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# EIA STANDARD

TP-82A

## CORROSIVITY OF PLASTICS TEST PROCEDURE FOR ELECTRICAL CONNECTOR AND SOCKET HOUSINGS

**EIA/ECA-364-82A**

(Revision of EIA-364-82)

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Electronic Components, Assemblies & Materials Association

ELECTRONIC COMPONENTS, ASSEMBLIES & MATERIALS  
ASSOCIATION

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(From Standards Proposal No. 5063 formulated under the cognizance of the CE-2.0 National Connectors Standards Committee.

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## CONTENTS

Clause		Page
1	Introduction .....	1
1.1	Scope .....	1
2	Test resources .....	1
2.1	Material .....	1
3	Test specimen .....	2
3.1	Description .....	2
3.2	Preparation .....	2
4	Test procedure .....	2
5	Details to be specified .....	3
6	Test documentation .....	3

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## TEST PROCEDURE No. 82A

### CORROSIVITY OF PLASTICS TEST PROCEDURE FOR ELECTRICAL CONNECTOR AND SOCKET HOUSINGS

(From EIA Standards Proposal No. 5063, formulated under the cognizance EIA CE-2.0 Committee on National Connector Standards, and previously published in EIA-364-82.)

#### **1 Introduction**

##### 1.1 Scope

1.1.1 This standard establishes a test method to determine whether a plastic electrical connector or socket housing generates corrosive elements when in contact with metallic parts or components.

NOTE — This procedure is not intended to be used for qualitative analysis of corrosion products.

1.1.2 This corrosiveness may be a result of:

- Additives and/or filler material contained within the plastic formulation,
- Inadequate cure or post-cure of the material that can result in outgassing of the material.

#### **2 Test resources**

##### 2.1 Material

2.1.1 Copper metal strips shall be used. The size of the metal strips shall be such to accommodate the length and width of the test specimen plus 12.7 millimeters (0.5 inch) to extend beyond the end and side of the specimen. A glass epoxy board clad with copper on one entire side may be substituted for copper strips.

2.1.2 Crocus cloth

2.1.3 Alcohol, isopropyl, AR grade

2.1.4 Waxed noncorrosive string or equivalent

### **3 Test specimen**

#### 3.1 Description

The test specimen shall consist of an electrical connector or socket housing.

#### 3.2 Preparation

3.2.1 Surface oxides shall be removed from the copper substrate with a clean crocus cloth.

3.2.2 The substrate shall then be cleaned by rinsing in AR grade isopropyl alcohol and blow drying with clean air or dry nitrogen.

3.2.3 Immediately upon completion of cleaning, the test specimen shall be secured to the substrate with a waxed noncorrosive string or equivalent.

3.2.4 The specimen shall be attached to the metal strip in a manner that allows the greatest surface area to be in direct contact with the substrate.

3.2.5 Five specimens of each configuration/material system shall be prepared, unless otherwise specified in the referencing document.

3.2.6 All preparation shall be performed no more than 2.0 hours prior to being exposed to the environment specified in 4.4, unless otherwise specified in the referencing document.

### **4 Test procedure**

4.1 Each mounted test specimen shall be placed in an individual polyethylene bag of a size equal to or slightly larger than the test specimen. One specimen shall be contained in each bag. The bag opening shall be folded under the bottom side but not be sealed.

NOTE — This step is required to eliminate or minimize moisture accumulation that may dilute or remove corrosion products or particulates from the specimens and/or substrates involved.

4.2 A metal substrate without any connector or socket housing mounted to it shall be packaged separately, as specified in 4.1, and shall be used as a control specimen.

4.3 The test and control specimens shall be exposed to 10 days of cyclic humidity in accordance with EIA-364-31, method III, deleting steps 7a and 7b, and preconditioning and polarization voltage are not required.

4.4 Upon completion of the exposure, the test specimens shall be removed and allowed to air dry prior to removal of the test specimens from the metal substrate.



4.5 After removal of the test specimens from the metal substrate, the substrates shall be visually examined and compared to the control specimen. Pitting or the presence of corrosion products on any portion of the substrate, not observed on the control specimen, shall be reported.

## **5 Details to be specified**

The following details shall be specified in the referencing document:

5.1 Pass/fail criteria

## **6 Documentation**

Documentation shall contain the details specified in clause 5, with any exceptions, and the following:

6.1 Title of test

6.2 Specimen description

6.3 Test equipment used, and date of last and next calibration

6.4 Room ambient temperature and humidity

6.5 Test procedure

6.6 Visual observations and results

6.7 Name of operator and date of test

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