



## DOCUMENT CHANGE REQUEST

DCR number	645	Changes required for:	General	Originator:	Steve Thacker - ESCC
Date:	2011/10/20	Date sent:	2011/01/17	Organisation:	ESA/ESTEC
Status:	IMPLEMENTED				

Title: Requirements for the Evaluation of Standard Electronic Components for Space Application

Number: 22600 Issue: 4

Other documents affected:

Page:

Page 7 - Para 7.

Paragraph:

Page 7 - Para 7.

Original wording:

Proposed wording:

Amend Para 7, bullets (a) to (c) to be as follows [i.e. amend bullet (a) and add new bullet (b)]:

- (a) Construction technology
- (b) Materials used (see Para. 7.1)
- (c) Inherent reliability problems
- (d) Suitable screening procedures for the particular construction and technology

Add new Para 7.1 as follows:

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**7.1 RESTRICTIONS ON MATERIALS USED IN ESCC COMPONENTS**

An ESCC component shall not contain any hazardous material. Inter alia, the following restrictions shall apply to materials employed in the manufacture of ESCC components. Any component not meeting these restrictions shall fail the selection phase.

a) Components shall not contain materials or residues, that are unstable or fail to meet the ESCC outgassing requirements per ECSS-ST-Q-70-02.

b) Components shall not contain the following materials or residues:

- Cadmium
- Lithium
- Magnesium
- Mercury



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- Any radioactive substance

c) Components shall not use as a finish on the leads, terminations or external surfaces:

- Zinc
- Pure tin (>97% purity)

d) Pure tin (>97% purity) may be permitted in the internal construction of hermetically sealed components, on a case by case basis, only when there is no viable alternative and it can be demonstrated that there is no risk. Such use shall subsequently be clearly noted in the PID.

e) Beryllium oxide may only be used if an appropriate safety clause is contained in the relevant ESCC Detail Specification and a warning sign, in accordance with ESCC Basic Specification No. 21700, is marked on the component primary package and, where size permits, the component itself.


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### Justification:

Note - This DCR is raised in response to PSWG AI 39.6 (resulting from review of DCR471) on the subject of the use of 'pure tin' in ESCC components.

To clarify and re-enforce the restrictions on materials (including pure tin) used in the manufacture of ESCC components as assessed during the initial selection of suitable components for consideration for ESCC evaluation, qualification & procurement per ESCC Basic Specification No.22600.

The changes proposed are consistent with the material restrictions already identified in the ESCC system including ESCC Basic specification No.23500 for ESCC component lead materials and finishes, the Manufacturer Questionnaire form called up by ESCC No.20200 for component manufacturer evaluation, all ESCC Generic Specifications and the ESCC Component Manufacturer Maintenance of Qualification Report form, as well as the warning sign marking requirements of ESCC No.21700.

Attachments:
N/A
Modifications:
N/A
Approval signature:

Date signed:
2011-10-20