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KD Series DIAMOND™ Conversion Varnish

The KD Series DIAMOND™ is a line of solvent borne, two component, alkyd/amino resin-based conversion varnishes. They are clear topcoats that feature fast dry and easy sanding along with outstanding chemical, moisture & abrasion resistance. The KD Series DIAMOND™ Conversion Varnishes can be used in a self-sealing system or in conjunction with VS4 QUICKSEAL™ Post-Catalyzed Vinyl Modified Sanding Sealer for high demand furniture and cabinet applications.

KD Series DIAMOND™ are extended pot-life products. After catalyzation KD Series has a pot-life of up to five days.

SUGGESTED APPLICATIONS:

- Cabinets
- Household furniture
- Interior trim and millwork
- Office furniture
- Kitchen and bath components
- High demand furniture

KEY PERFORMANCE FEATURES

- Extended pot-life
- Excellent hardness
- Fast dry
- Outstanding mar and scratch resistance
- Ultra-low formaldehyde
- Outstanding chemical and moisture resistance
- Excellent flow and levelling
- Exceeds NAAWS System #5: Conversion Varnish Standards

RELATED PRODUCTS

VS4 QUICKSEAL™ Post-Catalyzed Vinyl Modified Sealer
B7812 ORACLE™ Premium Wiping Stain
B7655 ORACLE™ Classic Spray Stain

PHYSICAL PROPERTIES

Available Sheens	0, 15, 25, 40, 80
Weight Solids	42% ±2
Volume Solids	36% ±2
Viscosity	25-30” @ 25°C Ford 4
Specific Gravity	0.9700 +/- 0.01 gms/cc @ 25°C
VOC	563 g/l
Typical coverage	8-10 m^2 / ltr @ 1 mil dry

ADDITIONAL CHARACTERISTICS

Catalyzation	5% by volume of 1CAT Catalyst
Pot-Life	Up to 5 days (if stored in closed pails @ 25°C)
Reduction	Up to 10% by volume T4409 Lacquer Thinner
Retarder	n/a
Clean-up	CA4420 Gun Wash
Shelf-life	1 year from date of manufacture

Dry Times
26°C (~78°F) 50% RH

To Touch	15 minutes
To Sand	30-40 minutes
To Stack/Pack	12 hours

Note: Drying times will decrease at higher temperatures/lower humidity and will increase at lower temperatures/high humidity

COATING PREPARATION - Ensure product is stirred well and brought to room temperature before use. Product may be sprayed by conventional, airless and air-assisted airless spray. Add 5% 1CAT Acid Catalyst to unreduced product slowly under agitation. Thin with lacquer thinner as required, agitate. Pot life up to 5 days at room temperature in closed pails.

SURFACE PREPARATION - Wood surface should be clean, dry and free from any oil or grease. Moisture content of the wood should be 7-9%. Stains, colour coats, glazes etc. should be applied according to manufacturer’s directions should be dried prior to application of sealers/topcoats. Multi-step colourant systems should be avoided unless they are thoroughly tested for adhesion and compatibility. All colour systems should be examined for colour fastness / fade resistance prior to use. For best results use Katilac stains, toners or colourant systems. Contact a Katilac Tech Service Representative for colour system recommendations.

APPLICATION - This product is designed to be applied in ambient conditions of 12-32°C (~55-90°F) and below 50% relative humidity.

KD Series DIAMOND™ Conversion Varnishes can be used self-sealing or in conjunction with VS4 QUICKSEAL™ Post-Catalyzed Vinyl Modified Sanding Sealer. Apply product in full uniform coats ideally applied at a rate of 3 to 4 mils wet. Total film thickness of the finished system (sealer and topcoat) should not exceed 4 dry mils. Coating should be thoroughly dried and sanded smooth between coats. Sand with 240-320 grit professional finishing stearated, silicon carbide sandpaper. It is recommended that the finished item be conditioned for 12 hours at room temperature prior to stacking and packing.

SAFETY – During application, always wear eye protection, gloves and appropriate work clothing to minimize contact. Use a respirator and safety glasses at all times when spraying. Explosion proof ventilation is required with special consideration for enclosed or confined areas. Use caution when handing flammable liquids and eliminate sources of ignition and uncovered containers from the work place. Vapours formed from this product may travel or be moved by air currents and ignited by pilot lights, light switches, other flames, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from the product.

KD Series DIAMOND™ Conversion Varnishes (cont'd)

PERFORMANCE TESTING / FILM CHARACTERISTICS
All performance testing is based on a composite of ASTM, AWI, ANSI and KCMA Standards

KCMA Testing (ANSI/KCMA A161.1.1.2000)
Test samples consist of solid red oak coated at 4 mils dry and aged for 21 days at room temperature

A. Chemical Testing
- Vertical position for 24 hrs, water washed, dried, examined

Vinegar	Pass
Orange Juice	Pass
Ketchup	Pass
Olive Oil	Pass
Mustard	Pass
Lemon Juice	Pass
Grape Juice	Pass
Coffee	Pass
100 Proof Alcohol	Pass

B. Detergent & Water Resistance Test
- PASS: No signs of blistering, whitening, delamination, swelling

C. Heat Resistance Test
- PASS: No signs of discolouration, whitening, delamination or swelling

D. Hot/Cold Cycle Test
- PASS: 10 cycles with no signs of discolouration, blistering, cold cracking or any film failure

Hot Print Resistance (ASTM D 2091-96)
- Test samples consisted of 1 mil dry film aged for 24 hours at room temperature prior to print testing
- Duck cloth under a weight of 4 psi was then placed on dry film surface for a defined temperature/time
  72F (18 hrs) 4 psi: pass
  120F (1 hr) 4 psi: pass
  140F (1 hr) 4 psi: pass

Hot/Cold Cycling Test (ASTM D 1211-97)
- Test samples were coated on red oak at 4 mils dry and aged 21 days at room temperature prior to testing
- One cycle consisted of:
  - 120F / 70% RH for 1 hour
  - Room temperature for 1 hour
  - -5F for 1 hour
- Specimens examined for discolouration, blistering, cold cracking and film failure
- No signs of failure at 10 cycles

Flammability Testing (ASTM E 84-08a) Surface Burn Rating
- Test samples consisted of fiberglass reinforced cement board coated with 4 mils dry of KD DIAMOND™ Series
- Samples were aged for 21 days at room temperature prior to testing
- Flame Spread Index: 5.0 Class 1 / Class A
- Smoke Development: 5.0 Class 1 / Class A

AWMAC / AWI (NAAWS Performance Standards Testing)
System # 5 Conversion Varnish (Clear):
- Standard Score - 129/135
- KD Series score - 131/135

Section A: Chemical Resistance Testing ASTM D1308

Vinegar	5	Red Wine	5
Lemon Juice	5	Windex	5
Orange Juice	5	Fantastic 409	5
Ketchup	5	Lysol	5
Coffee	5	33% Sulphuric Acid	5
Olive Oil	5	77% Sulphuric Acid	2
Boiling Water	5	28% Na_4OH	5
Cold Water	5	Gasoline	5
Nail Polish Remover	5	Murphy's Oil Soap	5
Household Ammonia	5	Vodka 100% Proof	5
VM&P Naphtha	5	1% Detergent	5
Isopropyl Alcohol	5	10% TSP	5

Rating: 1: Poor 2: Fair 3: Good 4: Very good 5: Excellent

Section B: Wear Resistance / ASTM D4060 Abrasion Resistance
Rating: 4/5

Section C: Cold Check Resistance / ASTM D1211
Rating: 5/5

Section D: Cross Hatch Adhesion / ASTM D3359
Rating: 5/5

TOTAL SCORE: 131/135

DISPOSAL - Disposal of chemicals and their solutions should be done according to local, provincial and federal regulations. Safety Data Sheets are available and should be consulted when handling products. These products are for industrial and professional use only; Application directions must be followed

WARRANTY – Katilac Coatings Inc. warrants that its products are free from defects in manufacture for a period of one (1) year from date of purchase, if used prior to expiration date and applied and used in accordance with Katilac Coatings' most current published specifications applicable to such products. Katilac Coatings Inc. expressly disclaims all other warranties, express or implied, including the implied warranties of merchantability and fitness for purpose. Katilac Coatings Inc. disclaims all liability for incidental, consequential or indirect damages of any nature whatsoever. This warranty cannot be changed or modified whether by course of dealing, custom or trade or otherwise, unless agreed to in writing by Katilac Coatings Inc.

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