

# PIP VE-CR 40 Flake

## Vinyl Ester Flake Lining/Coating



7875 Bliss Parkway North Ridgeville, OH 44039  
440-327-0015 440-353-0549 - FAX

### DESCRIPTION:

PIP VE-CR 40 Flake is a 40-mil catalyzed, epoxy vinyl ester resin system for protection of steel or concrete substrates. It is a highly chemical resistant coating that provides excellent resistance to alkalis, acids and a broad range of chemicals. It is used for steel or concrete tank linings in immersion service and as a floor topping.

### Typical uses

Process Tanks	Storage Tanks
Refineries	Pulp/Paper
Pharmaceutical	Petrochemical
Secondary containment	light duty flooring

### Advantages

- FDA compliant (CFR 175.300)
- Excellent chemical resistance
- Temperature resistance 120°F wet, 210°F dry heat
- Long service life vs. thin film coatings

### Chemical Resistance

Specific information on the chemical resistance properties will be furnished on request.

### Surface Preparation

**Metal** - For immersion or intermittent splash and spillage conditions, abrasive blast to "White Metal" in accordance with Steel Structures Painting Council Specifications SP-5 or NACE **Specification #1**. A minimum surface profile of 3.0 mils is required. For fumes and dry environments, abrasive blast surface to "Near White" in accordance with SP-10 or NACE #2. A minimum surface profile of 3.0 mils is required.

**Priming**- Use PIP VE-PR-Flex for or PIP VE-CR for priming. **DO NOT USE AN EPOXY PRIMER FOR PRIMING BENEATH ANY VINYL ESTER COATING.**

### Concrete:

Abrasive blasting or scarification to remove laitance and surface contaminants is recommended. Concrete must be thoroughly cured and dry, free of dust, oil, curing solutions and mold release agents at time of application. Use ASTM D 4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, re-test until dry.

### Mixing

Mix using drill motor and Jiffy type or similar paddle. Mechanically mix VE-CR40 Flake PART A and VE-CR-B hardener approximately 3 minutes.

**Thinner**—None required. **DO NOT THIN.**

### Mixing Ratio - By Volume

PIP VE-CR 40 Flake-A	1 gal
VE-CR-B Hardener	1-1/2 oz to 3 fl. oz. (varies depending on surface temperature)
VE-Curing Aid	2-3 fl. Oz. (Final Coat ONLY)

### \*Color and Pigmenting

PIP VE-CR 40 Flake is supplied in an off-white color. The addition of CPU colorant may be field added to achieve a pigmented coating. Please understand that addition of these color packs to this off- white base will result in a lighter color than indicated on the Protective Industrial Polymers Standard Color Chart.

It is imperative to add exactly the same amount of additional colorant to each pail to achieve consistent desired color.

Pre-pigmented custom colors will be considered depending on volume required and color feasibility. Please contact Protective Industrial Polymers for specific details if this is required.

### PIP VE-CURING AID FOR FINAL TOPCOAT

Depending on cure temperature and atmospheric conditions, the coating surface could remain tacky after final cure. This phenomenon at the very top of the film surface is caused by air inhibition. To eliminate this possibility, on the final wear or topcoat, Protective Industrial Polymers strongly recommends the addition of 2.0 to 3.0 oz./Gal of PIP VE-Curing Aid additive.

ADD THE CURING AID ONLY TO FINAL COAT ONLY IN ADDITION TO VE-CR-B HARDENER. ADDING CURING AID TO AN INTERMEDIATE COAT WILL RENDER IT AN UN-BONDABLE SURFACE.

### Application

Must be applied over primed surface. Primed surface must be dry and free of foreign matter at time of application.

**Apply using brush, short nap 9" roller or spray equipment.**

### Handling Properties

Working Time
50°F (10° C)
70°F (21° C)
90°F (32° C)

### Time to Recoat

when not in direct sun light		
	Min. time	max. time
50°F (10° C)	8 hrs	1 week
70°F (21° C)	4 hrs	5 days
90°F (32° C)	2 hrs	3 days

Surfaces should be top-coated within one day when exposed to direct sunlight. For longer exposure confirm recoat ability by wiping with Styrene monomer. If surface becomes "tacky" adhesion is acceptable. If not softened by Styrene, surface must be sandblasted or mechanically abraded to provide a non-glossy, abraded surface.

### Coverage

Theoretical Two (2)- 15-20 mil/coats totaling 30 – 40 wet mils will yield theoretical coverage of approximately 30 – 40 ft<sup>2</sup> /gallon.

**Color as supplied** off-white

### Packaging

The following standard packages are available

PIP VE-CR 40 Flake		4 gal units	
Technical and Physical Data			
	Test standard	Unit	Value
Generic Type			Vinyl Ester
Weight		lbs/gal	9.8
Color			off-white
Adhesion (steel)	ASTM D4541	psi	>1200
Tensile strength	ASTM D-638	psi	3000
Elongation	ASTM C-307	psi	.6-.9%
Temperature Resistance		120°F	(49°C)
Solids content	Theoretical Calculation	%	100 (reactive)
VOC	Theoretical Calculation	g/L	84
Permeability	ASTM E-96	Perms/inch	0.039

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**Do not use acetone for cleaning purposes.**

PIP VE-CR40 Flake contains vinyl ester resins and cumene peroxide catalyst. The product's components have been formulated to optimize physical characteristics such as strength and chemical resistance while minimizing hazardous physical and health factors encountered during application. A concerted effort is made to be aware of the latest chemical toxicological information and to apply this knowledge in a responsible manner to ensure product safety.

During application of PIP VE-CR40 Flake, always wear gloves and appropriate work clothing to minimize contact. Ventilation is required with special consideration for enclosed or confined areas. Air movement must be designed to ensure turnover at all locations in work area and adjacent areas to avoid buildup of heavy vapors. Use caution when handling flammable liquids, eliminate sources of ignition from work area and containers with residues. Observe safe storage practices by separating resins from hardeners, by keeping solvents in a cool area, free of sources of ignition.

Product Material Safety Data Sheets are available and should be consulted when handling products. These products are for industrial and professional use only; application directions must be followed.

### Maintenance

Periodically inspect the applied material and repair localized areas as needed. Consult your Protective Industrial Polymers representative for additional information.

### Environmental conditions during application

Substrate temperature must be between 50°F and 95°F

Surface temperature must be 5°F above dew point and relative humidity below 90%

### Storage and Shelf Life

Store material in a cool, dry and covered location [50°-90° F (10° - 32° C)], away from fire hazards and direct sunlight. Shelf life is from date of manufacture (DOM).

@ 40-60°F (4-16°C)	6 months
@ 61-85°F (18-29°C)	3 months
@ 86+°F (30°C)	2 months

Higher temperature will shorten the shelf life of these products. The packing drums are to be kept tightly sealed and are to be resealed each time materials have been removed. All liquid products are to be stored in a frost-free place.

**TECHNICAL SUPPORT:** For application questions, please contact your salesman or PIP technical service at 440-327-0015.

**READ SAFETY DATA SHEET (SDS) FOR SAFETY AND PRECAUTIONS. KEEP OUT OF REACH OF CHILDREN.**

### WARRANTY AND CONDITIONS OF USAGE

**WARRANTY AND LIMITATION OF LIABILITY:** Protective Industrial Polymers Inc. ("PIP") warrants that its products shall conform to the manufacturer's written specifications and shall be free from defects for one (1) year from the date of purchase. PIP MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL

TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE (SPECIFIED BELOW), VANDALISM, NEGLIGENCE OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES. If any PIP product fails to conform to this warranty, PIP shall either replace the product at no cost to Buyer or refund the cost of the product, in PIP's sole discretion. Replacement of any product or a refund of the cost of any product shall be the sole and exclusive remedy available to buyer, and buyer shall have no claim for incidental, special or consequential damages, including, without limitation, business interruption damages. Any warranty claim must be made within one (1) year from the date of delivery of products. PIP does not authorize anyone on its behalf to make any written or oral statements which in any way alter PIP's warranty or installation and storage information or instructions in its product literature or on its packaging labels. Any installation of PIP products which fails to conform to such installation information or instructions or the "Conditions of Usage" (specified below) shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of PIP's products for the Buyer's intended purposes.

**CONDITIONS OF USAGE:** Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.