

PRODUCT DATA SHEET

PT-209C CALIENTE HIGH TEMP. THERMAL LAG PTI THERMAL LAG SERIES

DESCRIPTION

PT-209C keeps metal “alive” at 2000F. PT-209C is a lightweight, high performance, high temperature thermal insulating barrier coating. It provides excellent environmental protection for super alloys, and other surfaces, against oxidation, failure, and other deleterious effects at extreme temperatures. **PT-209C** has been written into a number of aerospace specifications, and is currently “Mandatory FAA” for the following applications:

- Inside and outside of aluminum aircraft wheel-well doors.
- Fire thermal barrier coating where required.
- Aircraft firewall coating in the engine nacelles.
- Fireproofing material for plastic and wood structures.
- Insulation and fireproofing for built-in household appliances.
- Hot duct and pipe insulation coating.

COLORS

This coating can be provided in Eggshell White, Black and Silver. Custom colors are also available.

COATING PROPERTIES & CHARACTERISTICS

Mix Ratio, by volume	16 part Base to 1 part Catalyst
Reducer	PT-1003 Type III (Air Dry) & PT-1023 (Bake)
Adhesion	Excellent
Pencil Hardness	3H
Flexibility	Excellent
Dielectric Properties	500 volts per mil.
Taber Abrasion	670 cycles/mil, CS-17 wheel
Temperature Max	2000
Theoretical Coverage	650 sq. ft./gal. at 1 mil
Film Weight	Approx. 0.035 gm/mil/square inch
Specific Gravity	1.5

RESISTANCE PROPERTIES

Test Fluid MIL-S-8136 TYIII	Satisfactory
Engine Oil, Texaco Turbine Oil	Satisfactory
Hydraulic Fluid, MIL-H-05606	Good
Skydrol 500	Satisfactory
De-Ionized Water	No Visible Change
Corrosion Resistance	Salt Spray – no corrosion
Skydol #500	No effect

Note: Where complete resistance to all of the above fluids is required or preferred, PT-209C may be over-coated with **PT-750** polyurethane coating.

THERMAL PROPERTIES

Thermal Shock	Shock cool from 1000F to 77F (water immersion) Good response from coating.
Resistance (direct flame)	15 minutes @ 2000F before collapse of .020 x 3 x 6 blasted 2024 aluminum substrate under natural gas-oxygen flame, 5" in diameter.
Thermal lag (2,400F gas flame)	1,200F temperature drop after 20 minutes on a 15mil coating in freely circulating air.
Thermal lag (.013 film)	
300F heat source (typical)	After 60 minutes, maximum temperature through coating was 210F.
500F heat source	After 60 minutes, maximum temperature through coating was 320F.
1000F heat source	After 60 minutes, maximum temperature through coating was 535F.
Thermal Conductivity	KC @ 600F – 1.8 BTU/hr/ft. 2/deg F/in. KC @ 900F – 2.2 BTU/hr/ft. 2/deg F/in.
Expansion	11.2 x 10 ⁻⁶ in/in/deg. C. from 25C to 700C

SHELF LIFE

Shelf life is only applicable for materials stored in unopened and undamaged original factory filled containers. 1 year when stored between 50°-85° Fahrenheit.

CLEANING

All parts must be chemically or mechanically cleaned, film free , by an industry recognized cleaning specification or method. Immediately before applying **PT-209C**, wipe the substrate with **PT-1002** solvent blend.

MIXING INSTRUCTIONS

Shake component A in a paint shaker for 5 – 10 minutes for optimal results.

Admix by volume:

16 Parts	Component A (Base)
1 Part	Component B (Catalyst)

Add the Catalyst into the Base.

Admixed material should be allowed a 15-minute induction time for best application results.

Reduce: Use reducer PT-1023 for bake dry and PT-1003 Type III for air dry. Thin 3 parts admixed paint to 1 part thinner.

APPLICATION

This product can be applied using brush, roller, conventional air spray equipment, HVLP Spray system. Please consult with a PTI representative for specific equipment recommendations and settings.

1. Make sure pots, guns, and lines are purged and cleaned.
2. Mix both base and catalyst thoroughly and filter/strain before spray application.
NOTE: It is not recommended to strain flat/matte coatings.
3. HVLP Spray Pressure: 7-10psi. Conventional Spray Equipment 20-40 psi
4. Always air-blow and tack wipe the surfaces to be painted. Aircraft should be grounded to prevent static.
5. Best application results: apply 1 full coat at 1 – 2 mils thickness. Allow the coating to either air dry or bake according to the technical data and then apply 1 more full coats at 1 – 2 mils. Repeat until you have applied 7 mils to the substrate.
6. Do not allow more than 48 hours to pass before applying the second coat.
7. Recommended Dry Film Thickness is 7 mils.

NOTE: Application of PTI products requires the use of all OSHA approved safety equipment, including proper ventilation. Additionally, PTI products require the recommended temperature/humidity conditions and film thickness ranges for optimal performance. The material, hangar, and aircraft skin temperatures should be no lower than 75° F / 25° C before, during and after application.

DRYING & CURING SCHEDULE

Air Dry Times (75°F / 25°C and 50% Relative Humidity)

- Minimum of 7 days at room temperature (70F – 77F)

Force Cure (Bake)

- Each coat should be baked for 10 minutes at 200F. When application is complete or 7 mils has been applied, bake for one hour at 350F.



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EQUIPMENT CLEANUP

Use clean Acetone, IPA, PT-1023 or PT-1003 Type III. Do not allow material to dry or cure inside any equipment.

HEALTH, SAFETY, & STORAGE REQUIREMENTS

Refer to each individual material SDS (Safety Data Sheet) for specific requirements on the health, safety, storage and handling requirements. Follow all local, state, and national regulations during surface preparation, material application and cleanup.

PRODUCT INFORMATION & DISCLAIMER

Product Data Sheets are periodically updated to reflect new information. It is important to use the latest and most recent revision for the product being used. The foregoing information is accurate to the best of our knowledge. However, due to differences in customer handling, use and method of application which are not known and are beyond our control, Products Techniques, Inc. makes no warranties as to the end result.