



CALCIUM SULFONATE/ALKYD PRIMER MGS-94-09F

1.0 DESCRIPTION. This specification covers a calcium sulfonate/alkyd primer for steel.

1.1 This primer is primarily intended for use in non-abrasion exposures to provide a firm, corrosion resistant, highly adherent film. It is suitable as a maintenance or repaint primer for in-place structures but not as a shop-applied primer.

2.0 REFERENCE STANDARDS.

2.1 American Society for Testing and Materials (ASTM).

2.1.1 Test Methods for Properties:

| | |
|-------|---|
| B117 | Salt Spray (Fog) Testing |
| D562 | Consistency of Paints Using the Stormer Viscometer |
| D1210 | Fineness of Dispersion of Pigment – Vehicle Systems |
| D3960 | Volatile Organic Content (VOC) of Paints |

2.2 Federal Standards.

2.2.1 Federal Test Method Standard No. 141:

| | |
|-------------|-------------------------------------|
| Method 4061 | Drying Time |
| Method 4494 | Sag Test (multi-notch blade) |
| Method 4203 | Reducibility and Dilution Stability |

3.0 COMPOSITION.

3.1 The rust inhibitive resin used in the manufacture shall be an overbased crystalline calcium sulfonate. In addition to the calcium sulfonate complex, the paint shall also contain film forming oleoresinous compounds that act to reduce tack in the dried film.

3.2 The primer based on the specified ingredients shall be uniform, stable in storage, and free from grit and coarse particulates. Beneficial additives such as anti-skin agents may be added.

4.0 PROPERTIES.

4.1 Mixed Paint:

| Calcium Sulfonate/Alkyd Primer | |
|---|----------------|
| Color | red iron oxide |
| Overbased Crystalline Calcium Sulfonate, percent by weight, min. | 15 |
| Viscosity, 77 F (25 C), KU | 90 – 120 |
| Volatile Organic Content, lbs/gal (kg/L), max. | 3.50 (0.42) |
| Fineness of Grind, Hegman Units, min. | 5 |
| Coarse Particles and Skins as retained on No. 325 (45 µm) mesh sieve, percent, max. | 1.0 |

| Drying Time, Hours (3 to 4 Mil (75 µm to 100 µm) Dry Film) | |
|--|--|
| Dust Dry | 1 – 4 |
| Tack Free | 5 – 12 |
| Dry Hard | 24 – 48 |
| Sag Resistance, Mils (µm) | 12+ (300+) |
| Salt Spray Resistance, 1500 hours (4 mil (100 µm) dry film over SSP-SP-5 blasted cold rolled steel – 1 to 2 mil (25 µm to 50 µm) profile) | No more than 1 percent under-cutting, blistering or peeling. |

4.2 Compatibility. There shall be no evidence of incompatibility of any of the ingredients of the paint when two (2) volumes of paint are mixed with one (1) volume of mineral spirits (Federal Standards No.141, Method 4203).

4.3 Pigment Settlement. The paint shall show perfect suspension (10) when tested as specified in ASTM D869, when stored for six (6) months.

4.4 Working Properties. The paint shall be easily spray-applied when tested in accordance with Federal Standard No.141, Method 4331. The paint shall show no streaking, running or sagging after drying.

4.5 Condition in Container. The paint shall show no thickening, curdling, gelling, or hard caking when tested as specified in Federal Standard No.141, Method 3011 after storage for six (6) months from date of delivery in tightly covered containers at a temperature of 50 - 110 F.

5.0 LABELING. Each container shall be legibly marked with the following information:

Name: Red Iron Oxide, Calcium Sulfonate/Alkyd Primer
Specification:
Color: Red Iron Oxide;
Lot number;
Date of Manufacture;
Quantity of paint in Container;
Information and Warnings as may be required by Federal and State Laws;
Manufacturer's Name and Address.

6.0 BRAND NAME QUALIFICATION. No bids will be accepted if the manufacturer and brand name of the calcium sulfonate primer has not been added to the qualified list. Inclusion on the qualified list may be based on documentation review, satisfactory test results, satisfactory field trial results, and compliance with this specification.

6.1 A list of qualified brands and colors is maintained in [FS-1045, Table 10](#) of the Materials Manual. To be considered for qualification, the manufacturer shall submit to Construction and Materials, PO Box 270, Jefferson City, MO 65102, a one-gallon (four-liter) sample of the primer for which approval is requested. The sample shall be accompanied by a copy of the manufacturer's data sheet, handling and use instructions, a material safety data sheet, and test results for the actual sample of coating material supplied as a qualification sample showing compliance with all requirements of this specification. Submittals that do

not have all required documentation will not be considered.

7.0 INSPECTION.

7.1 All material supplied under this specification shall be subject to timely inspection by the department or authorized representative. The department shall have the right to reject any materials supplied that are not in accordance with the requirements of this specification.

8.0 ACCEPTANCE.

8.1 Acceptance of calcium sulfonate/alkyd primer will be based on certification by the supplier that the paint supplied is in accordance with all requirements of this specification, the coating's status on the qualified list, and on the results of any tests deemed necessary by the Department.