



PRODUCT DATA
CERAL® 66XL
TECHNICAL BULLETIN

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Bulletin Ceral 66XL - Revision 7/01/17

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| Purpose | Primarily used as a corrosion and oxidation resistant coating for ferrous alloys operating up to approximately 1150°F (621°C). |
| Viscosity | 19 – 24 Seconds at 77°F ± 0.5 (25°C ± 0.3) using No. 2 Zahn cup. |
| Dry Film Thickness | 0.00075 - 0.0015 inches (0.019 - 0.038 mm) |
| Method of Application | Spray |
| Cleanup | Water |
| Shelf Life | 6 months when stored between 45° F. and 85° F. (7 to 29°C). |

DESCRIPTION

CERAL 66XL is a single-component coating that does not have environmental, safety, or occupational health (ESOH) issues: chrome-free, HAP-free, VOC-free. It is an aqueous, inorganic aluminum coating consisting of fine aluminum particles suspended in an alkali binder. It is normally applied by spray techniques although application by brushing or dipping are possible. Coated components are dried and then oven cured in order to fuse the binder and form a homogenous coating. The coating can be made conductive causing it to act as a galvanic layer thereby providing sacrificial protection to a more noble substrate. The coating is resistant to hydraulic fluids, fuel, humidity and

thermal shock and may be readily stripped to facilitate substrate inspection.

APPLICATION METHODOLOGY

Components requiring coating should be prepared and coated as follows:

1. **Cleaning**
All surfaces to be coated must be clean: free of any oil, grease, and other contaminants. We suggest using a locally available degreasing agent for this purpose.
2. **Drying**
All surfaces to be coated must be dry. After cleaning, and prior to blasting, it is recom-

mended that the parts be dried in an air-circulating oven.

3. Surface Roughening by Blasting

All surfaces to be coated should be roughened. The recommended method is by dry blasting with between 90 and 120 mesh aluminum oxide at a standoff distance of 4 to 6 inches. When using suction equipment, pressure between 30 and 40 psi is recommended. Do not dwell in one area while blasting and carefully observe the condition of the blast media for degradation. Spent blast media contains a high proportion of fine particles that can become embedded into softer substrates. Blasted parts should be protected against contamination.

COATING APPLICATION

4. Coating Preparation

CERAL 66XL is supplied in ready-to-use condition, however it is heavily pigmented and consequently the aluminum particles have a tendency to settle during shipping, storage, and any period exceeding one hour during a working day. Therefore, the coating must be thoroughly mixed before use. The use of an automated bottle roller (see www.ceralusa.com/products) is very effective. It is good practice to screen the coating through a 200 mesh sieve prior to use to ensure that any dried particles are prevented from entering the spray gun reservoir. After initial mixing, it is permissible to maintain the dispersal of the aluminum particles by periodically shaking the spray gun.

5. Application

Blow the surfaces to be coated using filtered dry compressed air. Most industrial facilities' shop air is sufficient for this purpose. A uniform coat should be applied as detailed below. Ensure the coating is wet and does not exhibit a

sandy structure.

Apply **CERAL 66XL** using standard paint spray equipment. Ideally, maintain a spray distance of between 4 to 6 inches and spray perpendicularly to the surface being coated. An artists' airbrush may be used for intricate areas or for small touchups.

CERAL 66XL is an aqueous, inorganic material with a relatively low viscosity. Consequently, excess material will cause runs during application and mud cracking during drying.

NOTE: It is highly recommended that a spray booth equipped with environmental controls be used to apply the coating. The preferred environment is relative humidity (RH) between 45% and 65% and temperature between 65° F. and 75° F. (18° - 24° C.). Application outside of the preferred environment may contribute to runs (RH > 65%) or powdery surface (RH < 45%). The ideal situation would be to control both the RH and temperature within the tightest tolerance the spray booth is provisioned to maintain in order to produce the most consistent coating quality on a day-to-day basis.

6. Thickness Control

Unless otherwise instructed, the final coating thickness should be between 0.00075 - 0.0015" (0.019 - 0.038 mm). The application of multiple passes is acceptable however the application of multiple coats, as in multiple oven cycles, may adversely affect cohesive properties. Oven cure should begin as soon as a practicable after desired (green) coating thickness is achieved.

NOTE: Dry film thickness may be measured using an ultrasonic or magnetic in-

duction measuring device such as those available from Elcometer® and Fischer-scope®. Ensure coating is dry prior to measuring.

7. Dry

Allow to dry at ambient temperature for 30 minutes or until the coating has undergone a color change from dark grey to light grey.

Bake for 30 minutes, minimum, at 150° - 175° F. (66° - 80° C.) in an air-circulating oven.

Cure for 30 minutes, minimum, at a part temperature of 625° - 675° F. (330° - 357° C.) in an air-circulating oven.

8. Surface Treatment

CERAL 66XL must be made electrically conductive to obtain sacrificial properties. This may be accomplished in one of two ways: post cure at 950° - 1025° F. (510° - 552° C.) for 60 minutes, minimum or lightly blast with #13 glass bead. When blasting, care must be taken to avoid removing or otherwise damaging the coating.

REWORK OR REMOVAL OF COATINGS

Uncured coatings may be removed by running the component under clean, warm tap water as soon as practicable following the determination that the coating warrants removal.

Cured coatings may be removed by blasting with aluminum oxide at a pressure determined not to damage the substrate. The cured coating may also be chemically stripped in a 5% - 10% NaOH (Sodium Hydroxide) solution that has been heated to 150° F. (66° C.). If using this option, ensure that the component substrate

and any brazed joints or other coatings are not sensitive to attack by strong alkaline solutions. Rinse the component thoroughly in warm water after chemical stripping.

Touching up small areas of a component is not generally recommended and should be avoided if at all possible. If touch-up does become necessary, then it should only be done on a fully cured part. The surface surrounding the area requiring touch-up should be masked off and then the prescribed coating application techniques used to recoat the offending area. An air-drying touch up material is available from CeralUSA for the cosmetic repair of scratches, etc. (see www.ceralusa.com/products).

EQUIPMENT CONSIDERATIONS

All spray equipment may easily be cleaned with water. Begin cleanup as soon as possible following use.

Spray booths should ideally be of the environment controlled enclosure type (see www.ceralusa.com) but if such equipment is not available, then always use a disposable dry filter system and change the filter at prescribed intervals. Always bag the discarded filter. Spray booths should always be well ventilated.

SAFETY

Watch for sharp dried bits of coating material that can form around the bottle cap, and wear gloves when handling the material or coated parts.

When spraying, operators should always wear a suitable respirator. Consult the product MSDS for additional safety information.

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