resistance and corrosion prevention

1.1 Typical Uses and Applications

Prevention of undercorrosion in humid or wet conditions
Improvement of dielectric resistance of oxide coatings

- Anilox Rolls
- Paper Industry Rolls and Components
- Dielectric Applications, heaters, bearings etc.

Quick Facts

Classification	Auxiliary, Sealers
Purpose	Seal porosity within medium-high-porosity thermal spray coatings
Process	APS oxide coatings and porous carbide and metallic coatings



1.2 Physical Properties

Property	Metcoseal HP-30	
Base Composition	Special Epoxide Resin (2-component)	
Appearance	Clear amber color liquid Clear & transparent when cured	
Coverage	120 g / m ²	0.4 oz / ft ²
Cure Method	Polymerization	
Viscosity at Room Temperature	24 to 28 s (DIN #4) Used at elevated temperature	
FlashPoint	>60 °C TCC	>140 °F TCC
Max. Prolonged Service Temperature	250 °C	480 °F
Max. Short Duration Service Temperature	300 °C	570 °F
Shelf Life	12 months See section 4.2	
Volatile Organic Compounds (VOC)	1 wt. %	

2 Material Information

2.1 Quick Selector

Sealer	Application Examples	Service Conditions		Curing	Mixing Ratio
		pH	Solvents		
Metcoseal HP-30	Dielectric resistance improvement Anilox rolls Rolls for paper industry	2 to 12	Most industrial solvents	1 h @ 110 °C	Base : Curing agent 1:1 By weight

3 Key Processing Information

3.1 Metcoseal HP-30 Sealing Work Preparations

Always read the Material Safety Data sheet (SDS) and adhere to all safety measures and use correct Personal Protective Equipment (PPE) before starting to work with Metcoseal HP-30.

As a general rule, apply sealer always after spraying and prior to finishing. Metcoseal HP-30 achieves maximum performance when coating surface is clean, dry and free of oil, grease, dirt, cor rosives, paint and any other foreign matter.

Prepare all tools and materials ready for the sealing work. Use suitable plastic (PP, PE), glass or metal containers and mixers. Brushes and rollers should be suitable for epoxy paints.

3.2 Surface Preparation

After completing the thermal spray coating do not touch the coated surfaces. If the coating is contaminated it must be cleaned before applying the sealer. Remove dust by air blasting. Organic solvents such as acetone or isopropanol can be used for grease and dirt removal. Let dry completely before applying the sealer. Note that component should be either still warm or preheated when starting the sealer application.

3.3 Metcoseal HP-30 Mixing

Metcoseal HP-30 is recommended to be applied manually by brush or paint roller. If automated, 2-component spray equipment is recommended.

As some settling may occur, contents of the containers should be stirred or mixed thoroughly prior to use.

Preheat the sealer components prior to mixing in their own containers to approx. 50 - 60 °C (120 - 140 °F)

Mix when warm part BASE with part CURING AGENT always by weight on an accurate scale

Mixing Ratio: 1:1 by weight

NOTE: The amounts of the components should be followed

accurately. Maximum allowed deviation is $\pm 0.5\%$ by weight

Example for a sealer batch of 200 grams:

Add BASE (100 \pm 0.5 g) into the mixing pot on a scale
Add CURING AGENT (100 \pm 0.5 g) into the same mixing pot

Mix the components properly at room temperature, at least for 1 min before using.

Ready mixture should be used when still warm. This reduces the viscosity of the sealer. Ready mixture can be reheated up to 50 °C but must not be stored for prolonged time but used immediately.

3.4 Metcoseal HP-30 Manual Application

When starting the sealing work the workpiece temperature must be above the dew point. To improve penetration of the sealer a preheat temperature for the part of 50 °C (120 °F) is recommended. The workpiece temperature should not exceed 75 °C (170 °F).

Apply the first layer of warm sealer using a paintbrush or small paint roller with generous amount of sealer (thick wet film), as wet as possible to ensure the proper penetration. If possible, apply some pressure to the surface. Continue brushing the surface for a couple of times until air bubbles do not appear anymore. In case dry spots appear, reapply sealer after 5 minutes. After 15 minutes wipe the excess sealer from the surface by a non-linting cloth, squeegee or dry paint roller. Leave some sealer on the surface, do not dry completely.

IMPORTANT! Applying of the mixture should be done within 1 hour after the addition of the curing agent.

3.5 Curing of Metcoseal HP-30

Curing is based on chemical reaction and requires heating and certain time dependent on the mass of the component. Recommended temperature for curing is 110 °C (230 °F). Higher temperature can be used to significantly speed up curing with smaller workpieces. Do not exceed 150 °C (300 °F).

Curing Schedules	Time After Application (at room temperature unless otherwise noted)	
Touch / gel time	10 min at 110 °C	230 °F
Complete Cure	1 hour at 110 °C	230 °F

Ensure the component is at the curing temperature for the duration of the curing cycle. Let the component cool down slowly.

4 Commercial Information

4.1 Ordering Information and Availability

	Order No.	Container Size	Availability	Distribution
Metcoseal HP-30	2370954	0.5 kg + 0.5 kg (Base + Curing Agent)	Special Order	Global

4.2 Storage and Disposal Recommendations

- Both components of Metcoseal HP-30 have to be stored separately in dry, well-ventilated place in room temperature. Containers should be immediately closed after use and held tightly closed and prevent possibility of accidental mixing. See SDS for details.
- Sealer components that are once opened, but properly stored in well-closed containers can be used until the expiry date. Slight color change in the Curing Agent is normal during longer storage and is not detrimental to performance
- Hardened excess can be disposed with normal municipal waste. Liquid sealer or components must be treated as hazardous waste. See SDS for details.

Possible grinding of the coating should not be performed before complete curing of the sealer. Grinding un cured sealer may clog grinding wheels.

Sometimes it is possible that grinding opens porosity or creates cracks that are not any longer properly sealed. In these cases or if in doubt a second sealing can be performed. Follow the instructions given for surface cleaning and after application, make sure all excess is removed very thoroughly.

After the work is complete remove all spillage or excess sealer with acetone or methylethylketone (MEK). Dispose the used tools or rinse with acetone or MEK.

Let the excess sealer cure in the mixing container at elevated temperature until hardened.

4.3 Safety Recommendations

See the SDS (Safety Data Sheet) for the applicable product. SDS are available from the Oerlikon web site at www.oerlikon.com/metco (Resources – Safety Data Sheets).

Product	SDS No.
Metcoseal HP-30 Base	50-2776
Metcoseal HP-30 Curing Agent	50-2777