

PRODUCT DATA SHEET

PT-209B THERMAL LAG

PTI THERMAL LAG SERIES

DESCRIPTION

PT-209B provides excellent environmental protection for super alloys, and other surfaces, against oxidation, failure, and other deleterious effects at extreme temperatures. PT-209B is written into a number of aerospace specifications, and is currently “Mandator FAA” for the following applications:

- Inside and outside of aluminum aircraft wheel-well doors.
- Fire thermal barrier coating where required.
- Aircraft fire-wall 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

Reducer	PT-1023
Adhesion	Excellent
Pencil Hardness	3H
Flexibility	Excellent
Dielectric Properties	500 volts per mil.
Taber Abrasion	670 cycles/mil, CS-17 wheel
Theoretical Coverage	650 sq. ft. ² /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

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THEMAL PROPERTIES

<ul style="list-style-type: none"> • Thermal Shock 	<ul style="list-style-type: none"> • Shock cool from 1000F to 77F (water immersion) Good response from coating.
<ul style="list-style-type: none"> • Resistance (direct flame) 	<ul style="list-style-type: none"> • 15 minutes @ 2000F before collapse of .020 x 3 x 6 blasted 2024 aluminum substrate under natural gas-oxygen flame, 5" in diameter.
<ul style="list-style-type: none"> • Thermal lag (2,400F gas flame) 	<ul style="list-style-type: none"> • 1,200F temperature drop after 20 minutes on a 15mil coating in freely circulating air.
<ul style="list-style-type: none"> • Thermal lag (.013 film) • 300F heat source (typical) • 500F heat source • 1000F heat source 	<ul style="list-style-type: none"> • After 60 minutes, maximum temperature through coating was 210F. • After 60 minutes, maximum temperature through coating was 320F. • After 60 minutes, maximum temperature through coating was 535F.
<ul style="list-style-type: none"> • Thermal Conductivity 	<ul style="list-style-type: none"> • KC @ 600F – 1.8 BTU/hr/ft. 2/deg F/in. • KC @ 900F – 2.2 BTU/hr/ft. 2/deg F/in.
<ul style="list-style-type: none"> • Expansion 	<ul style="list-style-type: none"> • 11.2×10^{-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

The surface to be coated must be chemically clean to insure proper bonding and optimum coating performance. The surface must be free of oxides, soils, greases and other contaminants. PT-209B should be applied as soon as possible following surface pretreatment.

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MIXING INSTRUCTIONS

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

Reduce: Should thinning be required **PT-1023** solvent may be used in proportions determined by the applicator.

APPLICATION & CURING

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 paint and reducer 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 20-35psi
4. Always air-blow and tack wipe the surfaces to be painted. Aircraft should be grounded to prevent static.
5. Graduated force cure for 1 coat at 1 – 2 mils then bake for 60 minutes at 350F.
6. Graduated force for 2 coats – Apply the first coat (1 – 2 mils) then bake for 30 minutes at 200F, followed by 60 minutes @350F for the second coat.
 - **Note:** Infrared heat lamps may be used for spot patch repairs.
7. Recommended Dry Film Thickness is 2 – 3 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.

EQUIPMENT CLEANUP

Use clean Acetone, IPA or PT-1023. 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.