



Product Data Sheet

“PHILAGARD Chemical Tolerant PHE-CEM”

Product Information

PhilaGard Chemical Tolerant is a high performance, two-component, novolac epoxy resin.

Special features:

- Excellent tolerance of a variety of concentrated mineral and organic acids, including: sulfuric, hydrochloric, acetic and various fatty acids
- Meets U.S.D.A. requirements for incidental food contact
- Meets South Coast Air Quality Management District (SCAQMD) VOC requirements

PhilaGard Chemical Tolerant displays very good compatibility with various well-known producers.

Availability subject to special agreement. Not included in Philadelphia Coatings LLC Worldwide Group Assortment.

Recommended Purpose

As a chemical resistant coating and/or binder. Applications include as a high gloss, chemical-resistant protective coating used in thin film systems; clear and pigmented binder for seamless, slip-resistant broadcast systems; and heavy-duty chemical and abrasion-resistant, trowel-applied mortar flooring systems.

Surface Preparation

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Minimum recommended surface preparation:

Substrate	Minimum	Recommended
Carbon steel	St 2 (ISO 8501-1)	Sa 2 (ISO 8501-1)
Stainless steel	The surface shall be hand or machine abraded with non-metallic abrasives or bonded fibre machine or hand abrasive pads to impart a scratch pattern to the surface and to remove all polish from the surface.	Abrasive blast cleaning to achieve a surface profile using non-metallic abrasive media which is suitable to achieve a sharp and angular surface profile.
Galvanised steel	The surface shall be clean, dry and appear with a rough and dull profile.	Light brush blasting using nonmetallic abrasive leaving a clean, rough and even pattern.
Coated surfaces	Clean, dry and undamaged compatible coating (ISO 12944-4 6.1.4)	Clean, dry and undamaged compatible coating (ISO 12944-4 6.1.4)

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Concrete	Low pressure water washing to a rough, clean, dry and laitance free surface.	Minimum 4 weeks curing. Moisture content maximum 5 %. Prepare the surface by means of enclosed blast shot or diamond grinding and other appropriate means to abrade the surrounding concrete and to remove laitance.
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Optimum performance, including adhesion, corrosion protection, heat resistance and chemical resistance is achieved with recommended surface preparation. For other surface treatments, please consult with Philadelphia Coatings LLC.

Physical Properties

Compressive strength:	10,000 psi	ASTM D695
Tensile strength:	8,500 psi	ASTM D638
Elongation at break:	6%	ASTM D638
Flexural strength:	11,800 psi	ASTM D790
Modulus of elasticity:	134,000 psi	ASTM D790
Shore D:	84	ASTM D2240
Adhesion	300 psi	ASTM D4541
Water resistance	0.15%	ASTM D570
MVT at 10 mils	0.15 Perm	ASTM E96
Flammability	Pass	ASTM D635
Taber abrasion	40 mg, 1,000 cycles, CS-17	ASTM D4060
Anti-microbial	Pass	JIS Z 2801-2010
Weight/gallon (mixed)	9.7 lbs/gal	ASTM D1475
Weight solids (mixed)	100%	ASTM D4209
Volume solids (mixed)	100%	Calculated
Viscosity (mixed)	700 cps	ASTM D2196
Flash point VOC (mixed)	>205°F	ASTM D3278
Shelf life	<5 g/L	EPA Method 24
Thin film cure at 75°F (23°C)	8–9 hours	
Full cure for chemical resistance at 75°F (23°C)	7 days	

The above tested results are typical values. Individual lots may vary up to 10% from the typical value. Consult with Philadelphia Coatings LLC Technical Department for further information.

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Application Data

Mixing Ratio: Base 3 part per/volume, Curing Agent 2 part/volume.

Mixing Instructions: Pre-mix base for 3–5 minutes before adding curing agent. Mix for a minimum of 5 minutes before applying. Jiffy Mixer paddle recommended.

Readiness Time: 15 minutes in a proper temperature.

Application Conditions: Temperature (air, surface and material): 10°C (50°F) minimum, 29°C (85°F) maximum
At least 2.8°C (5°F) above dew point.

Painting Method: Roller or squeegee.

Use proper equipment. Actual safety measures and precautions are very important from the selected method and environment where work is done. Emergency Contact Numbers are available World Wide upon any request.

Cleaning: Power tool cleaning and Cleaners with Thinner PH 300.

Pot Life: ± 30 minutes at 20°C (68°F)

Curing Time: Within 7 days at 23°C (fully cured).

Drying and Over coating Conditions

Temperature of basis material	23°C (75°F)
Thin film cure	8 - 9 hours
Full cure for chemical resistance	7 days

Coating Specification

Long overcoat period if temperatures are around freezing point. Proper selection of the systems, coating application procedures and surface preparation are made depending on actual existing film. Best specific design factors and conditions are tested in a controlled laboratory. Consult with Philadelphia Coatings LLC Technical Department before and throughout testing process.

Storage

Base: circa 12 months at 25°C, stored in a cool, dry, shaded and ventilated condition.

Hardener: circa 12 months at 25°C, stored in a cool, dry, shaded and ventilated condition.

The container/paint, must be kept sealed and away from heat and ignition.

In some markets commercial shelf life can be dictated shorter by local legislation. The above is minimum shelf life, thereafter the paint quality is subject to re-inspection.

Color Variation

When applicable, products primarily intended for use as primers or antifoulings may have slight color variations from batch to batch. Such products may fade and chalk when exposed to sunlight and weathering. Color and gloss retention on topcoats/finish coats may vary depending on type of color, exposure environment such as temperature, UV intensity etc., and application quality. For further information, please consult with Philadelphia Coatings LLC.

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Pack Size

5-gallon kit. If other packing specifications are needed, please consult with Philadelphia Coatings LLC.

Remarks: Not resistant to concentrated oxidizing acids such as nitric or chromic. Exposures to chemicals or combinations of chemicals at temperatures above 80°F (26°C) should be tested under conditions which simulate the in-use environment.

Health and Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information. Read carefully and conform to precautions on MSDS and packing vessels. To avoid eye and skin contact, tools such as gloves, goggles and face mask etc. should be used during work with product (proper safety measures should be taken according to construction methods and circumstances). All work with the product must be carried out according to all relevant national health, safety and environment standards and codes. This product is for professional use only.

Limitation of liability

All information is given for guidance only and is subject to regional variation depending upon local climate and environmental condition. An excessive film thickness delays the final curing and creates sagging. Over coating interval will increase with the number of paint layers and the thickness of the paint film. For recommended paints at special circumstances, please consult with Philadelphia Coatings LLC. Apply in good weather. The relative humidity must not exceed 80% temperature of the surface to be coated must be at least 3°C above the dew point. All data from the tests is obtained under lab conditions, so Philadelphia Coatings LLC won't bear any liabilities from the condition whether the data could reflect the objective status of the actual application circumstance or not.

Disclaimer

The information in the product manual is based on our experiences from tests and practice. For the application without our knowledge, we could only make sure that our products themselves are warranted. We may modify the data in this product manual according to our continuous development and experience accumulation without advanced notice.