

Benzophenone-3

Icky

ALSO-CALLED-LIKE-THIS: Oxybenzone

WHAT-IT-DOES: [sunscreen](#)

IRRITANCY: 0

COMEDOGENICITY: 0

Official CosIng Information

Details

A **chemical sunscreen agent** that absorbs UVB and short UVA rays (280-350nm) with its peak protection at 288 nm. Unlike many other chemical sunscreens, it is **highly stable but** its UV absorbing abilities are **weak** so it always has to be combined with other sunscreen agents for proper protection. More often than not, it's **used as a photostabilizer** rather than a proper sunscreen agent as it can protect formulas nicely from UV damage.

Regarding safety, BP-3 is somewhat **controversial**. First, its molecules are small (228 Da) and very lipophilic (oil loving) and these properties result in **very good absorption**. The problem is that you want sunscreens on the top of your skin and not in your bloodstream, so for BP-3 this is a problem. In fact, it absorbs so well that 4 hours after application of a sunscreen product with BP-3, it **can be detected in urine**.

Another concern of BP-3 is that it shows **some estrogenic activity**, though it's probably not relevant when applied topically to the skin. Estrogenic activity was confirmed only in-vitro (in test tubes) and when taken orally by lab animals, and not when used topically as you would normally.

In fact, a 2004 follow-up study to examine the estrogenic effect of sunscreens when used topically on the whole body found that "the endogenous levels of reproductive hormones were unaffected" (even though BP-3 could be detected both in plasma and urine, so its absorption is no doubt too good). If that was not enough, [Wikipedia](#) claims that BP-3 is nowadays the most common allergen found in sunscreens, and the always-trustworthy [smartskincares writes](#) that "[benzophenones] have been shown in some studies to promote the generation of potentially harmful free radicals".

On the up side, sunscreens are pretty well regulated in several parts of the world, and BP-3 is considered "**safe as used**" and is an allowed sunscreen agent everywhere. It can be used in concentrations of up to 10% in the EU and up to 6% in the US. **Overall**, BP-3 is probably our least favorite sunscreen agent and we prefer sunscreens without it.

However, if you find a formula that you love and contains BP-3, we do not think that you should throw it away. A sunscreen with BP-3 is definitely better than no sunscreen.