

# KrystalKote™ “CTF” DATA SHEET

**KrystalKote™ CalTrans Formula (CTF) Gloss, clear** is a two-component, high-solids, low VOC, cross-linked, aliphatic polyurethane coating possessing outstanding resistance to harsh environmental conditions; graffiti; mold, mildew & microbe growth; caustic chemicals; abrasion; impact; and flexing. **KrystalKote™ CTF** is resistant to the effects of U-V and I-R: clear will not yellow, clear-coated underlying colors and custom-tinted **KrystalKote™** will not noticeably fade for 10-years™. **KrystalKote™ CTF** has proven flexibility and tolerance to expansion & contraction, providing a crack-resistant surface, desirable in harsh environments such as salt-air coastal, high heat desert, frigid mountainous, and high humidity of the Northwest & the Southeast. **KrystalKote™ CTF** is completely resistant to hydraulic, lubricating and cutting oils, alcohols, food stains, normal acids & alkalies, salts, solvents, fuels, paints, inks, asphalt, wet concrete, algae, mildew, fungal molds, pesticides, fertilizers, creosote, etc., and temperatures to 450°F. **KrystalKote™ CTF** is CalTrans-Approved and *specified* as a *Graffiti-Resistant* clearcoat for traffic signs & soundwalls, and is impervious to most graffiti solvents & pigments, cleaning efficiently with approved graffiti removers, such as **GT-1000™** or **GT-2000™**.

## **CalTrans Approvals & Specifications:** **Office of Safety and Health**

Dec 1994: Report #94-1014-D07-56-VAP-GRC: CalTrans-sponsored *Occupational Exposure Investigation: KrystalKote™ Application*, by an independent Certified Industrial Hygienist, Michael Conner, of ACUMEN Industrial Hygiene, Inc.

## **Office of Safety and Health**

January 17, 1995: CalTrans *Letter of Approval* For Use: New Product #NPE 94-04-006 (**KrystalKote™**).

## **Office of Materials Engineering & Testing Svcs.**

January 19, 1999: *CalTrans Lab Approval Report: KrystalKote™ Gloss, clear* (CTF) exceeds standard testing, plus 3000 hrs Xenon-arc weatherometer. Andy Rogerson, Sr. Chemical Test Engineer.

## **Office of Materials and Foundation**

February 10, 1999: CalTrans *Letter of Certification: KrystalKote™* meeting all requirements for graffiti coating. Lee Taubeneck, Sr. Transport. Engineer.

## **DGS/Procurement Division**

January 27, 2000: CalTrans Invitation For Bid - Solicitation #47787: Aluminum Single Sheet and Laminated Panel, Ground-Mounted Signs; and Aluminum Single Sheet Formed Signs; and Laminated Panel Signs for Overhead Structures. *TradeWinds' KrystalKote™ specified as only "Spray-On Coating"*. George Hortin, Buyer.

## **Walt Disney Imagineering**

**KrystalKote™** specified as graffiti-resistant coating for dedicated signs, soundwalls, parking structures, “flyovers”, bridges, etc., for new CalTrans District 12 I-5 construction, and all other Disney locations.

## **Typical Approvals & Specifications:** **City of Los Angeles**

1.) Dec 16, 1994, Operation Clean Sweep, Dept. of Public Works to Bureau of Street Maint, recommends specifying **KrystalKote™** as a tested and approved graffiti-resistant, Bus Chrome yellow, or clearcoat, for new heavy equipment purchases.

2.) Sep 15, 1995 Dept of Public Works, Specifications for Rotary Street Sweepers, specifying **KrystalKote™** as approved coating.

## **County of Los Angeles**

**KrystalKote CTF** specified by County Architect as permanent graffiti-resistant clearcoat for new construction of Health Centers & other structures.

## **City of Las Vegas**

April 27, 1998 Street Department Sign Shop letter attesting to superior performance and cost efficiency of **KrystalKote™** protected traffic signs.

## **Daniel, Mann, Johnson, Mendenhall (DMJM)**

**KrystalKote™** specified as graffiti-resistant architectural coating.

## **HDR Engineering**

**KrystalKote™** specified as marine environment corrosion- and graffiti-resistant coating for steel train bridge & concrete abutments on *Coaster* route.

## **City of Gardena**

**KrystalKote™** specified as graffiti-resistant coating for monuments & other structures.

## **City of Inglewood**

**KrystalKote™** specified as graffiti-resistant coating for murals, playground equipment, monuments & other structures.

## Physical Properties

V.O.C. tinted:	192 grams/liter (1.6 lbs/gal)
clear:	228 grams/liter (1.9 lbs/gal)
SCAQMD Rating:	Extreme Performance
Coating	per Rule 1107 para (12); Indust. Maint. Graffiti
Coating	per Rule 1113 para (17).
Coverage - theoretical:	1280 ft <sup>2</sup> /gal at 1-mil DFT.
actual on metal:	@ 212 ft <sup>2</sup> /gal at 4-mil DFT.
actual on porous:	@ 125 ft <sup>2</sup> /gal at 4-mil DFT.
Solid Content (by wt):	80% (clear) -85% (tinted)
Consistency:	Brushable/Sprayable
"Pot" Life	approx. 2-hr at 75°F
"Re-coat" Time	approx. 45-min at 75°F
"Tack Free" Time:	approx. 2-hr at 75°F
"Stack" Time	approx. 8-hr at 75°
"Full Cure" Time	approx. 72-hr at 75°
Adhesion: wood, rubber,	Excellent on: metals, concrete, masonry, vinyl flooring, tile, etc.
Tensile strength:	6,000 P.S.I.
Elongation:	100%
M.E.K. 100-rub test:	Pass
Impact resistance: drop: cracking.	Excellent: 1-lb. ball/5-ft No chipping or
Flexibility: 1/8" chip/cracking.	Excellent: 180° bend over mandrel: No
Taber abrasion: Abrader	Outstanding: Taber with CS-17 wheel and 1 kg pressure. Film loss: 1-mil per 13,000 revolutions.
Salt-spray: deterioration/lifting 90°F and	No film after 1,500 hours at 20% salt solution.
Weather resistance:	Excellent.
10-Year Warranty:	See Limited Warranty

Available from:

## TradeWinds International

Long Beach CA

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Fax: 562-432-1065

E-mail: [TradeWinds@usa.com](mailto:TradeWinds@usa.com)

[www.TWI-Coatings.com](http://www.TWI-Coatings.com)

## INDEPENDENT VERIFICATION

An "Application Report" by Angus Chemical Company (Biocides Division) is available to verify and certify the efficiency of the biocide used in \***KrystalKote™** CTF to inhibit spores, fungus, molds, and similar microbes. The following table is derived from this standardized study:

### Riedel-deHaen Dry Film Mildewcide Test

Sample	Rating	Status
* <b>KrystalKote™</b>	1	Pass
Generic Polyurethane Coating #1	5	Fail
Generic Polyurethane Coating #2	4	Fail
Petri-Agar Control	6	Control

### Conclusion:

"The present level of *AMICAL Flowable* is sufficient to protect \***KrystalKote™** from fungal attack, resulting in NO microbial growth".

### Ratings:

- 1 = Coating NOT molded, zone of fungal inhibition around test sample greater than 3-mm.
- 2 = Coating NOT molded, zone of fungal inhibition around test sample less than 3-mm.
- 3 = Coating NOT molded, no zone of fungal inhibition around sample.
- 4 = Coating slightly grown over: less than 10%.
- 5 = Coating clearly grown over: less than 30%.
- 6 = Coating heavily grown over: more than 30%.

\*For this trial by Angus Chemical Company, sample was submitted under original name of Ceramkote

## Approved Substrates

Concrete, CMU, steel, aluminum, glass, glazed tile, open-pore tile, grout, mortar, plastic, water-based paint, primer paint, polyurethane paint, epoxy paint, wood, particle board, vinyl banners, vinyl flooring, signage, VCT tile, asphalt tile, poured flooring, PMMA & other acrylics, etc.

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