



PRODUCT DATA SHEET: CERAM-KOTE 54® TZM

Description: CeRam-Kote 54® TZM is ceramic coating engineered to provide excellent abrasion and corrosion protection in **the aerospace industry.**

TECHNICAL DATA

Volume Solids:	CeRam-Kote 54® TZM 72% +/- 2%
VOC:	1.63 lb/gal (196 g/liter) less water
Number of Coats:	One Coat, two passes (each pass 4-5 mils, 100-125 microns)
Dry Film Thickness:	CeRam-Kote 54® TZM should be applied holiday-free at a minimum of 6 mils (150 microns) with a preferred thickness of 8 mils (200 microns).
Cure Time:	A two-pass film of 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.
Surface Preparation:	Bonding strength depends on proper preparation of the surface to be protected for long-term performance of the product. The substrate should be free of oil, grease and salt/chloride contamination. Specifications call for a white metal (NACE 1, SSPC-SP5, Swedish Standards SA-3) finish with a 1-2.5 mil (25-62.5 microns) anchor profile. Surface preparation should be no less than a near white (NACE 2, SSPC-SP10, Swedish Standards SA 2½) finish. Cleanliness is the most important step to produce a coated surface that will perform and last. Call Freecom for surface preparation recommendations of materials such as aluminum, brass, plastic, fiberglass and/or concrete.
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:	CeRam-Kote 54® TZM contains a high loading of ceramic particles which must be placed into full suspension with the resin prior to application. CeRam-Kote 54® 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 an Edsan's Jiffler 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 54® TZM from performing or curing properly. Check the can to assure all solids are in suspension prior to proceeding to the mixing step. 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.
Pot Life & Shelf Life:	Pot life for CeRam-Kote 54® 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.
Thinning:	Adjust viscosity with small amounts of MEK, Acetone, or Isopropanol (99% pure). Use caution when adjusting the viscosity. A little goes a long way. Only a small portion of the total solution is resin and the resin is the only ingredient that can be thinned. Thinning dilutes the high solids of CeRam-Kote 54® TZM, creates excessive overspray and can cause some color changes in bright colors.

- Application:** 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).
- After thoroughly stirring CeRam-Kote 54® TZM, strain it with a standard paint strainer and pour CeRam-Kote 54® TZM into the spray equipment.
- 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.
- 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.
- Climate:** Use CeRam-Kote 54® 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 54® TZM will not cure or perform properly.
- Holiday Detection:** CeRam-Kote 54® 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.
- Repairs:** 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 54® TZM. If contaminated or more than 72 hours old, first sand with appropriate grit sandpaper, then repeat repair process.
- Cleanup:** 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.
- Safety:** See individual product label for safety and health data. A Material Safety Data Sheet is available upon request.

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