



Authoritative facts about the skin from the [New Zealand Dermatological Society Incorporated](#).

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Allergy to quaternium-15

What is quaternium-15 and where is it found?

Quaternium-15 is a formaldehyde-releasing preservative. It is used in many cosmetics and pharmaceutical preparations. It is also used as a preservative in many commercial and industrial products. The table below shows some of the products that may contain quaternium-15.

Products containing quaternium-15		
Cosmetics	Self-hygiene/pharmaceutical products	Commercial/industrial products
<ul style="list-style-type: none"> • Foundations, powders, concealers • Eye makeup (liners, shadows, mascara) • Facial makeup (blushes) • Bronzes • Makeup removers 	<ul style="list-style-type: none"> • Shampoos • Soaps • Moisturizing lotions and creams • Shaving products • Body powders • Sunscreens • Cleansers and other skin care products • Disinfectants 	<ul style="list-style-type: none"> • Adhesives • Floor wax and polish • Paper and paperboard • Water-based inks • Latex paints • Industrial cutting fluid • Laundry starch • Joint cement • Printing pastes

What are the reactions to quaternium-15 allergy?

Individuals reacting to quaternium-15 may be either sensitive to [formaldehyde](#) or have a specific sensitivity. Typical [allergic contact dermatitis](#) reactions may occur from either of these sensitivity types.



Positive patch tests to quaternium 15



Hand dermatitis due to quaternium-15 in a moisturiser



Facial dermatitis due to moisturiser

Am I allergic to quaternium-15?

Quaternium-15 allergy is diagnosed from the clinical history and by performing special allergy tests, i.e. [patch](#)

[tests](#). Patch testing with 1% quaternium-15 in petrolatum is used.

Self-testing a product for quaternium-15 is possible but should be done only after first talking with your doctor. This should be done only with products that are designed to stay on the skin such as cosmetics (not including eyeliners or mascaras) and lotions. Apply a small amount of the product to a small tender area of skin such as the bend of your arm twice a day for 1 week. Examine the area each day and if no reaction occurs, repeat the test on a small area in front of your ear. If no reaction occurs, you are unlikely to be allergic to it. Even so, you should still be cautious if you are intending to use it over large areas, as it may still be an irritant.

Products such as [shampoos, soaps and cleansers](#) should not be tested in this way as they may cause an irritant dermatitis, if they are covered or overused on tender areas.

Treatment of contact dermatitis due to quaternium-15 exposure

If you are diagnosed with quaternium-15 allergy then avoid exposure to quaternium-15-containing products.

Once the dermatitis appears on the skin, treatment is as for any acute [dermatitis/eczema](#), i.e. [topical corticosteroids](#), [emollients](#), treatment of any secondary bacterial infection (*Staphylococcus aureus*), etc.

What should I do to avoid quaternium-15 allergy?

Read product labels and avoid products that contain quaternium-15 or any of its alternative names.

Avoid related substances that you may also be allergic to. This includes formaldehyde and other formaldehyde-releasing preservatives found in cosmetics, topical agents, as well as industrial and metalworking fluids.

Formaldehyde-releasing preservatives to avoid

- Imidazolidinyl urea (Germall®)
- Diazolidinyl urea (Germall II®)
- DMDM hydantoin (Glydant®)
- Bromonitropropane diol (Bronopol™)
- Tris (hydroxymethyl) nitromethane (Tris Nitro®)

Alert your doctor to the fact that you have an allergy to quaternium-15. Your dermatologist may have further specific advice, particularly if you are highly sensitive.

Preparations that contain other types of preservatives, as long as you do not have an allergy to these too, should be safe to use. Ask your pharmacist for advice.

Possible suitable alternative preservatives

- Methylparaben, ethylparaben, propylparaben, butylparaben, benzylparaben
- Methylchloroisothiazolinone
- Methylisothiazolinone
- Methylidibromoglutaronitrile/phenoxyethanol
- Sorbic acid
- Propylene glycol

Alternative names for quaternium-15

Quaternium-15 is also known by several other names. These include:

- Azonium-adamantane chlorid
- N-(3-chloroallyl) hexaminium chloride
- Chloroallyl methenamine chloride
- 1-(3-chloroallyl)-3,5,7 triaza-1-azoniaadamantane chloride
- Methanamine-3-chloroallylochloride
- Hexamethylenetetramine
- Dowicil®75, Dowicil®100, Dowicil®200

Avoid all of these. At work, request a material safety data sheet to help identify potential sources of exposure.

Further information

Formula: C₉H₁₆Cl₂N₄

CAS number: 51229-78-8

Cross reactions: formaldehyde, formaldehyde-releasing preservatives

Sensitiser: formaldehyde

Patch Test: 1% quaternium-15 in petrolatum

Sources of Exposure to Quaternium-15

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| <ul style="list-style-type: none"> • Adhesives and glues • Cosmetics and toiletries • Cutting fluids • Disinfectants and cleaning agents • Latex paints | <ul style="list-style-type: none"> • Medications such as creams and lotions • Paper products • Polishes • Printing/etching materials |
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Reference

Book: [Fisher's Contact Dermatitis. Ed Rietschel RL, Fowler JF. Lippincott Williams & Wilkins 2001](#)

Related information

On DermNet NZ:

- [Dermatitis](#)
- [Allergic contact dermatitis](#)
- [Patch testing](#)

Other websites:

- [T.R.U.E. Tests](#): vcontact allergy to quaternium-15
- [Allergic contact dermatitis](#) - emedicine dermatology, the online textbook

Books:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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