ChemMasters
SPECIALTY CONSTRUCTION PRODUCTS

DURAGUARD 420 MMA

CLEAR, HIGH BUILD METHYL METHACRYLATE TOP COAT

EPA VOC

PRODUCT DATA

DESCRIPTION

Duraguard 420 mMa is a two-component, high build, methyl methacrylate (mMa) coating. The two basic components that make up **Duraguard 420 mMa** are **Duraguard 420 Resin** and **Duraguard mMa Catalyst**. **Duraguard 420 mMa** dries clear and is intended for use as a topcoat on decorative systems including flake and colored quartz broadcast systems. When a pigmented methyl methacrylate topcoat is desired, use **Duraguard 425 mMa**.

An accelerator additive, **Duraguard mMa Accelerator** is available for use in cold temperatures (below 40°F).

USES

- **Duraguard 420 mMa** is used as a topcoat (wearing surface) for a methyl methacrylate flooring system. It can be applied directly of the primer coat (**Duraguard 400 mMa**) or over a body coat of **Duraflow 450 mMa**.
- Surfaces subject to high levels of abrasion, impact loading including industrial, commercial and warehousing applications
- Food or chemical processing plants subjected to high levels of thermal cycling, aggressive cleaning and chemical attack.

ADVANTAGES

- Rapid curing (less than 1 hour) and recoat window for minimal downtime
- Can be applied at temperatures as low as -20°F
- Excellent resistant to deterioration or discoloration from ultraviolet light (UV) exposure
- Superior resistance to alcohols, petroleum products and aromatic solvents
- Clear and pigmented formulations available.

TECHNICAL DATA

V.O.C. Content:	0 gm/L
USDA approved for incidental contact at federally inspected meat, fish and poultry plants	
Density	8.09-8.42 lbs./gal 0.97-1.01 g/cm^3
Viscosity (ASTM D-2393)	80-90 cps
Solids	100%
Water Absorption (ASTM D-570)	<0.1%
Compressive Strength (ASTM C 109)	7500 psi 52MPa
Tensile Strength (ASTM C 307)	2100 psi 14 MPa
Flexural Strength (ASTM C 348	3100 psi 21 MPa

CHEMICAL RESISTANCE

Distilled water	R	Salt water	R
Alkalies			
Ammonia 10%	R	Caustic Soda 50%	R
Potassium Hydroxide 50%	R		
Acids			
Acetic Acid 10%	R	Acetic Acid 30%	R
Chromic Acid 40%	R	Citric Acid 30%	R
Formic Acid 10%	R	Formic Acid 30%	C
Hydrochloric concentrate	R	Lactic Acid 30%	R
Nitric Acid 10%	R	Nitric Acid 30%	C
Oxalic Acid 10%	R	Phosphoric Acid 40%	R
Sulfuric Acid 50%	R		
Salts/Salt Solutions			
Ammonium Chloride	R	Ammonium Sulfate	R
Calcium Chloride	R	Potassium Chloride	R
Sodium Chloride	R	Sodium Carbonate	R
Sodium Hypochlorite	R	Sodium Sulfate	R
Petrochemicals			
Crude Oil	R	Diesel Fuel	R
Gasoline, high octane	R	Kerosene	R
Mineral Oil	R	Parafin Oil	R
Petroleum	R	White Spirits	R
Solvents			
Acetone	N/R	Benzene	C
Ethanol 30%	R	n-Heptane	R
Isopropyl Alcohol	C	Perchloroethylene	R
Phenols	R	Styrene	R
Turpentine	R	Toluene	C
Xylene	C		
Miscellaneus			
Vegetable Oils	R	Animal Fats	R
Fruit Juices	R	Vegetable Juices	R
Wine	R		

Key: R= Recommended, C= Consult ChemMasters technical service staff.

Application Temperature -20 to 95°F (-18 to 35°C)

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Technical Data continued

Pot Life	10-20 minutes
Cure Time	20-40 minutes

Packaging

Duraguard 420 Resin is available in 5 gallon (18.9 Liter) pails or 55 gallon (207.9 liter) drums. **Duraguard mMa Catalyst** is packaged in 5 pound (2.3 kg) pails packaged 4 to a case or 55 pound (24.9 kg) boxes. **Duraguard mMa Accelerator** is packaged in 1 gallon (3.7 liter) pails. Resin, catalyst and accelerator are sold separately.

Estimating Guide

15 mils	100 Ft.^{2}/gal	2.5 M^2/L

Directions

Surface Preparation: The surface must be primed with **Duraguard 400 mMa** and clean. For complete surface assessment and preparation guidelines, refer to ChemMasters Technical Bulletin, *Floor Preparation Guide*, or contact ChemMasters technical service staff. Allow any previous applications of methyl methacrylates to dry for 1-2 hours, before applying **Duraguard 420 mMa**.

Mixing**:** The amount of **Duraguard mMa Catalyst** required for each gallon of **Duraguard 420 Resin** is dependant on the surface temperature of the floor. Mixing too much catalyst will cause the material to set extremely quickly and may result in improper bonding to the previous coats of methyl methacrylate. Insufficient catalyst may prevent proper curing Refer to Duraguard mMa Mixing Chart to ensure proper catalyst dosing. **Duraguard mMa Accelerator** is used in applications at temperatures below 40ºF. Refer to Duraguard mMa mixing chart for details on dosing of these components.

Duraguard 420 mMa must be thoroughly mixed before application. Add the appropriate amount of **Duraguard mMa Catalyst** for each gallon (liter) of **Duraguard 420 Resin.** Add the appropriate amount of **Duraguard mMa-Accelerator** if applicable. Mix for 30 seconds using a mechanical drill equipped with a spiral type mixing prop. Take care not to incorporate excess air into the mix.

Application: Immediately pour all of the mixed **Duraguard 420 mMa** onto the primed concrete or previous methyl methacrylate coats, spread with a serrated squeegee maintaining a 15 mil wet film thickness, then backroll into place with a short nap, solvent resistant roller.

Recoat: **Duraguard 420 mMa** can be recoated once the whole floor is dry to the touch, usually within one to two hours after placement.

Cleanup

Clean tools and equipment before material dries and sets with xylene or xylol.

Limitations

- All methyl methacrylate installations require good ventilation. Proper ventilation assures that the mMa vapors, which are heavier than air are removed from the surface of the floor. Removal of these vapors allows the for a hard continuous film to form at the surface
- **Duraguard 420 mMa** is not designed for application in direct sunlight. The topping may blister or pinhole due to out gassing of air in the concrete and high substrate temperatures.
- **Duraguard 420 mMa** is exothermic, generating a large amount of heat when initially mixed. Do not mix more than 2 gallons of **Duraguard 420 mMa** at a time. A large mass of material can ignite. Immediately after mixing pour all of the material onto the floor to dissipate the heat.
- Exposure to excessive heat may cause premature gelling and reduce the working time.
- **Duraguard 420 mMa** is extremely fast setting. Floors must be completely prepared and ready before material is mixed.
- Good ventilation of the repair area is strongly recommended to aid in the thorough cure of **Duraguard 420 mMa**.
- **Duraguard 420 mMa** will appear to have a bluish cast in the pail, but the material dries clear on the floor.

Storage

Store factory sealed containers of unmixed material at 50°-75°F (10°-24°C) and away from direct sunlight and sources of heat. Temperatures in excess of 75°F (24°C) cause premature aging of the material. Shelf life of properly stored material is one year from date of manufacture.

Caution

Flammable liquid: Keep away from heat or open flames. Use with adequate ventilation. May cause skin, eye and respiratory tract irritation. Do not take internally. Keep out of reach of children.

Organic Peroxide: Keep away from all sources of heat including sunlight. Causes eye, skin and respiratory tract irritation. May cause allergic skin reaction. Do not take internally. Keep out of reach of children.

All label precautions and MSDS must be fully understood before using this product.

This Product is Formulated and Labeled for Industrial and Commercial Use Only

FOR BEST RESULTS AND SAFEST USAGE, USER IS SPECIFICALLY DIRECTED TO CONSULT THE CURRENT MATERIAL SAFETY DATA SHEET AND PACKAGE LABEL FOR THIS PRODUCT