

Yellowing of desflurane in the vaporizer

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To the Editor:

One morning we noticed yellow colored desflurane (Suprane[®]) and white, fluffy particles through the level indicator of a vaporizer (D-Vapor[®], Dräger Medical, Telford, PA, USA) (supplementary material Fig. 1). Baxter's response to our inquiry is as follows:

As desflurane has a low boiling point (23 °C), the integrity of the bottle closure mechanism is very important. To obtain optimal sealing, butylated hydroxytoluene (BHT) is added as an antioxidant to elastomers in the core gasket of the bottle [1]. BHT forms by-products with exposure to air, and some of these have a yellowish color. However, the by-products have a much higher boiling point (over 200 °C) compared to desflurane, and are not vaporized with normal use. They gradually accumulate in the sump of the vaporizer and eventually become visible. The white particulate matter from the vaporizer could not be analyzed, but it is likely another BHT by-product. It is completely safe for patients because the BHT by-products are not vaporized during use. Further, Baxter has also confirmed that only 100 % pure desflurane is present in the vapor stream.

We recommend that you contact Baxter if you need more information, because it is not mentioned in the package insert. While similar cases have been reported previously [1, 2], discoloration of desflurane occurs relatively infrequently, and is not widely known among anesthesiologists in Japan. However, it is important for us to recognize this phenomenon when it occurs, and at the same time be reassured that it is safe. While we were surprised at first by the discoloration, we continue to use desflurane in our institution.

Conflict of interest None.

References

1. Schulte T, Ellis S. Discolored desflurane in the vaporizer. *Anesth Analg.* 2010;110:644–5.
2. Lobaz S, Randles D, Thomas D. Desflurane vaporiser contamination. *Anaesthesia.* 2014;69:190–1.

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