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Butylated Compounds

Butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT) are used as preservatives in a variety of personal care products. Both of these chemicals are also used as preservatives in foods. These chemicals are linked to several health concerns including endocrine disruption and organ-system toxicity.



WHAT ARE BUTYLATED COMPOUNDS?

BHA is primarily used as an antioxidant and preservative in food, cosmetics, food packaging and animal feed.

It also serves as a preservative and antioxidant in pharmaceutical preparations and cosmetic formulations that contain oils and fats.^[1] Dermal exposure to BHA occurs from its use as an antioxidant in commercial products, especially lipstick and eye shadow.^[1] BHT is a toluene-base ingredient that is used as a preservative in both food and personal care products.^[2]

Found In

- Lip products
- Hair products
- Makeup
- Sunscreen
- Antiperspirant/deodorant
- Fragrance
- Creams

What to look for on the label

- BHA
- BHT

Health Concerns

Endocrine disruption: The European Commission on Endocrine Disruption has determined that there is strong evidence that BHA is a human endocrine disruptor.

Organ-system toxicity: Environment Canada Domestic Substance List has classified BHA as a high human health priority.^[3] A study carried out in normal mammalian kidney cells found that exposure to BHA caused specific damage at the cellular level and was found to exert a significant cytotoxic effect even at low doses.^[4] The Environment Canada Domestic Substance List has classified BHT as expected to be toxic or harmful.^[2] A safety assessment of BHT reported that BHT applied to the skin of rats was associated with toxic effects in lung tissue, but judged that the low concentrations used in cosmetics were safe.^[5]

Developmental and reproductive toxicity: Studies carried out in rats found that exposure to high doses of BHA resulted in weak dysfunction and underdevelopment of the reproductive systems of both male and female rats. Changes in testosterone levels, sex weight organs and sexual maturation were also observed.^[6]

Cancer: The National Toxicology Program (NTP) Report on Carcinogens, 12th Edition, reports that BHA is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from animal studies.^[1] The California EPA's Proposition 65 list also identifies BHA as a possible human carcinogen and requires labeling for products that are used on the lips, while the International Agency for Research on Cancer (IARC) determined that there was only limited evidence of carcinogenicity for products used on the lips.^[3] One study found that dietary exposure to BHA caused both benign and malignant tumors in the stomachs of rats, mice and hamsters.^{[1][7]} However another study determined that typical dietary levels of BHA did not result in an increase in incidence of stomach cancer.^{[1][8]}

Irritation: The American Conference of Governmental Industrial Hygienists (ACGIH) has determined that there is moderate evidence that BHT is a human respiratory irritant.^[2]

Vulnerable Populations

Babies & Children (<https://www.safecosmetics.org/population/babies-children/>),
Pregnant Women (<https://www.safecosmetics.org/population/pregnant-women/>).

Regulations

N/A

How to Avoid?

Read labels and avoid products that contain BHA or BHT.

Explore other Chemicals

Methylisothiazolinone and Methylchloroisothiazolinone
(<https://www.safecosmetics.org/chemicals/methylisothiazolinone/>)

[Toluene \(https://www.safecosmetics.org/chemicals/toluene/\)](https://www.safecosmetics.org/chemicals/toluene/)

[Carcinogens in Cosmetics \(https://www.safecosmetics.org/chemicals/known-carcinogens/\)](https://www.safecosmetics.org/chemicals/known-carcinogens/)

[Phthalates \(https://www.safecosmetics.org/chemicals/phthalates/\)](https://www.safecosmetics.org/chemicals/phthalates/)

[Quaternium-15 \(https://www.safecosmetics.org/chemicals/quaternium-15/\)](https://www.safecosmetics.org/chemicals/quaternium-15/)

[Nitrosamines \(https://www.safecosmetics.org/chemicals/nitrosamines/\)](https://www.safecosmetics.org/chemicals/nitrosamines/)

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