AEROSPACE MATERIAL SPECIFICATION

AMS3066™ | REV. C

Issued 1976-03
Revised 2001-03
Reaffirmed 2016-02

Superseding AMS3066B

Compound, Corrosion-Inhibiting
Water-Displacing, Soft Film, Aerosol Canned

RATIONALE

AMS3066C has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

1.1 Form:

This specification covers a solvent-dispersed, corrosion-inhibiting compound packaged in aerosol cans.

1.2 Application:

This product has been used typically for protection of bare or phosphate-treated steel surfaces where more protective coatings are not functionally desirable, where reapplication in service is feasible, and where water or saline solutions must be displaced from corrodible surfaces to prevent or arrest corrosion, but usage is not limited to such applications.

1.2.1 This product will provide protection for extended periods of storage when coated surfaces are packaged with suitable barrier materials.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been canceled and no superseding document has been specified, the last published issue of that document shall apply.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AMS3066C/

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2820	Aerosol Packaging

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 117	Operating Salt Spray (Fog) Testing
ASTM D 86	Distillation of Petroleum Products
ASTM D 874	Sulfated Ash from Lubricating Oils and Additives
ASTM D 1310	Flash Point and Fire Points of Liquids by Tag Open-Cup Apparatus
ASTM D 1748	Rust Protection by Metal Preservatives in the Humidity Cabinet

2.3 U.S. Government Publications:

Code of Federal Regulations: Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

16 CFR 1500.130	Commercial Practices, Consumer Product Safety - Self-Pressurization of Containers; Labeling
49 CFR 173-300	Transportation - Hazardous Materials Regulations of the Department of Transportation (DoT)

3. TECHNICAL REQUIREMENTS:

3.1 Material:

The corrosion-inhibiting compound shall be composed of a nonvolatile base compound dispersed in a solvent to form a fluid formulation and packaged in aerosol cans.

3.1.1 Compound Composition: Shall be optional with the manufacturer.

3.1.2 Solvent Composition: Shall be optional with the manufacturer, except that no aromatic or halogenated solvents shall be used in the formulation. The distillation end point of the solvent, determined in accordance with ASTM D 86, shall be not higher than 210 °C (410 °F). No solvent shall be used that has a threshold limit value (TLV) (see 8.2) for toxic materials of less than 350 ppm.

3.1.3 Propellant Composition: Shall be optional with the manufacturer, except for the following limitations:

3.1.3.1 The propellant shall be a nonflammable type in accordance with Code of Federal Regulations 49 CFR 173.300.

3.1.3.2 No propellant shall be used for which the TLV for toxic materials is less than 350 ppm. (See 8.2.)

3.2 Properties:

The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with specified test procedures:

3.2.1 Compound Properties:

3.2.1.1 Nonvolatile Content: Shall be 95 to 110% of the value established on the initial sample, determined in accordance with 4.5.1.1.

3.2.1.2 Sulfated Residue: Shall be within 0.05 of the value determined on the initial sample when that value is 0 to 0.50% and within 10% of the value determined on the initial sample when that value is over 0.50%. Determination shall be made in accordance with ASTM D 874.

3.2.1.3 Flash Point: Shall be not lower than 65 °C (149 °F), determined in accordance with 4.5.1.2.

3.2.1.4 Abrasives: Shall be absent, determined in accordance with 4.5.1.3.

3.2.1.5 Stability: The compound shall be stable and homogeneous and shall recover from exposure to temperature extremes of -40 to +53 °C (-40 to +127 °F), determined in accordance with 4.5.1.4.

3.2.2 Application Properties:

3.2.2.1 Wetability and Film Continuity: The compound shall readily wet surfaces and, upon evaporation of the solvent, the resultant coating shall be continuous, determined in accordance with 4.5.2.1.

3.2.2.2 Drying: The compound film shall remain soft on drying and exposure, determined in accordance with 4.5.2.2.

3.2.3 Film Properties:

3.2.3.1 Discernibility: The compound shall be visually discernible for not less than 14 days on a surface to which it has been applied and allowed to stand in a well-lighted and ventilated room. The color of the finished compound shall be black or brown. An oil-soluble dye may be used.

3.2.3.2 Water Displacement: The compound shall satisfactorily displace water from a metal surface, determined in accordance with 4.5.3.1.

3.2.3.3 Protection of Metals: The compound shall produce no visual evidence of pitting or etching, or a weight change in excess of values shown in Table 1, determined in accordance with 4.5.3.2. In addition, specimens tested in dry heat shall show no dark discoloration.

TABLE 1 - Allowable Weight Change

Metal	Weight Change mg/cm^2 of Surface Area
Brass, leaded	1.0
Cadmium anode	5.0
Zinc anode	7.5
Magnesium alloy, AZ31B	0.5
Aluminum alloy, 2024	0.2
Steel, AISI 1010	0.2

3.2.3.4 Humidity Resistance: The compound shall protect test specimens exposure to humidity for not less than 30 days, determined in accordance with 4.5.3.3.

3.2.3.5 Salt Spray Protection: The compound shall protect test panels from corrosion and pitting for not less than seven days, determined in accordance with 4.5.3.4.

3.3 Aerosol Spray Cans:

Shall conform to AMS 2820.

3.3.1 Leakage: The pressurized cans shall not leak or become distorted when tested in accordance with 4.5.4.1.

3.3.2 Fill: Pressurized cans containing the compound shall have a compound net weight as specified, determined in accordance with 4.5.4.2. The complete, usable portion of the contents shall be expelled before the propellant is expended.

3.3.3 Sprayability:

3.3.3.1 Spray Pattern: All aerosol pressure cans shall be equipped with a spray nozzle. The nozzle shall provide a fine, steady spray and shall deposit the compound evenly on a flat or vertical surface when sprayed as specified in 4.5.4.3.1. No chunks of thickened or solid compound shall be expelled and no clogging of the nozzle shall occur. After clearing the nozzle in accordance with manufacturer's instructions, there shall be no perceptible leakage.

3.3.3.2 Adherence, Buildup, and Sag: The compound shall adhere to the specimen surface and shall not excessively foam or sag upon application of repeated layers in accordance with 4.5.4.3.2.

3.3.3.3 Discharge Rate at 4 °C (39 °F): The discharge rate of compound from a full, pressurized can shall be not less than 1.0 gram per second at 4 °C ± 1 (39 °F ± 2), determined in accordance with 4.5.4.3.3.

3.3.3.4 Discharge Rate After Temperature Cycling: The compound shall be readily sprayable, shall meet the discharge rate of 3.3.3.3, and shall produce a uniform, continuous film after subjecting a full, pressurized can to temperature cycling between -40 and +53 °C (-40 and +127 °F) in accordance with 4.5.4.3.4.

3.4 Quality:

The compound, as received by purchaser, shall be homogeneous and free from water, chlorides, and other impurities detrimental to usage of the compound. The compound shall not be injurious in any way to personnel if reasonable procedures and safety precautions are used.

4. QUALITY ASSURANCE PROVISIONS::

4.1 Responsibility for Inspection:

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests for requirements shown in Table 2 are acceptance tests and shall be performed on each lot.

TABLE 2 - Acceptance Tests

Test	Requirement Paragraph
Sulfated Residue	3.2.1.2
Abrasives	3.2.1.4
Drying	3.2.2.2
Discernibility	3.2.3.1
Leakage	3.3.1
Fill	3.3.2
Spray Pattern	3.3.3.1
Adherence, Buildup, and Sag	3.3.3.2

4.2.2 Periodic Tests: Tests for requirements shown in Table 3 are periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.2.3 Preproduction Tests: All technical requirements are preproduction tests and shall be performed prior to or on the initial shipment of the compound to a purchaser, when a change in material and/or processing requires reapproval by the cognizant engineering organization, (See 4.4.2), and when purchaser deems confirmatory testing to be required.

TABLE 3 - Periodic Tests

Test	Requirement Paragraph
Nonvolatile Content	3.2.1.1
Flash Point	3.2.1.3
Stability	3.2.1.5
Water Displacement	3.2.3.2
Salt Spray Protection	3.2.3.5

4.3 Sampling and Testing:

Shall be as follows; a lot shall be all compound produced in a single production run from the same batches of raw materials under the same fixed conditions, packaged in aerosol cans, and presented for vendor's inspection at one time.

4.3.1 Acceptance Tests: Sufficient aerosol containers and compound shall be taken from each lot to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than two.

4.3.2 For Periodic Tests: As acceptable to purchaser.

4.4 Approval:

4.4.1 Sample compound shall be approved by purchaser before compound for production use is supplied, unless such approval be waived by purchaser. Results of tests on production compound shall be essentially equivalent to those on the approved sample.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production compound which are essentially the same as those used on the approved sample compound. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in ingredients and/or processing and, when requested, sample compound. Production compound made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Test Methods:

4.5.1 For Compound Properties:

4.5.1.1 Nonvolatile Content: Weigh approximately two grams of freshly sprayed compound to the nearest milligram in a tared, aluminum foil dish 2.0 to 2.5 inches (51 to 64 mm) in diameter. Place the dish in an explosion-proof, gravity-convection oven maintained at 105 to 110 °C (221 to 230 °F) for not less than three hours. Determine the nonvolatile content using Equation 1.

$$\text{Nonvolatile Content, \%} = \frac{A \times 100}{B} \qquad \text{(Eq. 1)}$$

where:

A = weight of residue, grams
B = original weight of sample, grams

4.5.1.2 Flash Point: Collect 50 mL of compound by spraying from an unused can into the neck of a 125 mL-Erlenmeyer flask, keeping a loose cover on the flask until the propellant gases have dissipated. Determine flash point in accordance with ASTM D 1310 immediately thereafter.

4.5.1.3 Abrasives: Mix approximately 75 mL of compound, freshly sprayed from an aerosol can into a clean glass container, with approximately 200 mL of benzol and stir until all soluble matter is in solution. Allow to stand for approximately one hour at room temperature to permit any insoluble matter to settle. Carefully decant. Wash the residue with 100 mL of fresh benzol and again carefully decant. Repeat the procedure with successively smaller portions of benzol until the solution is practically colorless. The residue after the last decantation shall be rubbed between two pieces of flat, clean, glass plate. The appearance of scratches on the glass plates shall be considered evidence of the presence of abrasive material.

4.5.1.4 Stability:

4.5.1.4.1 Recovery from Low Temperature: Collect 50 mL of the compound by spraying from fresh aerosol cans into a test tube approximately 1 inch (25 mm) in ID and 8 inches (203 mm) long. After the propellant gases have dissipated, stopper the test tube and heat the tube and contents to 52 to 54 °C (126 to 129 °F) and hold at heat for not less than eight hours. At the end of this period, transfer the filled tube to a suitable cold chamber maintained at -40 °C ± 2 (-40 °F ± 4) and allow to remain at that temperature for 16 hours ± 0.1, taking care to avoid any physical disturbance of the compound. Repeat this cycle three times (a total of four complete cycles). The test tube shall then be allowed to warm, in an upright position, to room temperature and remain upright at room temperature (20 to 30 °C) (68 to 86 °F) for not less than 24 hours undisturbed.

4.5.1.4.1.1 The test tube shall then be tilted through an angle of 180 degrees and held in that position for five seconds. The compound is acceptable if it shows no gelling or solidification and not more than a slight haze or precipitate. If the compound indicates evidence of gelling, haze, or separation, the tube shall be shaken vigorously by hand for 60 seconds ± 5. The compound is acceptable for low temperature recovery if, when the tube is inverted, the compound flows and shows no lumps suggesting permanent solidification and not more than a slight haze or precipitate.

4.5.1.4.2 Homogeneity: Compound passing the test of 4.5.1.4.1 but showing separation shall be examined for precipitates and haziness in the solution. If the precipitate cannot be redissolved into the compound or the haziness dispelled by shaking, the supernatant liquid shall be tested to determine its ability to protect test panels from humidity as in 4.5.3.3.6; the supernatant liquid shall pass the test. The panels for the exposure tests may be coated by dipping them in a small dish filled with supernatant liquid. It may be necessary to repeat the low-temperature cycle using a larger sample in order to obtain sufficient supernatant liquid for test.

4.5.2 For Application Properties:

4.5.2.1 Wetability and Film Continuity: Test specimens, coated in accordance with 4.5.3.3.4, shall be examined visually to determine that the surfaces are wetted and the film is continuous.

4.5.2.2 Drying: Test specimens prepared in accordance with 4.5.3.3.4, shall be allowed to dry in a vertical position at 20 to 30 °C (68 to 86 °F) for 24 to 26 hours prior to examination.

4.5.3 For Film Properties:

4.5.3.1 Water Displacement:

4.5.3.1.1 Preparation of Test Panels: Test panels, approximately 0.06 x 2 x 3 inches (1.5 x 51 x 76 mm) with well-rounded edges, shall be prepared from AISI 1010 low-carbon steel or test specimens as defined in 4.5.3.3.2 may be used. The surfaces shall be uniformly abraded with sharp, white, silica sand of the particle size noted in Table 4, the sand being free from organic matter, or with abrasive paper of size No. 10 to 20 (2000 to 850 µm). Test panels shall not exhibit rust and any oil or organic residue shall be removed with hot naphtha and hot methanol rinses prior to abrasive cleaning.

TABLE 4 - Sand Particle Size

Particle Size	Percent
Pass through No. 10 US (2000 µm) standard sieve, min	100
Retain on No. 20 US (850 µm) standard sieve, max	10
Pass through No. 50 US (300 µm) standard sieve, max	10

4.5.3.1.2 After abrading, each panel shall immediately be placed in a container of anhydrous methanol. Immediately before final cleaning, the methanol and the panels shall be heated so that, upon withdrawal from the solvent, the panels shall be well above the dew point of the room. Final cleaning shall be accomplished by spraying each panel with naphtha, rinsing in hot naphtha, and finally rinsing in hot methanol. The warm panels shall be placed in a desiccator and used within 12 hours of the final rinsing. To avoid fingerprint corrosion, the panels shall be handled with forceps or other instruments at all times during and after abrading and cleaning.

4.5.3.1.3 Preparation of Compound: Collect 50 mL of the compound by spraying from fresh aerosol cans into the narrow neck of a 125 mL Erlenmeyer flask, keeping a loose cover on the flask until the propellant gases have dissipated. Add 5 mL of distilled water and shake the mixture for not less than one minute. Store the stoppered flask at 52 to 54 °C (126 to 129 °F) for 15 to 20 hours, cool to 25 °C ± 3 (77 °F ± 6), and test within one hour of cooling.

4.5.3.1.4 Water Displacement Procedure: Dip each of three test panels, prepared as in 4.5.3.1.1 and 4.5.3.1.2, in distilled water momentarily and drain in a vertical position for not more than five seconds with the bottom edge in contact with absorbent paper. Immediately immerse each panel, horizontally and without agitation, for 15 seconds in a petri or evaporating dish containing the compound previously prepared in accordance with 4.5.3.1.3. After draining momentarily, place each panel in a static humidity cabinet (e.g., a desiccator body containing distilled water) for 60 minutes ± 1 at 25 °C ± 3 (77 °F ± 6). The compound is acceptable if, at the end of the one hour exposure and after removal of the compound, the panels show no evidence of rust, mottling, or abnormal surface stains and defects. A cleaned but uncoated specimen may be exposed as a control.

4.5.3.1.5 Dilution with Paraffin-Base Oil: The compound, prepared as in 4.5.3.1.3, shall be diluted 1:1 with a neutral, noninhibited, paraffin-base petroleum oil of 90 to 100 SUS viscosity at 38 °C ± 1 (100 °F ± 2) and the water displacement test performed as in 4.5.3.1.4 with the test results evaluated in a similar manner.

4.5.3.2 Protection of Metals:

4.5.3.2.1 Test Specimens: Prepare two specimens, nominally 0.25 x 0.87 x 2.0 inches (6.4 x 22 x 51 mm), of each metal shown in 3.2.3.3. Drill a small hole near one corner of each specimen to be used in the dry heat exposure test of 4.5.3.2.3. Abrade all specimens to remove pits, burrs, and irregularities from the faces and edges, finishing as specified in 4.5.3.3.3 (surface finish only). Clean the specimens by swabbing in hot naphtha with a final rinse in warm anhydrous methanol; use 95% methanol for magnesium alloy specimens. The specimens shall be handled in a manner to avoid contact with the operator's hands. Immerse or coat immediately, or store in a desiccator for not more than 12 hours before coating.

4.5.3.2.2 Immersion Test: After weighing each test specimen to the nearest 0.1 mg, place one set of specimens in a container approximately 3 inches (76 mm) in diameter, arranging the specimens in the order shown in 3.2.3.3 in a symmetrical pattern and placed equidistantly, standing on one of the narrow ends and separated from each other by glass rod separators. Cover the specimens with sufficient compound (approximately 300 mL), so that their tops are at least 0.25 inch (6.4 mm) below the surface of the compound. Seal the container and place in an oven at 52 to 54 °C (126 to 129 °F) for seven days ± 0.1. Upon completion of the elevated temperature exposure, remove the compound and any loose corrosion products from the specimens by swabbing with clean cheesecloth moistened with naphtha, then with anhydrous methanol; use 95% methanol for the magnesium alloy specimen. Rinse with clean methanol and dry the specimens. Reweigh the specimens within 30 minutes of drying and calculate the weight loss or gain to the nearest 0.1 milligram.

4.5.3.2.3 Dry Heat Test: After weighing to the nearest 0.1 mg, coat the other set of specimens, prepared as in 4.5.3.2.1, with compound as specified in 4.5.3.3.4. After 24-hour drying, place the specimens in a gravity-convection oven maintained at 50 °C ± 2 (122 °F ± 4) for seven days ± 0.1. Upon completion of the dry heat test, remove the compound and any loose corrosion products from the specimens by swabbing with clean cheesecloth moistened with naphtha, then with anhydrous methanol; use 95% methanol for the magnesium alloy specimen. Rinse with clean methanol and dry the specimens. Reweigh the specimens within 30 minutes of drying and calculate the weight loss or gain to the nearest 0.1 milligram.

4.5.3.3 Humidity Resistance:

4.5.3.3.1 Specimen Handling Procedures: The utensils and cloths used in preparing test panels shall be clean and free from contamination. Solvents shall be clean and shall be redistilled before reuse. In all stages of treatment beginning with the initial solvent wipe, handling of equipment with bare hands shall be avoided. The test panels shall be handled with hooks or similar devices, care being taken to prevent contact of the panels with contaminated surfaces during cleaning and to prevent marring the film during coating and subsequent handling. Specimens on which the film has been damaged in any way shall be eliminated from the test.

4.5.3.3.2 Test Panels: Shall be fabricated from annealed, cold-finished, AISI 1010 low-carbon steel. Each panel shall be nominally 0.125 x 2 x 4 inches (3.2 x 51 x 102 mm), conforming to the description in ASTM D 1748.

4.5.3.3.3 Cleaning of Test Panels: After rounding the edges of the panel and reaming out the holes used for suspension, wipe the surfaces with clean cheesecloth saturated with dry-cleaning solvent or petroleum naphtha. Scrub the panels with a clean cheesecloth swab in a beaker of hot petroleum naphtha or dry cleaning solvent. If the panels are not to be used at once, store them in a desiccator. Abrade the test panel surface with No. 230 (63 µm) or No. 240 grit aluminum oxide cloth or paper-backed abrasive to produce a surface finish of 10 to 20 microinches (0.25 to 0.51 µm). "Wet or dry" cloths or papers shall not be used. The final abrasion marks shall be parallel to the length of the panel. Wipe off superficial dust from the abrasion operation using clean, dry, absorbent tissue or cheesecloth. Scrub the abraded face of the panel thoroughly with a lint-free cloth until there is no dark stain on a clean cloth surface. Spray the panel with hot naphtha using a wash bottle or a spray gun. The panel should be held in a rack at an angle of 20 degrees ± 5 from the vertical. The spray should be directed vertically down on the panel, flushing the test surface progressively downward. Spray the test surface, the back face, and then the test surface again. Finally, rinse the panel in fresh boiling anhydrous methanol, allowing the panel to be immersed for not less than 10 seconds to permit the panel to reach the temperature of the methanol before withdrawal. Dry in air, place the panel in a desiccator, and use it within 12 hours of preparation.

4.5.3.3.4 Application of Compound: Apply the compound to all surfaces of each panel by holding the panel vertically and spraying to the point of complete coverage with an average film thickness not exceeding 0.001 inch (0.03 mm). All panel edges and holes in the panel shall be coated with compound. The film on the center portion of the panel shall not be touched or disturbed in any way. Coating shall be performed at an ambient temperature of 25 °C ± 3 (77 °F ± 6) and a relative humidity of 50% or less. Coated panels shall be dried for not less than 24 hours in a draft-, dust-, and fume-free atmosphere prior to making film thickness measurements and exposure tests.

4.5.3.3.5 Film Thickness: The average film thickness of the compound on the panel shall be determined by a specific gravity weight on a panel coated as in 4.5.3.3.4.

4.5.3.3.5.1 The average film thickness in inches shall be calculated using Equation 2.

$$\text{Film Thickness, inch} = \frac{W \times 0.061}{D \times A} \qquad \text{(Eq. 2)}$$

where:

W = weight of film, grams to nearest mg
D = density of film, gram/cm^3, determined on nonvolatile portion of compound by means of a pycnometer
A = total surface area of the panel, square inches

4.5.3.3.5.2 The average film thickness in millimeters shall be calculated using Equation 3.

$$\text{Film Thickness, mm} = \frac{W \times 1000}{D \times A} \qquad \text{(Eq. 3)}$$

where:

W = weight of film, grams to nearest mg
D = density of film, gram/cm^3, determined on nonvolatile portion of compound by means of a pycnometer
A = total surface area of the panel, mm^2

4.5.3.3.6 Humidity Exposure: Three specimens, prepared as in 4.5.3.3.1 through 4.5.3.3.4, suspended by 18-8 corrosion-resistant steel or nickel-copper alloy hooks, shall be exposed for 30 days ± 0.1 in a humidity cabinet constructed and operated in accordance with ASTM D 1748. At the completion of the exposure period, the compound is acceptable if, after removal of the compound, none of the panels show more than a trace of corrosion on the leading test surface of the panel. A trace of corrosion is defined as not more than three dots of rust, none of which is larger than one millimeter in diameter. Only corrosion within significant areas as outlined in ASTM D 1748 shall be considered.

4.5.3.4 Salt Spray Resistance:

4.5.3.4.1 Test Panels: Four panels shall be prepared as in 4.5.3.3.1 through 4.5.3.3.4 except that two panels shall be freshly sandblasted and the other two shall be polished and alkaline-cleaned.

4.5.3.4.2 Salt Spray Exposure: After drying as in 4.5.3.3.4, the panels shall be exposed to salt spray exposure in accordance with ASTM B 117 for not less than seven days. Upon completion of exposure, panels shall be removed from the cabinet, cleaned with solvent, and examined. Visible corrosion or pitting is not acceptable. If corrosion occurs, but to no greater extent than three spots, none larger than one millimeter in diameter, the compound may be retested. If, on retesting, no corrosion spots occur, the compound is acceptable. In any case, corrosion within 0.125 inch (3.18 mm) of an edge shall be disregarded.

4.5.4 For Container Performance:

4.5.4.1 Leakage: A pressurized container shall be completely submerged for not less than five minutes in water maintained at 52 to 54 °C (126 to 129 °F), during which time it shall be observed for emission of bubbles. Distortion of the container or emission of bubbles from any part of the container shall be considered evidence of unacceptable leakage.

4.5.4.2 Fill: A full, pressurized can shall be weighed to the nearest 0.1 ounce or to the nearest gram and sprayed until the contents of the can and all the propellant are exhausted, vigorously shaking the can periodically during the spraying, and collecting the contents in a suitable tared container. The can shall be reweighed and the net weight of the compound calculated. This value may be verified by weighing the compound collected in the tared container. This compound may be used in other tests.

4.5.4.3 Sprayability:

4.5.4.3.1 Spray Pattern: The characteristics of the spray pattern and the performance of the spray nozzle shall be evaluated by vigorously shaking a fresh, full, pressurized can for not less than 30 seconds and spraying a pattern on large sheets of newspaper or similar surfaces to determine coverage and evenness of the spray. After spraying several patterns with the nozzle approximately 12 inches (305 mm) from, and the spray directed approximately perpendicular to, the surface, the nozzle shall be examined for evidence of thickened accumulations of compound or clogging.

4.5.4.3.2 Adherence, Buildup, and Sag: Two test panels, prepared in accordance with 4.5.3.3.2 and 4.5.3.3.3, shall be supported with the long dimension forming an angle of approximately 45 degrees with the horizontal. Compound shall be sprayed on the panel from approximately 12 inches (305 mm) with the spray directed approximately perpendicular to the surface to produce a wet film thickness of approximately 0.001 inch (0.03 mm). Each panel shall be examined for uniformity of spray, foaming, and adherence to the substrate. After a 10 second pause, each panel shall be resprayed in the same manner and examined for adhesion and sagging. After a five second pause, each panel shall be sprayed a third time in the same manner and examined for adhesion and sagging.