

## Ventec - TBBPA Flame Retardant Statement

1<sup>st</sup> June 2026

TBBPA (Tetrabromobisphenol-A; 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol) is an effective flame retardant that improves the fire safety of electrical and electronic equipment. It is used in printed circuit board base materials, primarily as a reactive flame retardant. When used as a reactive flame retardant it is not present as a free chemical in the finished material but becomes integrated into the polymer matrix. This limits bioavailability making the potential for exposure extremely low as confirmed by numerous studies.

According to Prismark Partners LLP, in 2024 halogen-free PCB base materials accounted for only 14% of total copper clad laminate and prepreg sales,<sup>[1]</sup> the vast majority of the balance using TBBPA as a flame retardant. TBBPA is a brominated flame retardant commonly used in printed circuit board materials, paper, and textiles. The EU Annex 15 SVHC report noted that TBBPA had the largest worldwide production of any brominated flame retardant, with a global production volume over 100,000 tons per year in 2004.<sup>[2]</sup>

Under the EU REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulations in January 2023, TBBPA was added to the substances of very high concern (SVHC) candidate list. This places obligations on importers and supplier of articles containing a substance included in the SVHC list in a concentration above 0.1% weight by weight (w/w) to provide the recipient of the article with sufficient information to allow safe use.

Ventec uses TBBPA as a flame retardant in a number of its products. In 2020 we took part in a study with other base materials suppliers to establish if residual TBBPA could be detected in our products. The test results from an independent laboratory showed that all of our brominated flame retardant base materials had less than 1ppm (which was the limit of detection of the test) of free TBBPA demonstrating essentially that the flame retardant had completely reacted.<sup>[3]</sup>

Ventec have thus established that its products contain less than 1,000th of the 0.1% threshold level for TBBPA and we are satisfied that we meet all of our obligations under Article 33 of the EU REACH regulation.

In late 2024, the European Commission officially abandoned a long-debated proposal to restrict TBBPA in electronics under the RoHS (Restriction of Hazardous Substances) directive. This means its primary use as a flame retardant in printed circuit boards remains unrestricted. If, however, this decision is ever reversed and TBBPA does become restricted under RoHS or REACH legislation we are confident that our products will be unaffected as no free TBBPA is detected at the threshold limit for either RoHS or REACH.

N.B. The above statements apply to the reactive use of TBBPA, which is exclusively the case for all Ventec products. We are, however, aware that some printed circuit board base materials available in the market from other manufacturers use TBBPA as an additive flame retardant. In such cases we believe that these products are at risk of having free TBBPA above the 0.1% weight by weight (w/w) threshold thus requiring the supplier to meet their obligations to provide the recipient of the article with sufficient information to allow safe use of the article under the regulations. Such products would also be at risk should RoHS or REACH apply future restrictions.

[1] <https://www.prismark.com/post/ccl-market-update-october-2025-2024-market-rebound-driven-by-high-speed-and-ai-demand>

[2] <https://echa.europa.eu/documents/10162/3dfab98b-2863-91bb-71a4-c9c0859d2342>

[3] <https://iconnect007.com/index.php/article/121573/residualfree-tbbpa-in-fr-4/121576>

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