



To Whom This May Concern:

The following comprises the official position of the Woven Glass Reinforcement Task Group, a standards development committee organized under the IPC – Association Connecting Electronics Industries (hereinafter: WGR) with regard to the listing of Boric Oxide (diboron trioxide or  $B_2O_3$ ) by the European Chemicals Agency (ECHA) as a REACH Substance of Very High Concern (SVHC).

In consultation with industry experts, glass companies and consortia, the WGR has confirmed the following:

That,

- For convenience, the composition of borosilicate glass is often expressed in terms of oxides ( $B_2O_3$ ,  $SiO_2$ ,  $Al_2O_3$ ,  $Na_2O$ ,  $CaO$ , etc.). This does not imply anything about the nature and structure of glass.
- Boron is a network former and is part of the structure of borosilicate glass. All raw materials are completely consumed during manufacturing, and no raw materials are present in the final product.
- Borosilicate glass products are typically articles, but in order to manufacture these articles, it is necessary to manufacture the substance glass first.
- $B_2O_3$  in glass e.g. as seen on a technical data sheet, is not the same as free Boric Oxide – boron in glass is covalently bonded into the structure via Si–O–B chemical bonds. Borates are clearly intermediates in the manufacture of borosilicate glass and therefore exempted from Authorization.
- The inclusion of  $B_2O_3$  to the REACH SVHC list, therefore, does not impact on E-glass or other borosilicate glasses.

It is important to note that this WGR position is in direct alignment with the positions of: the following glass manufacturers: AGY, Nitto Boseki Co., Ltd., PPG Industries Inc. and Saint-Gobain Vetrotex as well as the following industry trade groups: Glass Alliance Europe, Glass Fibre Europe [European Glass Fibre Producers Association (AISBL) and the Glass Industry Council of Japan (GICJ)].

Sincerely,

A handwritten signature in black ink, appearing to read 'Mike Bryant', with a long horizontal flourish extending to the right.

Mike Bryant  
Chair: IPC 3-12d Woven Glass Reinforcement Task Group

A handwritten signature in black ink, appearing to read 'David W. Bergman', with a long horizontal flourish extending to the right.

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