Benzophenone-3 (BP-3)

Benzophenone-3 (BP-3) is a naturally occurring chemical found in some flowering plants. BP-3 absorbs and scatters the sun’s harmful ultraviolet (UV) rays. For this reason, it is produced for use as sunscreen in lotions, conditioners, and cosmetics. BP-3 also is used in plastic products to block and prevent UV rays from altering the plastic and the contents inside.

How People Are Exposed to BP-3

People may be exposed to BP-3 when they apply sunscreen or cosmetic products that contain the chemical to their skin. Once applied, a small amount of BP-3 passes through the skin into the body.

How BP-3 Affects People’s Health

The human health effects from skin exposure to low levels of BP-3 are unknown. Occasionally, wearing products containing BP-3 has resulted in a skin allergy or photo allergy, a skin reaction that occurs with exposure to sunlight. BP-3 has been shown to cause weak hormonal activity in laboratory animals. More research is needed to assess the human health effects of exposure to BP-3.

Levels of BP-3 in the U.S. Population

In the *Fourth National Report on Human Exposure to Environmental Chemicals (Fourth Report)*, CDC scientists measured BP-3 in the urine of 2,517 participants aged six years and older who took part in the National Health and Nutrition Examination Survey (NHANES) during 2003–2004. By measuring BP-3 in urine, scientists can estimate the amount of BP-3 that has entered people’s bodies.

CDC scientists found BP-3 in the urine of nearly all of the people tested, indicating widespread exposure to BP-3 in the U.S. population.

Finding a measurable amount of BP-3 in urine does not mean that levels of BP-3 cause an adverse health effect. Biomonitoring studies on levels of BP-3 provide physicians and public health officials with reference values so they can determine whether people have been exposed to higher levels of BP-3 than are found in the general population. Biomonitoring data can also help scientists plan and conduct research on exposure and health effects.
The Centers for Disease Control and Prevention (CDC) protects people’s health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.