

EPEAT Clarification #40 Revision B

Large plastic parts free of certain flame retardants classified under European Council Directive

67/548/EEC

This Clarification applies to the following IEEE Standards and criteria:

Applicable Standards:

- IEEE 1680.1 – Computers and Displays
- IEEE 1680.2 – Imaging Equipment
- IEEE 1680.3 – Televisions

Applicable Criteria:

4.1.6.2

Conformity Decision Panel Determination:

The CDP requires specific testing to meet criterion 4.1.6.2, large plastic parts free of certain flame retardants classified under European Council Directive 67/548/EEC. This Clarification specifically addresses the use of chlorinated, brominated and phosphor-based flame retardants because of their current classification. Due to the fact that new flame retardants may emerge over time, this list of elements will be reviewed periodically. Note that there may be other ways to meet this criterion that are not listed here and would be reviewed on a case by case basis.

One acceptable approach for using **analytical test data** that can be used to demonstrate conformance to 1680.1: 4.1.6.2 is as follows:

1. A completed Annex 1 or equivalent identifying all plastic components greater than 25 grams.
2. Analytical test data that shows the results of testing for **Bromine, Chlorine and Phosphorus** for each component over 25 grams (or for each specific plastic used in components over 25 grams, if more than one component is made from the same plastic). This testing must be performed on the actual plastic component that is used in the product **or** on the post-compounded resin, and the test report should note which is tested. Conformant test results should indicate the following:
 - No more than 900 ppm Bromine ([test method XRF testing from IEC 62321-3-1](#)), AND
 - No more than 600 ppm Chlorine ([test method XRF testing from IEC 62321-3-1](#)), AND
 - No more than 1000 ppm Phosphorus ([test method XRF or ICP-AES or GC/MS on organic species](#)).

The threshold limits were chosen as likely detection limits for flame retardants with R-phrases. Since the problem with this criterion is that specific compounds are not able to be tested, testing is done on

the elements Bromine, Chlorine and Phosphorus which are likely to be found in flame retardants with R-phrases.

3. If elements are found over these limits, it must be proven that they don't come from flame retardants classified with R-phrases and the Manufacturer must: a) provide relevant information documenting the use of recycled plastic and how this may result in higher levels of the elements; and / or b) have additional testing done on parts over the limit to determine why the elements are present.

Empirical data may also demonstrate conformance to 1680.1: 4.1.6.2 if it meets the analytical test data requirements from number 2 above **and** if the Manufacturer can prove there is a conformance assurance system in place to support the empirical data, **and** the conformance assurance system specifically addresses the use of Bromine, Chlorine and Phosphorus in plastic components greater than 25 grams.

Background information:

This criterion requires “Evidence of certification from component manufacturers that is based on either empirical data demonstrating compliance or analytical test data demonstrating compliance.” This means that any evidence provided must be linked to the components themselves – it must show that the components themselves, components made from the same final compounded resin, or the final compounded resin itself are being tested to determine that not more than 0.1% of total weight of the resin contains flame retardants classified under the R-Phrases identified in the criterion. Flame retardants with R-phrases are numerous and difficult to test due to intellectual property issues. At this time it is most likely that flame retardants in the type of plastic used for products in 1680.1 would be bromine, chlorine or phosphorus-based which is why the list of elements has been narrowed down to these three. Requirements to test additional elements may be added if new relevant flame retardant classes emerge.

Change History: Revision A approved by the Conformity Decision Panel and moves to 30-day comment period on 10/17/2016. Revision B created addresses previously collected public comments and moves to 30-day comment period on 2/21/2017.