

15 Carba Mix – Patient Information

Your T.R.U.E. TEST results indicate that you have a contact allergy to carba mix or one of its components. Carba mix chemicals in contact with your skin may result in dermatitis. This contact allergy may cause your skin to react when it is exposed to these substances, although it may take several days for the symptoms to appear. Typical symptoms include redness, swelling, itching and fluid-filled blisters.

Carba mix contains the following three allergens:

- Diphenylguanidine
- Zincdibutyldithiocarbamate
- Zincdiethyldithiocarbamate

These chemicals are used as fungicides and pesticides, and also in the manufacture of many rubber products. You are most likely to contact these substances when using, wearing or handling rubber products at work or at home.

Where is carba mix or one of its components found?



At work, you may find carba mix or one of its components in the manufacture or use of:

- **Industrial and safety products** made with natural rubber, butyl rubber, nitrile or neoprene - such as boots, shoes, adhesives, plugs, goggles, mats, headphones, masks, respirators, aprons, gloves, cords, tubing, insulation, and sheeting
- **Office products** made with natural rubber, nitrile or neoprene - such as rubber bands, erasers, mats, and utility gloves
- **Health care equipment** made with natural rubber, butyl rubber, nitrile or neoprene - such as medical and utility gloves, masks, bed sheeting, dental dams, anesthesia equipment, aprons, and tubing
- **Sports equipment** made with natural rubber, butyl rubber, nitrile or neoprene - such as wetsuits, shoes, boots, masks, racquet and club handles
- **Chemicals** used as fungicides or to prevent mildew or mold



At home, you may find carba mix or one of its components in:

- **Household products** made with natural rubber, butyl rubber, nitrile or neoprene - such as rubber bands, ear- and headphones, masks, condoms and diaphragms, goggles, shoes, utility gloves, swimwear, toys, hoses, tubing, and elastic
- **Sports equipment** made with natural rubber, butyl rubber, nitrile or neoprene - such as shoes, wetsuits, boots, masks, racquet and club handles
- **Fungicides and pesticides** used in the garden

Carba mix chemicals can also be found in some soaps, shampoos, disinfectants and adhesives as well as in anti-rust products

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How can you avoid carba mix or one of its components?

- Avoid direct skin contact with rubber products in your car, at work and at home. Use rubber-free alternatives made of vinyl, plastic, leather, wood or fabric.

Some surgical gloves are labeled “hypoallergenic and rubber free” and are made of synthetic materials free of latex and all rubber accelerators. Examples are gloves made of a synthetic co-polymer of styrene and butadiene, vinyl gloves or nitrile gloves. Articles made with polyvinyl chloride, polyvinyl acetate or silicone are also suitable alternatives.

- Use fabric or plastic films to handle rubber products and avoid direct skin contact.

Avoid rubber insoles, rubber boots and rubber shoes such as sneakers and tennis shoes. Wear solid leather shoes with no inner or outer soles, like moccasins. If in doubt wear new shoes for a few days and watch for a rash. Try insoles free of carba mix chemicals to see if insoles makes dress shoes wearable for you.

Beware of socks and stockings worn with shoes containing carba mix chemicals, as carba mix chemicals can contaminate them and does not wash out.

- Only use products that do not list carbamix, one of its components, or related chemicals on the label, ingredients list or Material Safety Data Sheet (MSDS).
- Tell your physician, pharmacist, dentist, veterinarian, beautician and hairdresser that you are allergic to carba mix, which is often used in rubber products. Ask for rubber products that do not contain carba mix or related substances.
- Wear protective gloves and clothing made of leather, fabric, plastic or rubber that is free of carbamix and related substances.
- Use heavy duty non-rubber gloves (Allerderm® Heavy Duty vinyl or Silvershield®/4H® gloves) when working with chemicals that might contain carba mix or one of its components.
- If you think that you contact carba mix or one of its components at work, ask your employer for MSDS or manufacturer information on the product(s). Wear protective clothing when handling rubber hoses, seals, cables, etc. Talk to your employer about using a different product.

What should you look for and avoid?*

Avoid products that list carba mix or any of the following names in the ingredients, MSDS or package insert.

- **Diphenylguanidine** or 1,3-Diphenylguanidine; N,N'-Diphenylguanidine
- **Zincdibutyldithiocarbamate** or bis(N,N-dibutyldithiocarbamate)zinc; carbamic acid dibutyldithio-, zinc complex; zinc bis(dibutyldithiocarbamate)
- **Zincdiethyldithiocarbamate** or diethyldithiocarbamic acid zinc salt; zinc bis(diethyldithiocarbamate); zinc diethylcarbomodithioate

You may also react to these substances because carbamates and thiurams are very similar:

- Tetramethylthiuram monosulfide
- Tetramethylthiuram disulfide
- Dipentamethylenethiuram disulfide
- Disulfiram
- Manganese salts of diethyl- or dibutyl-dithiocarbamates

If your skin is regularly exposed to rubber, you may develop reactions to other substances commonly used in the manufacture of rubber, such as mercaptobenzothiazoles, mercapto mix and thioureas.

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What are some products that may contain carba mix or related substances?*

- Zineb Fungicides: Pesticides with Dithane® Z-78, Funjeb, Micide, Novosir, Parzate, Perosin, Polyram® Z
- Maneb Fungicides: Pesticides with Dithane® M-22, Lonocol M, Manesan, Manex®, Manzate® Polyram® M
- Mancozeb Fungicides: Pesticides with Dithane® M-45, Mancomix, Manoseb, Marzin, Penncozeb®, Zinmaneb
- Gloves, condoms, bottle nipples and other products made of natural rubber, butyl rubber, nitrile or neoprene
- Antabuse® (medication for alcoholism)

What products may NOT contain carba mix or related substances?*

- Products made entirely of vinyl (PVC), plastic, silicone, polyurethane, polyethylene or acrylates, such as:
 - Durex® Avanti polyurethane condoms
 - Trojan Supra® Microsheer™ polyurethane condoms
- Gloves made of vinyl (PVC), polyurethane, polyethylene or special thermoplastic elastomers:
 - Allerderm® Vinyl medical exam gloves
 - Silvershield®/4H® gloves
 - North Safety PVC Gloves
 - Elastyfree® and Elastylite® surgical gloves
 - Allerderm® Heavy Duty Vinyl utility gloves
- Nitrile or neoprene gloves manufactured without carbamates or thiurams:
 - N-Dex® Free Ultimate nitrile gloves
 - Allerderm® nitrile medical exam gloves
 - True Advantage® nitrile surgical and exam gloves
 - Ultra Preserve® neoprene surgical and exam gloves
- Fungicides without carbamates:
 - Botran® fungicide
 - Fludioxonil (Maxim) or Captan™ fungicides
 - Copper based fungicides
 - Myclobutanil or Sythane® fungicides

*For additional information about products that might contain carba mix or a related substance, go to the Household Product Database online (<http://householdproducts.nlm.nih.gov>) at the United States National Library of Medicine. These lists are brief and provide just a few examples. They are not comprehensive. Product formulations also change frequently. Read product labels carefully and talk to your doctor if you have questions. These are general guidelines. Talk to your doctor for more specific instructions



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For further information about contact allergies and patch testing, visit www.truetest.com.