Technical Data Sheet

Protect 2100 AM Satin

Antimicrobial, UV Protective, Low-Odor, High Solids, Satin Urethane

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

DESCRIPTION:

Protect 2100 AM Satin is a high-solids, satin finish, two or three-component antimicrobial and UV protective polyurethane coating. It can be applied over an epoxy primer or used to recoat an existing epoxy or urethane floor. **Protect 2100 AM Satin** has been modified with an antimicrobial component that is integral to the manufactured product. The product is protected against bacterial and fungal growth. The antimicrobial properties will remain effective for the life of the product.

Protect 2100 AM Satin is also formulated with UV inhibitors to greatly reduce damaging UV rays from penetrating and yellowing an epoxy basecoat when applied as a clear coat. **Protect 2100 AM Satin** is recommended as the antimicrobial clear finishing coat on decorative flake, quartz or metallic pigmented flooring systems. Protect 2100 AM Satin may also be pigmented on applications requiring a solid color antimicrobial urethane topcoat.

USES:

Suited for laboratories, hospitals, veterinary clinics, show room floors, and other places where anti-microbial, physical and chemical resistance properties combined with light stability are important.

ADVANTAGES:

- Satin Finish provides UV stability and light reflectivity
- Excellent resistance to tire staining (hot or cold)
- Resists Skydrol®, jet fuels and other chemicals
- Four times floor life compared to most epoxies
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC & CA* (*excluding SCAQMD)

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

PACKAGING KITS/ PART NUMBERS:
Volume Mix Ratio: 1A : 2B : .125C

1.50 gallons Protect 2100 AM Satin Clear
(687 **SF @ 3.5 mils**
Protect 2100AM- Satin-A/HG
Protect 2100-B/1

1.56 gallons Protect 2100 AM Satin Pigmented
(715 **SF @ 3.5 mils**
Protect 2100AM-Satin-A/HG
Protect 2100-B/1
CPU-xxxx/HP

3.0 gallons Protect 2100 AM Satin Clear
(1374 SF **@ 3.5 mils**
Protect 2100AM-Satin-A/1
Protect 2100-B/2

3.125 gallons Protect 2100 AM Satin Pigmented
(1432 SF **@ 3.5 mils**
Protect 2100AM-Satin-A/1
Protect 2100-B/2
CPU-xxxx/P

3.385 gallons Protect 2100 AM Satin Pigmented DiamondWear
(1551 SF **@ 3.5 mils**
Protect 2100AM-Satin-A/1
Protect 2100-B/2
CPU-xxxx/P
DiamondWear/HG

Some pastel or vivid colors may require 2 pints (1 quart) of color for enhanced opacity when applying a single coat over dis-similar substrates. Consult Protective Industrial Polymers for specific recommendation.

For applications where the temperatures are between 55°F-65°F combined with relative humidity levels (RH) between 20-35%, the use of **Protect 2000-2100 Series Spike** accelerator is recommended. Use of this accelerator will hasten the cure to be similar of the standard material in normal conditions (70-80F with 35-80% RH). The use of this accelerator in normal conditions will result in a shorter working time, higher viscosity build, reduced leveling and increases stickiness and roller drag. When relative humidity (RH) is below 20%, please consult Protective Industrial Polymers for specific recommendations and limitations.

See Protect 2000-2100 Series Spike Technical Data Sheet for more detailed information regarding the use of this accelerator.

DO NOT apply coatings unless the surface temperature is more than five degree over the dew point. During the application and cure of the coating, the substrate temperature, material temperature and room conditions should be ideally maintained between 65°F (18°C) and 90°F (32°C) with relative humidity (RH) between 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point.

Color Pack: 0 VOC Color packs designated as CPU-xxx are used with **Protect 2100 AM Satin**. Many standard and custom colors are available; please refer to the price list for available colors. It is important to have a color consistent floor in a similar color before application of **Protect 2100 AM Satin**or multiple coats may be required.

Texture: **Protect GlossGrip #10 Additive** can be incorporated into **Protect 2100 AM Satin** to create a wear texture while maintaining an easily cleaned glossy surface.

LIMITATIONS:

Contamination and surface defects: If contaminates including oil, silicone, mold release agents and/or other materials are present, **Protect 2100 AM Satin** may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminates is NOT RECOMMENDED; please contact Technical Service for additional recommendations.

Technical Data Sheet

Protect 2100 AM Satin

Antimicrobial, UV Protective, Low-Odor, High Solids, Satin Urethane

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

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	187 °F (86°C)
Volume Solids (mixed)	ASTM D2369	85-90%
Mixed Viscosity	ASTM D2196	400 cPs
Dry Time	ASTM D5895	Tack Free 6 hr Dry 12-16 hr Full Cure 7-14 days
VOC-Volatile Organic Compound	ASTM D3960	< 175 g/l Clear & Pigmented

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Taber CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	25 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/Glass Bead #10
Tensile Strength	ASTM D2370	2300 psi
Elongation	ASTM D2370	5%
Impact	ASTM D2794	140 in.lbs Direct & Reverse
Hardness (Pencil)	ASTM D3363	3H
Dry Film Thickness	at 4 mils WFT	3.5 mils
60 Degree Gloss		25-45

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

CHEMICAL RESISTANCE*:

Protect 2100 AM Satin	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	G	G
30% Hydrochloric	G	F
10% Nitric	G	F
50% Phosphoric	G	F
37% Sulfuric	F	P
ACIDS, ORGANIC		
10% Acetic	G	F
10 % Citric	G	G
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	G	G
Isopropanol	G	G
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	E	E
Mineral Spirits	E	E
Xylene	E	E
Methylene Chloride	P	P
MEK	G	G
PMA	G	G
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil	E	E
Skydrol®500B	E	E
Skydrol®LD4	E	E
20% Sodium Chloride	E	E
10% TSP	E	E

*Based on spot testing of the clear coating after 14 days of cure. Pigmented versions may see reduced chemical resistance and staining.
Legend: **E- Excellent (Not Effected)**
G-Good (Limited Negative Effect)

Technical Data Sheet

Protect 2100 AM Satin

Antimicrobial, UV Protective, Low-Odor, High Solids, Satin Urethane

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

F-Fair (Moderate Negative Effect)
P-Poor (Unsatisfactory)

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

SUBSTRATE: The substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. If you suspect concrete has been treated or sealed, proceed with complete removal process. Consult your PIP representative for further instruction if silicate hardeners or membranes have been utilized.

MOISTURE: This flooring system may be used if the concrete has a maximum moisture vapor transmission (MVT) of 3 pounds per 1000 sq. ft. or less over 24 hours using calcium chloride testing ASTM F1869 and a maximum internal relative humidity of 75% using ASTM F2170.

VAPOR/CONTAMINATION: Testing for MVT does not guarantee against future problems. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure. Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Consult your PIP representative for approved mitigation treatments.

TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions must be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the surface temperature is more than five degree over the dew point.

Atmospheric Relative Humidity above 50%, regardless of temperature, has a dramatic effect on reducing the workable wet edge tie-in time relating to consistent color development of Protect 2000 series urethanes. Temperatures above 75F have the same impact. When encountering either of these situations or a combination of both, it is imperative to mix, apply, and finish roll the coating within 10 minutes. Exceeding this time may present roller marks or dark edge lines. Plan your application pattern ahead of time so that these wet tie-in times can be met as practically possible.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing as called for in the MSDS**
- **Jiffy® Mixer Blade**
- **Clean container for mixing material**
- **Low speed high torque drill motor**
- **High quality short nap roller covers- ¼ inch nap**
- **Application Squeegee**

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.

Mechanical Preparation: Shot Blasting or grinding the surface is the preferred method of preparation. The success of industrial diamond grinding as a concrete preparation method will vary depending on technique and the hardness of the concrete.

JOINTS: All non moving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

MIXING: Use a Jiffy®ES mix blade attach to a slow speed drill. Mix only enough material at one time not to exceed the pot life. ***Note:*** Once this material is opened and mixed it can't be resealed for later use.
The color pack should be added slowly with the mixer running first to the **Protect 2100** Part B and mixed thoroughly until color is uniform throughout the container prior to adding the **Protect 2100 AM Satin** Part A. Add **Protect 2100 AM Satin** Part A and mix all components together for 2-3 minutes. Optional **GlossGrip #** 10 should be added last after the Part A and B is mixed. Product may be thinned with a maximum of 8 ounces of clean, non-recycled xylene per mixed gallon of the **Protect 2100 AM Satin**. Never use an alcohol solvent to thin a Protective Industrial Polymers urethane coating. Please consult Protective Industrial Polymers for thinning recommendation.

APPLICATION Prior to coating, the floor must be completely free of fine dust and minute debris. It is best to mechanically wash, rinse and finally damp wipe the floor with clean towels and water. It is also recommended to rid roller of initial loose nap by wetting and painting a small scrap piece of plastic sheeting or cardboard prior to using on the floor.

SMOOTH SATIN APPLICATION
It is recommended to pan roll Protect 2100 AM Satin urethane. It must be applied between 3 and 4 mils to achieve a consistent and specified gloss. Strictly follow coverage rates for the applicable kit size. Applications applied to thin will result in less gloss whereas applications applied too thick result in more gloss. It is also recommended to finish roll after the initial roll. Material should be applied with a 3/8"-3/16 inch nap non-shedding roller. Care should be taken to overlap and cross lap. The best practice is to measure and grid the floor to be sure of the proper application rate.

TEXTURED APPLICATION Apply **Protect 2100 AM Satin** containing **GlossGrip** #10 to the floor surface utilizing a roller pan and roller. Do not squeegee as it will be very difficult to remove the squeegee lines. It is best to place a screen at the bottom of the pan to prevent the roller from picking up settled aggregate at the bottom of the pan. Roll often so as to expose aggregate uniformly. Material applied excessively heavy (greater than 3.5 mils) will exhibit irregular texture, may blister or gas and can be soft during curing. Applying the material too thin will result in a non-uniform gloss. The best practice is to measure and grid the floor to be sure of the proper application rate.

Technical Data Sheet

Protect 2100 AM Satin

Antimicrobial, UV Protective, Low-Odor, High Solids, Satin Urethane

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

CURING (DRYING): Allow the coating to cure (dry) for a minimum 24 hours after application at 75°F (24°C) and 50% RH before opening the floor to light traffic, allow more time for low temperatures and low humidity or for heavier traffic. Full coating properties may take up to 14 days to develop.
TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

READ MATERIAL SAFETY DATA SHEET (MSDS) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).
CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.
Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.
CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.
REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

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, NEGLIGENT 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.