



PRODUCT DATA SHEET: CERAM-KOTE TTM

Description: CeRam-Kote TTM is ceramic coating engineered to provide excellent abrasion and corrosion protection in **the aerospace industry.**

TECHNICAL DATA

Volume Solids: CeRam-Kote TTM 72% +/- 2%

VOC: 1.63 lb/gal (196 g/liter) less water

Number of Coats: Two coats, with each coat being 4-5 mils, 100-125 microns.

Dry Film Thickness: CeRam-Kote TTM should be applied holiday-free at a minimum of 6 mils (150 microns) with a preferred thickness of 8 mils (200 microns).

Cure Time: 6-8 mils DFT (150-200 microns) air dries to a touch-dry finish within three (3) hours at 72°F (22.2°C) and dries to a 70% cure in twelve (12) hours. Cure times lengthen at lower temperatures and shorten at higher temperatures. If the coating is to be exposed to a critical service environment, coating should be fully cured before placing into service.

If coating is to be placed into service within 6 to 8 hours of application:

Apply heat using a heat gun, holding 6" away from coated substrate, moving the heat gun side to side in order to not focus heat in one spot, never stop waving the heat gun over the surface. It should take approximately 3-minutes to heat up to around 150F (65C), then remove heat. Product will then be ready for service in 6 to 8 hours.

Surface Preparation: **Steel, Stainless Steel, Titanium, Aluminum**
Grit blast, with sand, steel, garnet, plastic or other media, etc., all metal material ideally to a NACE-1 (SSPC-SP5, Swedish-Sa 3) White Metal but no less than NACE-2 (SSPC-SP10, Swedish-Sa 2 ½) Near White Metal finish. At all times, an anchor profile should be 2 to 2 ½ mils (50 - 62.5 microns). For stainless steel and aluminum, if necessary, blasting for profile may be done in the days prior to the application, but the surface must be additionally sweep or brush off blasted the day of the application to ensure all oxides have been removed and chlorides are at a minimum.

Fiberglass and composite materials

New surface: For new fiberglass, clean and wipe all surfaces with Acetone or Methyl Ethyl Ketone (MEK) prior to profiling to remove mold release agents, wax and contamination prior to abrading. Fiberglass and composite materials must have a water content of less than 5%. Rough or abrade with 80-grit to 100-grit sandpaper. Remove contamination via pressure washer or solvent wipe before coating application. Old Surface: When preparing old or previously used fiberglass, composite, or plastic material, it is important to clean the substrate to ensure all contaminants are removed before abrading. Ceram-Kote recommends hot water pressure washing (at least 3,000 psi) using trisodium phosphate or detergent. Allow to dry. Rough up or abrade with 40-grit to 80-grit sandpaper. If fiberglass is previously coated with Ceram-Kote, abrade with 100-grit sandpaper.

Galvanized

If the surface is newly galvanized (that is, less than 48 hours out of the zinc kettle), the surface can be coated after a slight roughening of the surface (i.e., 100 grit sandpaper or abrasive sweep blast*). If the surface of the galvanized part has been exposed to the environment for more than 1 year, the surface can be coated after the dirt, grease, oils, and salt contamination have been removed (i.e., either solvent wipe, alkaline wipe, etc). The most difficult time to paint galvanized steel is between 1 day and 1 year after it has been galvanized. Ceram-Kote recommends sweep blasting* of the galvanized surface to remove the natural corrosion by-products of the galvanized surface {i.e., ZnO and Zn(OH₂)}.

**Care should be taken to prevent removing too much of the galvanized coating. Particle size for a sweep blast of galvanized steel should be between 200 and 500 μ m.*

Mixing Ratio: Eleven (11) parts of Part A to one (1) part of Part B by volume
Eighteen and one-half (18.5) parts of Part A to one (1) part of Part B by weight

Mixing:	<p>CeRam-Kote TZM contains a high loading of ceramic particles which must be placed into full suspension with the resin prior to application. CeRam-Kote TZM is packaged in two cans, Part A (resin and ceramics) and Part B (curing agent). Shake Part A (coating) with a Cyclone air-powered shaker or mix Part A with a paddle mixer until all ceramic powders are suspended in the resin. Time required to place ceramics into suspension varies according to temperature and length of material storage time. At 72°F (22.2°C), generally a four (4) to six (6) minute shake will place the ceramic powders into suspension. Regardless of time needed, shake all ceramic material into suspension prior to proceeding. Failure to properly mix will keep CeRam-Kote TZM from performing or curing properly. Check the can to assure all solids are in suspension prior to proceeding to the mixing step.</p> <p>Combine Part A (coating) and Part B (curing agent) and shake again until both parts are thoroughly mixed (<i>when mixing quart cans only, pour Part A into Part B. Use this procedure for quarts only due to the small amount of curing agent in the Part B can.</i>) Shaking time is temperature dependent, but a two (2) to four (4) minute shake at 72°F (22.2°C) should thoroughly mix the components. However, caution must be used to prevent heat buildup. No induction time is needed before application.</p>
Pot Life & Shelf Life:	<p>Pot life for CeRam-Kote TZM at 72°F (22.2°C) is approximately four (4) to six (6) hours. Colder temperatures will increase the pot life and warmer temperatures will decrease the pot life. Keep cans out of direct sunlight to prevent heat buildup. Storage should be in a dry enclosed area under 85°F (29°C). Shelf life is two (2) years.</p>
Thinning:	<p>Adjust viscosity with MEK, Acetone, Toluene or Xylene. Maximum recommendation is 15%.</p>
Application:	<p>Spray apply for best results using conventional, airless, HVLP or cup gun. The air source must be dry. The compressed air source should be outfitted with air dryers as needed to supply moisture-free air. Use pressure feed equipment such as high volume, low pressure equipment or Binks 2001 spray equipment with a 563CVT needle, 63CVT fluid nozzle and 63PB air nozzle. Airless: use reversible carbide tip with orifice size of 0.019-0.021 inches. If applying with roller, use short nap, such as 1/4" (.244 mm), or even a foam roller works well.</p> <p>After thoroughly stirring CeRam-Kote TZM, strain it with a standard paint strainer and pour CeRam-Kote TZM into the spray equipment.</p> <p>Apply a first pass of four (4) to five (5) mils (100-125 microns) WFT and allow sufficient time for solvent to flash off. At 72°F (22.2°C), 30-40 minutes is sufficient. Apply a second pass of four to five mils (100-125 microns) for a total DFT of six to eight mils (150-200 microns) DFT. Cure time is temperature dependent.</p> <p>Apply additional mils without incurring runs or sags if the finished product requires thicker coverage. Whenever possible, apply second coat in a cross-coat method.</p>
Climate:	<p>Use CeRam-Kote TZM only if the substrate temperature and ambient air temperature is above 40°F (4.4°C). No coating should be permitted when substrate is wet from rain or dew, when surfaces are less than five degrees Fahrenheit (three degrees Celsius) above the dew point and holding or when relative humidity is greater than 85%. Moisture will inhibit the catalyst reaction and CeRam-Kote TZM will not cure or perform properly.</p>
Holiday Detection:	<p>CeRam-Kote TZM is classified as a thin-film coating and should be tested for defects and holidays using a 67½ volt, wet sponge spark detector set at 80,000 ohms resistance, such as a Tinker and Razor model M-1.</p>
Repairs:	<p>If application of the coating is less than seventy-two (72) hours old and has not been exposed to contamination, repair by wiping with Acetone, MEK or Isopropanol (99% pure) and then re-apply CeRam-Kote TZM. If contaminated or more than 72 hours old, first sand with appropriate grit sandpaper, then repeat repair process.</p>
Cleanup:	<p>Purge and clean spray equipment within thirty (30) minutes of the final spray. Flush equipment with Acetone, MEK or Isopropanol (99% pure) until solvent sprays clear. Disassemble and clean equipment to manufacturer's recommendations. Material left in spray equipment will solidify and damage equipment. Use precautionary measure applicable to any catalyzed material.</p>
Safety:	<p>See individual product label for safety and health data. A Material Safety Data Sheet is available upon request.</p>