

July 7, 2014

**Dear Healthcare Provider:**

This letter is provided to you in response to your request for information on Kerr Dental products containing Bisphenol A (BPA).

**We would like to state that Kerr restorative products (adhesives, cements or composites) do not contain Bisphenol A or Bisphenol A dimethacrylate (Bis-DMA).**

The materials that Kerr utilizes are Bisphenol-A-Glycidyl Ether Methacrylate (BisGMA) and ethoxylated bisphenol-A-dimethacrylate (Bis-EMA). Both of these chemicals contain bisphenol A as the core of their chemical structure. Thus, many people make the honest mistake of expecting the risks associated with BisGMA to be the same as BPA.

The chemical structures of Bisphenol A (Figure 1), Bis-DMA (Figure 2), Bis-GMA (Figure 3) and Bis EMA (Figure 4) are shown below.

Figure 1. BPA

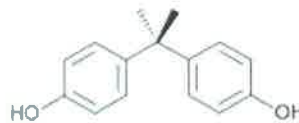


Figure 2. Bis-DMA

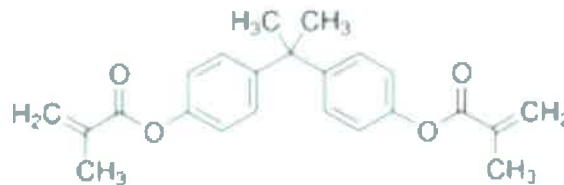


Figure 3. Bis-GMA

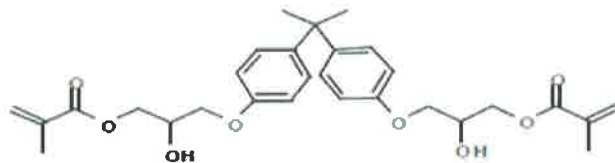
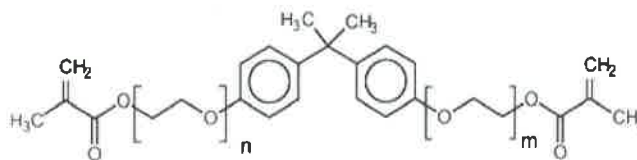


Figure 4. Bis-EMA



As shown above, Bis-DMA has the ester linkage to cap the hydroxyl group on BPA which will be subjective to hydrolysis/degradation per certain enzyme activity overtime, then generate BPA. For Bis-GMA and Bis-EMA, the hydroxyl groups on BPA are capped through a strong ether linkage which will not be hydrolyzed and degrade into BPA given similar conditions.

Independent studies such as the one published in "Pediatrics" (Fleisch AF, Sheffield PE, Chinn C, Edelstein BL, Landrigan PJ. Bisphenol A and related compounds in dental materials. Pediatrics. 2010 Oct;126(4):760-8), indicate that BisDMA may release BPA. Bis DMA is not the same as BisGMA. Other studies have confirmed that BisGMA is stable under light curing conditions, in the oral cavity and does not hydrolyze to BPA.

Products that contain BPA are presently studied for a variety of biological effects and as new information becomes available Kerr will incorporate this information in our risk assessment analysis. However, at the present time, we are confident that Kerr's Bis-GMA products remain safe for clinical use.

If you have any questions, please contact Customer Care at 800.KERR.123.



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