

Relevant Contact Allergy to Benzisothiazolinone found in a Personal Care Product

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OBJECTIVES

❖ To describe the first reported case of allergic contact dermatitis resulting from benzisothiazolinone (BIT) in a personal care product (PCP)

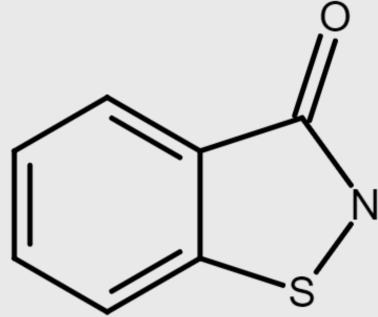


Figure 1. The chemical structure of BIT

CASE

- 35-year-old female with 3-month history of bilateral hand dermatitis
- **Symptoms started after a recent cross-country move** to Minnesota
- * Topical corticosteroids, crisaborole, oral cephalexin, and intramuscular triamcinolone were ineffective



Figure 2. Patient's hands show diffuse erythema, sheet-like desquamation, and webspace involvement



PATCH TESTING

- 2019-2020 NACDG Screening Series
- Rubbers

Corticosteroids

Medicaments

Emulsifiers

Home products

Preservatives

RESULTS

Allergen	Reaction
BIT	+
Nickel (2.5, 5%)	++
Bronopol	+/-
MCI/MI (x2)	
MI (x2)	-
OIT	



Figure 3. Final patch-test reading is notable for a strong (++) reaction to BIT



Purified Water, Sodium Methyl Cocoyl Taurate (Coconut-Based Clean er), Sodium Lauroamphoacetate (Coconut-Based Cleanser), Sodium Lauryl Glucose Carboxylate (Coconut-Based Cleanser), Lauryl Glucoside (Coconut Oil-Based Cleanser), Decyl Glucoside (Vegetable-Based Cleanser), Coco-Glucoside (Coconut-Based Cleanser), Glyceryl Oleate (Plant-Based Skin Softener), Citric Acid (Citrus-Based Preservative), Vegetable Clycerin (Plant-Based Skin Softener), Sodium Citrate (Plant-Based pH Adjuster), Benzisothiazolinone (Plant-Based Skin Softener), Natural Fragrance, Aloe Barbadente (Plant-Based Skin Softener), Tocopherol (Vitamin E), Vanillin ex Vanilla Bean (Natural)

Figure 4. Puracy Lavender & Vanilla Hand Soap, purchased shortly after the patient moved to Minnesota, lists BIT as an ingredient

DISCUSSION

- ❖ Products designed for use on human skin are regulated differently from those *not* designed for use on human skin
- ❖ BIT is a biocide and fungicide banned for use in PCPs in Europe, but remains in US with no prohibitive regulations¹
- ❖ While other isothiazolinones (MCI/MI) are routinely found in hand soaps, BIT has historically been used in products not designed for human skin such as paints, varnishes, cleaners, and detergents^{1,2}
- ❖ Per the US Food and Drug Administration's Voluntary Cosmetics Registration Program, BIT has not been reported in PCPs³
- ❖ Case reports document allergy to BIT in CPAP wash, PVC gloves, and glues^{4,5}
- ❖ Previous analyses find all-purpose cleaners as the most common source of exposure; PCPs were not reported^{4,5}
- While our patient was exposed to BIT in her household cleaners, daily exposure to BIT in her hand soap is very relevant
- This case underscores the importance of investigating PCPs for identified allergens, even when not anticipated
- Clinicians should be aware of BIT in PCPs

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