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EIA STANDARD

TP-11A

Resistance to Solvents Test Procedure for Electrical Connectors and Sockets

EIA-364-11A

(Revision of EIA-364-11)

APRIL 1999

ELECTRONIC INDUSTRIES ALLIANCE

**Electronic Components, Assemblies, Equipment & Supplies
Association**



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(From Standards Proposal No. 3712-B, formulated under the cognizance of the CE-2.0 National Connector Standards Committee.)

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TEST PROCEDURE NO.11A**RESISTANCE TO SOLVENTS TEST PROCEDURE
FOR ELECTRICAL CONNECTORS AND SOCKETS****1. SCOPE**

This procedure is to determine the ability of connector materials to withstand solvents which may be used to clean components.

2. APPARATUS

- 2.1 A beaker, container or vapor degreaser made of non-reactive material and of sufficient size.
- 2.2 A wire mesh basket of sufficient size, if applicable.
- 2.3 A weight scale accurate to within 1 gram.

3. SOLVENTS

CAUTION: The solvents in Table 1 exhibit some potential for health and safety hazards. The following safety precautions shall be observed:

- a) Avoid contact with eyes. Chemical goggles should be worn while performing this test.
- b) Avoid prolonged contact with skin.
- c) Provide adequate ventilation.
- d) Avoid open flame.
- e) Refer to the manufacturer's material safety data sheets for emergency first aid procedures.

- 3.1 One of the two groups of solvents as shown in Table 1 shall be chosen to perform the test contingent on the cleaning process involved. Unless otherwise specified in the detail specification, test samples shall be exposed to Group 1 solvents.

- 3.1.1.1 In the event solutions other than those specified in Table I, are to be used, those solutions shall be specified in the detail specification along with time/temperature levels involved.

TABLE 1 - SOLVENTS

Solvent	Description	Chemical Class	Exposure Conditions	
			Temperature	Time Minutes
TABLE 1 – SOLVENT Based Systems				
a	Ionox FCR or equiv.	Alcohol based	65.6°C (150°F)	5
b	Axarel 32 or equiv.	Aliphatic hydrocarbon with DBE	60.0°C (140°F)	10
c	B10ACT EC-15 or equiv.	Ester plus glycol	71.1°C (160°F)	10
d	Synergy CCS or equiv.	Terpene & Alcohol	25.0°C (77°F)	10
GROUP 2 - Vapor Systems				
a	Abzol EG or equiv.	1-bromopropane	70.6°C (159°F)	1
b	HFE-71DA or equiv.	1,2 dichloroethylene	40.6°C (105°F)	3
c	Vertel SMT or equiv.	1,2 dichloroethylene	37.2°C (99°F)	3
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1 Kyzen and Ionox are registered trademarks of Kyzen Corp.				
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4 Ablemarle and Abzol are registered trademarks of Ablemarle,Corp.				
5 Vertrel is a registered trademark of Dupont.				

4. TEST PROCEDURE

- 4.1 When specified, each individual test specimen shall be identified and weighed. Said weight shall be recorded.

- 4.2 Separate test specimens shall be exposed to each solution involved.
- 4.3 All solutions within each group selected shall be included in the test.
- 4.4 An appropriate vessel large enough to accept the test specimen shall be selected.
- 4.5 The vessel shall be filled to a level sufficient to cover the test specimen plus 2.54cm (1.0 inch) minimum.
- 4.6 The solution shall be heated to the temperature indicated. The tolerance of the temperature shall be $+2.8^{\circ}\text{C}/-0^{\circ}\text{C}$ ($+5^{\circ}\text{F}/-0^{\circ}\text{F}$) and maintained for 15 minutes prior to proceeding.
- 4.7 The test specimen shall be immersed in the solution and allowed to stand for the period of time indicated.
- 4.8 After removal from the solution, the test specimen shall be allowed to recover to room ambient conditions and remain in that state for 5.0 minutes prior to further examination.
- 4.9 When specified and prior to visual examination, the test specimen shall be weighed and said weight recorded.
- 5.0 Unless otherwise specified, the test specimens shall be visually examined under 10X magnification.

5. SUMMARY

- 5.1 The following details shall be specified in the individual specification:
 - 5.1.1 The number of specimens to be tested per solution.
 - 5.1.2 The extent of deterioration allowed including the extent of weight gain if applicable.
 - 5.1.3 The solvent group to be used.

5.1.4 Solutions other than those indicated in Table 1 along with time/temperature levels, when applicable.

5.2 The following details shall be indicated on the data sheet:

5.2.1 Title of test.

5.2.2 The test specimen description and sample size.

5.2.3 Solvents used along with time/temperature levels.

5.2.4 Results including defects and location.

5.2.5 Weight gain if applicable.

6. NOTE

6.1 The test solutions indicated herein shall be considered as test mediums only. They shall not be considered as an indication, approval, recommendation or acknowledgment of industry usage.

EIA Document Improvement Proposal

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