REMR MATERIAL DATA SHEET CM-SE-1.9

CONCRETE COATING: CHEMGLAZE M331

1. NAME

Chemglaze M331

2. MANUFACTURER

Lord Chemical Products
2000 West Grandview Blvd.
PO Box 10038
Erie, PA 16514-0038
Telephone: 814-868-3611

3. DESCRIPTION

Two-package, ASTM Type IV, elastomeric polyurethane coating.

4. USES & LIMITATIONS

Uses: Chemglaze elastomeric polyurethane coatings function especially well in the most aggressive of environments. With their inherent flexibility, corrosion resistance, and energy-absorptive properties, these coatings are used in the mining, aircraft, and marine industries to protect metallic substrates. Chemglaze elastomeric coatings are also unaffected by thermal expansion and contraction as well as structural motion. These elastic properties make them useful in protecting spray-applied polyurethane foam insulation on storage tanks and reactor vessel walls.

Limitations: Personnel who handle, mix, and spray Chemglaze elastomeric coatings must protect themselves from vapors, liquid coatings, and spray mist. Protective creams, safety glasses, solvent-resistant gloves, protective clothing, and NIOSH-approved respirators must be used. Contaminated clothing should be washed by an industrial laundry or discarded. Direct, mist, or vapor contact with the solvents, urethane prepolymers, and curing agents may cause skin or respiratory irritation in some individuals.

Spray applicator personnel should wear a fresh air-supplied hood while spraying coating in a confined area. Helpers, supervisors, and visitors to the spray site should use approved respiratory protection.

Chemglaze M331 should be kept away from heat, sparks, and open flame. Avoid prolonged contact with skin. Wash thoroughly after using or before smoking or eating.

Chemglaze M331 may be harmful or fatal if swallowed. If swallowed, do not induce vomiting. Call a physician immediately.

5. MANUFACTURER'S TECHNICAL DATA

Typical physical properties of mixed Chemglaze elastomeric coatings:

Mix ratio A/B by volume	3/1 Supplied in premeasured kits
Percent solids:	
by weight	56
by volume	52
Volatile organic compounds:	
lb/gal	3.5
g/ℓ	420

Working pot life at 77° F (25° C) and 50-percent relative humidity	3 hr
Tack free time	30 min

Typical physical properties of cured films:

Tensile strength, T_b ASTM D 412 Method A, Die C	5,000 psi
Percent elongation, E_b ASTM D 412 Method A, Die C	500 percent
Taber abraser CS17 1,000 g/1,000 cycles	No Loss
Durometer (Shore A)	110

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Application methods: Part A of M331 and M431 contains a moisture-sensitive urethane polymer; consequently, Part A should be kept dry and stored away from areas subject to water exposure to prevent premature curing.

Should Part A be exposed to temperatures below 32° F (0° C), it is necessary to warm the product to 60° F (15.6° C) before use. Part A is thick and has a gel-like appearance; it must be mixed well (10 to 15 min with a power stirrer) before adding Part B.

Part B, or M201 curative, is quickly degraded by atmospheric moisture. Part B containers should be kept closed until their contents are ready to be added to the well-mixed Part A. Additionally, the spray applicator should be suited and the spray equipment ready before Part B is added to Part A. Once mixed, the working pot life is typically 3 hr, or less at higher temperatures and humidities.

Mixing of Parts A and B: Part A should be well mixed before Part B is added. Part B should be added in increments and mixed well after each addition. This mixing procedure is for all kit sizes and is necessary to obtain a uniformly cured film with optimum properties.

For example, when mixing a drum kit, mix Part A well with a power stirrer. Then add one 6-gal pail of Part B and mix well. Use a flat stick to remove the thick Part A from the side and bottom of the drum. Add the second 6-gal pail of Part B and again mix well, scraping the sides and bottom of the drum with a flat stick. Continue stirring for a minimum of 15 min while moving the stirrer around in the drum in an up-and-down motion.

Once Parts A and B are thoroughly mixed, do not stir again. Remove the stirrer and cover the drum with the lid to prevent moisture contact and excessive skinning. A skin will form on the surface of the mixed coating. Do not break this skin by further stirring as it extends the pot life of the mixed coating and may plug the spray guns.

Spray application: Spray-apply the mixed coating to primed, dry, clean surfaces. Both the ambient and metal surface temperature should be at least 50° F (10° C) before the coating is applied.

Curing conditions: Chemglaze elastomeric coatings cure when the Part B curative reacts with atmospheric moisture (relative humidity). Solvent evaporation from the curing film is related to temperature and air movement. The lower the temperature, relative humidity, and air flow, the slower the film cures and dries.

Recoat time: A second coat of Chemglaze elastomeric or a topcoat of another Chemglaze coating may be applied after the first coat has cured for 4 hr at 60° F (16° C). Both the

M331 (black) and the M431 (gray) coatings have unlimited recoatability if they are kept clean. In most instances, the elastomeric films are topcoated after 4 to 24 hr.

Chemglaze elastomeric coatings cure faster when the temperatures (ambient and surface) are 75° to 80° F (24 to 27° C) and the relative humidity is 70 to 80 percent. High-velocity warm air helps remove the solvents from the curing film and aids in catalyzing the coating with atmospheric moisture.

7. CORPS OF ENGINEERS' EVALUATION

Physical and mechanical properties:

Percent solid (ASTM D 1644, Method A): 43.0%

Percent water absorption (ambient temperature) (ASTM C 642):

1 day	0.03%
2 days	0.06%
4 days	0.08%
7 days	0.11%

Ratio of percent water absorption for treated to nontreated specimen (2-day submersion): 1.28%

Percent water transmission:

2 days	0.18%
4 days	0.24%
7 days	0.54%

Ratio of percent water transmission for treated to nontreated specimen (7-day diffusion): 15.3%

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of coating activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.

9. AVAILABILITY & COST

Available throughout the United States and 50 countries worldwide through more than 20 agents and licensees. For more information or costs, call 814-868-3611 or write to Lord Corporation, Chemical Products Group, 2000 West Grandview Blvd., PO Box 10038, Erie, PA 16514-0038.

10. TECHNICAL SERVICE

Information on technical service can be obtained by writing the manufacturer at the address given in item 2 or calling 814-868-3611.