



**SHERWIN
WILLIAMS.**

Chemical Coatings

Waterbased 2K Fed. #36081 Gray F93AL0501

DESCRIPTION

Waterbased 2K Fed. #36081 Gray, F93AL0501, is a two component waterborne polyurethane coating for military equipment.

Advantages:

- VOC of less than 1.8 lb/gal
- Less than 0.9 lb/gal Volatile Organic Emissions
- Reduces with water – means considerable cost savings in solvents
- Low odor
- Excellent atomization
- Smooth finish versus standard CARC
- May be applied with two component equipment
- Free of lead and chromate hazards
- Excellent exterior durability

*VOC compliance limits vary from state to state; please consult local Air Quality rules and regulations.

CHARACTERISTICS

Gloss – 2.0 mils dry:

60°	1.0 unit maximum
85°	3.5 units maximum

Volume Solids:

HL1267F93:	36.42 ± 2%
Admixed:	40.61 ± 2%

Viscosity:

15 – 26 seconds #3 Zahn Cup catalyzed and reduced

Recommended film thickness:

Mils Wet	3.8 – 4.9
Mils Dry	1.8 – 2.3

Drying (77°F, 50% RH):

Set To Touch: 60 minutes
 Dry Hard: 6 hours
 Dry Through: 8 hours
 Complete Cure: 7 days
 Force Dry: Flash 1 hour, then dry 45 minutes at 180°F. Flash time is dependent on air movement, humidity and temperature. The one hour flash can be reduced with an air dehydrator or fans to help remove the water.

Flash Point: 200°F

CHARACTERISTICS (cont.)

Mixing Ratio:

2 parts	F93AL0501
1 part	V93V502
0.5 part	Deionized or Distilled Water

Pot Life:

4 hours

Package Life:

12 months, unopened

Air Quality Data:

Non-photochemically reactive
 Photochemically reactive
 Volatile Organic Compounds (VOC) catalyzed and reduced as above, maximum 1.8 lb/gal, 216 g/L
 Volatile Organic Emissions catalyzed and reduced as above, maximum 0.9 lb/gal, 108 g/L

An Environmental Data Sheet is available from your local Sherwin-Williams facility.

SPECIFICATIONS

Steel: Surface must be clean and free of grease, dirt, oil, rust, fingerprints, and other contaminants to insure optimum adhesion and performance properties. Chemical pretreatment, (zinc phosphate) or DOD-P-15328D Wash Primer, E90G4, gives best adhesion and performance results. Where blasting is appropriate, blast in accordance with SSPC-SP6. For optimum adhesion pretreat blasted surface. Prime with wash primer E90G4 within two hours after blasting.

Aluminum: Clean with acidic cleaner or other appropriate cleaner depending on contamination. Pretreat with chromate conversion coating MIL-DTL-5541F, DOD-P-15328D Wash Primer, E90G4, or anodize per MIL-A-8625F. See below for primers.

Galvanized and other metals: Clean and remove oxidation contamination on surface, followed by treatment with DOD-P-15328D Wash Primer, E90G4. Due to the variability in these surfaces, testing adhesion on each situation is recommended. See below for primers.

Primers must be applied under the topcoat. For **ferrous** substrates, use MIL-DTL-53022C primer, e.g. E90W201 (Type I), E90H226 (Type II, faster recoat). For **non-ferrous** substrates, MIL-PRF-23377J, E90G203 (Type I, Class C2, 2.8 VOC), MIL-DTL-53022C (see above).

Check data sheet of each primer for recoat time of topcoat, e.g. E90H226 can be topcoated in 20-30 minutes air dry.

SPECIFICATIONS (cont.)

Testing: Due to the wide variety of substrates, surface preparation methods, application methods, and environments, the customer should test the complete system for adhesion and compatibility prior to full-scale application.

Product Limitations:

- These coatings must be catalyzed with Catalyst V93V502, at 2:1 ratio by volume.
- Do not use other catalysts other than V93V502. Do not vary catalyst mixing ratio.
- Must be well agitated prior to use by using a Red Devil type shaker.
- Component A, Component B, and Reducer must be mixed with a squirrel cage mixer and air drill or using proper two component equipment.
- Potlife will be shorter under warmer temperature.
- Force curing prior to the water evaporating will result in a soft film. However, after seven days, full cure will be obtained.

Caution:

Admixed material should not be discarded in sealed drums. Vented plugs should be used on the drums. This material will generate carbon dioxide gas within the first 24 hours of being mixed. After the material has been mixed for 24 hours, the gas no longer emitted and the drums can be sealed.

APPLICATION

Typical Setups

Special Mixing Instructions:

Component A should be shaken 5 minutes on Red Devil type shaker before opening, then mix Component B into Component A for 3 minutes using a mechanical agitator. Sherwin-Williams highly recommends the Use of a cage mixer. An air drill capable of 2000 rpm is also a necessity. Contact your Sherwin-Williams representative for an initial demonstration. The viscosity of the admixed components increase. Reduce to spray then mix well.

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APPLICATION (cont.)

Reduction: Reduce with deionized and distilled water. Reduction may vary depending on application variables. More water may be added to achieve desired viscosity.

Conventional Spray:

Air Pressure.....45 - 60psi

Tip070"

Air Assisted Airless:

Air Assist Pressure 50 psi

Fluid Pressure 2100 psi

Tip 611

Electrostatic Spray:

Reducer for polarity

Reduction Rate..... %

Reducer for flow

HVLP:

Air Pressure..... 65 psi

Fluid Pressure 5 – 10 psi

Tip070"

Cleanup:

Clean tools/equipment immediately after use with water. Then flush equipment with MIL-T-81772, Type I Thinner, R91K20, to prevent rusting. Another method is the use of Acrastip® 600 BIG MOD (Military) manufactured by Polychem, U.S. patent #5,975,865.

Follow manufacturer's safety recommendations when using any solvent.

CAUTIONS

FOR INDUSTRIAL SHOP APPLICATION

Thoroughly review product label for safety and cautions prior to using this product. A Material Safety Data Sheet is available from your local Sherwin-Williams facility. Please direct any questions or comments to your local Sherwin-Williams facility.

Note: Product Data Sheets are periodically updated to reflect new information relating to the product. It is important that the customer obtain the most recent Product Data Sheet for the product being used. The information, rating, and opinions stated here pertain to the material currently offered and represent the results of tests believed to be reliable. However, due to variations in customer handling and methods of application, which are not known or under our control, The Sherwin-Williams Company cannot make any warranties as to the end result.

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