

INCH-POUND

A-A-52474

December 27, 1993

## COMMERCIAL ITEM DESCRIPTION

## ELECTROCOATING PRIMER

The General Services Administration has authorized the use of this commercial item description (CID).

## ABSTRACT.

This CID covers a water born, cathodic epoxy electrodeposition primer (herein after referred to as primer) intended for use on cleaned and pretreated steel and aluminum. The primer meets solvent emission maximums of 1.2 pounds per gallon of volatile organic compounds.

## SALIENT CHARACTERISTICS.

a. Materials. Unless otherwise specified herein, the material used shall be in accordance with the manufacturer's material specification for cathodic electrodeposition primer. The use of recovered material made in compliance with regulatory requirements is acceptable provided all requirements of this CID are met (see note e).

b. Composition. The composition of the primer shall be as follows:

1. Resin feed component. The resin feed component shall consist of epoxy or epoxy-urethane resin combined with the necessary amounts of flow control agents and volatile solvents (see table I).

2. Pigment paste component. The pigment paste shall consist of a resin as specified in resin feed component, volatile solvents, pigments and silicone extenders. The quantitative requirements of the pigment paste component shall be as specified in table I.

c. Mixed primer. The mixed primer shall conform to the requirements specified in table II.

d. Hazardous Material Control. Products and processes used by suppliers shall conform to the employee and consumer health, employee safety, and environmental regulations as specified by OSHA (40 Code of Federal Regulation (CFR) Part 1910) and EPA (40 CFR Parts 261 to 265).

Beneficial comments, recommendations, additions, deletions clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-Automotive Command, ATTN: AMSTA-GDS, Warren, MI 48397-5000.

AMSC N/A

FSC 8010

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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TABLE I. Pigment paste component.

Characteristics	Resin Feed	Pigment Paste
Total solids, percent by weight	38.0 + 5.0%	40.0 - 55.0%
Weight per gallon	8.8 + 0.2 lb	10.0 - 13.5 lb
pH range	6.0 - 7.0	6.7 - 8.0
Viscosity, centipoise-second	100 CPS (max)	5000 CPS (max)
Epoxy resin	Positive	Positive

TABLE II. Mixed primer requirements.

Characteristics	Requirements
Total solids, percent by weight	10.0 - 21.0%
Pigment/binder	0.05 - 0.35
pH range	5.6 - 6.3
Conductivity, micromhos	1000 - 2000
Volatile organic compounds (VOC), pounds per gallon	1.2 (max)
Lead content, (see salient characteristics d)	

e. Color. The color of the primer shall be gray or black with a gloss range of 30 to 70 in accordance with ASTM D523.

f. Performance. Unless otherwise specified the performance of the primer shall be verified with steel and aluminum panels (substrates). The steel panels shall be pretreated with zinc phosphate coating conforming to TT-C-490 type I. The aluminum panels, made from aluminum alloy 3003H14, shall be treated with alodine 1200S to produce a coating meeting the requirements of MIL-C-5541. The panels of each substrate shall be coated with a 0.001 + 0.0001 inch thick dry film of primer. The performance requirements are as follows:

1. Adhesion. Several primed panels shall be topcoated with a chemical agent resistive coating (CARC) paint to a minimum dry film thickness of 0.0018 inches and allowed to air dry seven days. The primed panels and primed and topcoated panels shall perform as follows:

(a) The primer film shall not show any removal from the surface of the panels when subjected to ASTM D3359, method B, classification 5B.

(b) The primer film and topcoat shall show no more than 5 percent removal from the surface when subjected to ASTM D3359, method B, classification 4B.

(c) A narrow ribbon of coating shall be difficult to remove from the panels when cut with a curved-blade knife which is held approximately 30 degrees to the panel. The coating shall not flake, chip, or powder when cut, and the knife cut shall show no beveled edges.

2. Flexibility. An aluminum panel shall be used to determine the flexibility of the primer when subjected to FED-STD-141, method 6221, using a

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0.25 inch mandrel. The primer film shall show no cracking or flaking. Cracks occurring at either end and extending no more than 0.25 inch shall be disregarded.

3. Salt spray resistance. Three panels of each substrate shall have two intersecting lines scribed across the surface of each panel so that the bare substrate is exposed. The edges of all panels shall be sealed. The panels shall then be subjected to a 5 percent salt spray for 1000 hours as described in ASTM B117. After being subjected to the salt spray, the panels shall be washed free of salt and examined immediately for the following:

(a) One panel from each substrate shall be checked for adhesion per ASTM D3359 method B, classification 3B.

(b) One panel from each substrate shall be stripped down mechanically. The panel shall show no more than a trace of rusting, pitting, corrosion or blister larger than .039 inch. For visual inspection the use of ASTM D610 number 8 shall be used.

(c) The cross scribed area shall not exceed one-eighth inch score rust creeping on either side of the scribe line or loss of adhesion.

4. DS2 Resistance. Place two spots of DS2 agent on a primed steel panel and let stand uncovered for 30 minutes. Thoroughly wash with cool water. The primer shall show no signs of blistering or wrinkling. After drying, there shall be no film softening of the primer. The DS2 agent shall consist of the following:

- 70% diethylenetriaming
- 28% ethylene glycol monomethyl ether
- 2% sodium hydroxide

5. Throw power. In determining the throw power of the primer bath, two steel panels 4x18 inches shall be used. A throw power box shall be assembled by securing two metal panels face to face in such away that will result in a .375 inch gap between the panels. The panels shall be assembled along the sides using a nonconductive material with the top and bottom edges open. Submerge the throw power box into the primer bath and deposit a film of primer at least 10 inches up the panel (less than 10 inches in unacceptable). When dry, the film thickness shall be  $0.001 \pm 0.0001$ . This shall be verified by measuring the film thickness at one inch intervals on the side of the panel which is located on the interior surfaces of the throw box. Seal the uncoated section and all edges of the test panel and expose the inside face to the salt spray resistance of this CID for 96 hours. There shall be no more than a trace amount of rusting (ASTM D610 no. 8) and no blisters larger than .039 inch in diameter on the entire 10 inch coated surface.

g. Toxicity. The primer shall contain no benzene, chlorinated solvents or acetates of ethylene based glycol ethers. The primer shall have no adverse effects on the health of personnel when used for its intended purpose.

h. Material safety data sheet (MSDS). A MSDS shall be prepared in accordance with FED-STD-313 (see note b and d).

i. Unit container sizes. The primer shall be available in the following unit container sizes: pint, gallon, 5 gallon pail, and 55 gallon drum (see note b and c).

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j. Identification markings. Identification markings shall be permanent and legible and shall include, as a minimum, the manufacturer's identification code (CAGE) and part number, and the part identification number (see note c).

1. User instruction marking. Containers shall be marked or labeled with emergency and first-aid procedures; type of personal protective equipment required; the precautions to be taken when using the product for its intended use and with the following:

INSTRUCTIONS FOR USE: For safety and disposal instructions refer to the Material Data Safety Data Sheet. Instructions for mixing, thinning and maintaining the coating bath parameters should be provided by the approved coatings supplier.

#### QUALITY ASSURANCE PROVISIONS

a. Responsibility for inspection. The contractor is responsible for the performance of all inspections (examinations and tests).

b. First article inspection. When specified (see note b), a first article sample shall be inspected to verify conformance to the salient characteristics in this CID. Approval of the first article sample by the Government shall not relieve the contractor of the obligation to supply items that are fully representative of those inspected as a first article sample.

c. Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this commercial item description and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

#### PRESERVATION, PACKAGING, PACKING, LABELING, AND MARKING.

Preservation, packaging, packing, and marking for the desired level shall be as specified in the contract (see note b).

#### NOTES.

(This section contains information of a general or explanatory nature that may be helpful but is not mandatory.)

##### a. Addresses for obtaining copies of referenced documents.

1. Government documents. Copies of FED-STD-141 "Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing"; FED-STD-313 "Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities"; TT-C-490 "Cleaning Methods for Ferrous Surfaces and Pretreatments for Organic Coatings"; MIL-C-5541 "Chemical Conversion Coatings on Aluminum and Aluminum Alloys" are available from the Navy Publications and Service Office, Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2. Non-Government documents. Copies of ASTM B117 "Standard Test Method of Salt Spray (Fog) Testing"; ASTM D610 "Standard Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces"; ASTM D523 "Standard Test Method for

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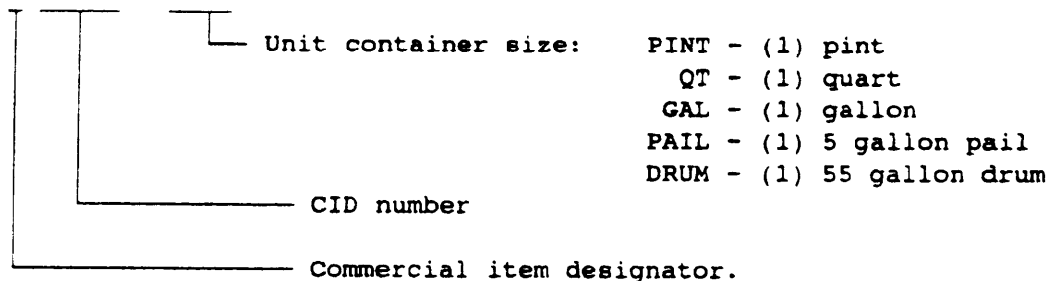
Specular Gloss"; ASTM D3359 "Standard Test Methods for Measuring Adhesion by Tape Test" are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.

b. Ordering data. Acquisition documents must specify the following:

1. Title, number, and date of this CID.
2. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced.
3. Unit container size and PIN.
4. Identify activities requiring copies of completed MSDS and specify when the MSDS will be inspected.
5. Selection of applicable level and packaging requirements.
6. If first article is required and arrangements for first article inspection.

c. Part or identification number (PIN). The PIN to be used for primer acquired to this CID is as follows:

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d. MSDS. The contracting officer should identify those activities requiring copies of the completed MSDS prepared in accordance with FED-STD-313. Additional pertinent Government mailing addresses for submission of data are listed in appendix B of FED-STD-313.

e. Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

MILITARY INTERESTS:

Custodian:

Army - AT

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FSS

PREPARING ACTIVITY:

Army - AT

(Project 8010-A772)