

Japan Electronics and Information Technology Industries Association  
Electronic Components Board  
Electronic Components Engineering Committee  
Electronic Components Environment Subcommittee

**About the industry's position relating to diboron trioxide (B<sub>2</sub>O<sub>3</sub>),  
newly listed in the Seventh SVHC under the EU-REACH Regulation**

Diboron trioxide (B<sub>2</sub>O<sub>3</sub>), CAS No. 1303-86-2, which is used in raw materials for glass or ceramics (hereinafter the "glass/ceramics"), has been newly listed in the Seventh SVHC (announced June 18, 2012) under the European Union's REACH Regulation ((EC) No 1907/2006). We present below the electronic components industry's position relating to the transmission of information on diboron trioxide (B<sub>2</sub>O<sub>3</sub>).

**1. Methods of indicating diboron trioxide (B<sub>2</sub>O<sub>3</sub>) (CAS No. 1303-86-2)**

In the field of electronic components, diboron trioxide (B<sub>2</sub>O<sub>3</sub>) is a substance which is widely used as a raw material for glass/ceramics of protective films, resistive bodies, electrodes, and others.

Chemical compounds in raw materials, however, first become a solid solution, and then, form glass/ceramics, which are multi-constituent substances (UVCB). It is difficult to assign a specific CAS Registry Number, keyed to the substance composition, to a UVCB substance like glass, which assumes an amorphous state with no identifiable crystal system, and ceramics, which do not always have the ingredients in fixed proportions. In general, UVCB substances like glass/ceramics cannot be identified with a specific CAS Number. Instead, it has been an established practice to express the constituent substances as oxides (diboron trioxide (B<sub>2</sub>O<sub>3</sub>), for example) and then describe the final UVCB as a mixture of such oxides. We consider it important to note the fact that the oxides themselves are not included in a UVCB although the UVCB is identified with the oxides.

Reference URL:

- Position of the Environmental Technology Board, the Glass Industry Conference of Japan

<http://www.gic.jp/techno/REACH.html> (Only Japanese)

- JEITA Guidelines for Indicating Ceramic

<http://home.jeita.or.jp/ecb/ceramic.html> (Only Japanese)

## 2. About replies to Certificate for Non-Inclusion of SVHC and others

Since diboron trioxide ( $B_2O_3$ ) itself is not formed in glass/ceramics of a finished electronic component for the reason given in foregoing section No. 1, we recommend replying that it is "Not Included."

## 3. About transmission of information on chemical substances included in products

Notwithstanding foregoing section No.2, we, in many cases, still specifically list diboron trioxide ( $B_2O_3$ ) as a constituent as in the past in the information we transmit on an electronic component. The reasons are given in items (1) and (2) below. Please, however, for the reason given in section No. 1, interpret such a listing as "not classified as an SVHC substance."

We specifically list diboron trioxide ( $B_2O_3$ ) in the information on chemical substances included in a product for the following reasons:

(1) Glass of a multi-constituent substance (UVCB) has no CAS Number previously registered in entry of data into IMDS. The inclusion rates of all substances included in each constituent material must add up to 100% (with less than 10% of wild card compounds) for the particular constituent material.  
Reference to the oxides to describe glass is recommended in the IMDS Recommendation.

(2) Diboron trioxide ( $B_2O_3$ ) has always been disclosed in the past as "a constituent of an intentionally-added raw material" as required to complete organizational or industry formats other than IMDS.

For the reasons as shown in the foregoing, reference to the constituent oxide compounds is a recognized method to describe UVCB substances. We consider this method as most

appropriate to use in the information to be transmitted relating to the UVCB substances.

The gist of our position as given here is that we will represent boron present in molded articles as “diboron trioxide (B<sub>2</sub>O<sub>3</sub>)” in the information to be transmitted but that “diboron trioxide (B<sub>2</sub>O<sub>3</sub>)” so listed does not refer to an SVHC.

#### 4. Future action

Diboron trioxide (B<sub>2</sub>O<sub>3</sub>) is universally used in electronic components. There are currently numerous electronic components that cannot use alternative glass/ceramics containing no diboron trioxide (B<sub>2</sub>O<sub>3</sub>).

We will meet the laws and regulations and take action on the transmission of information in line with the trends of the automotive, electric, electronic, and other industries.

#### Footnotes:

- SVHC: Substances of Very High Concern. They are substances having the property of causing significant harm to human health or environment, and are selected to be added to REACH Annex XIV or the Candidate List referenced in Annex XIV.
- UVCB: Substances of Unknown or Variable composition, Complex reaction products or Biological materials.
- IMDS: International Material Data System. It is a system for collecting information on, and the substances included in, constituent materials of automobiles.
- Wild card compound: A fictitious compound (as used in reports related to an unspecified compound; or as used to conceal a highly confidential substance) that is used in IMDS as a matter of convenience.

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