

1. NICKEL SULFATE

Concentration: 0.20 mg/cm²

Vehicle: hydroxypropyl cellulose

Allergen component per patch: Nickel, 0.036 mg

Synonyms or components:

Nickel sulfate:

- Nickel (Ni)
- Nickel alloys
- Nickel catalyst
- Nickel soluble salts
- Carbonyl nickel powder
- Nickel-plating
- Elemental nickel

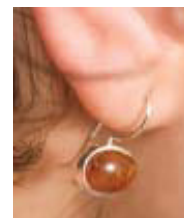
Chemical Identification: CAS Registry Nos. 7440-02-0, 7786-81-4;
EINECS Nos. 231-111-4, 232-104-9

Other substances to which the patient may react:

- Possible coexisting allergies to chromate and cobalt with occupational exposure.

Potential Allergen Sources:

- Nickel and nickel-plated objects; tools; metal machine parts and equipment;
- Nickel catalysts, powders and pigments;
- Metalworking fluids and oils;
- Costume jewelry; keys, coins and utensils;
- Metal clothing fasteners;
- Foods such as legumes, nuts, grains, fish, chocolate, and potatoes.



Clothing & Jewelry

2. WOOL ALCOHOLS (LANOLIN)

Concentration: 1.00 mg/cm²

Vehicle: Polyvidone

Allergen patch components: Cholesterol, lanosterol, agnosterol (and dihydro derivatives); straight- and branched-chain aliphatic alcohols; 0.81 mg total (the active allergenic component has not been identified)

Synonyms or components:

Wool alcohols (or lanolin):

- Fats and glyceridic oils, wool
- Wool grease, fat or fatty acid
- Degras
- Wool wax or wool wax, lanolin
- Anhydrous lanolin
- Fats, lanolin
- Adeps Lanae

Chemical Identification: CAS Registry Nos. 8006-54-0, 8020-84-6;
EINECS 232-348-6, 232-418-6;
EPA Pesticide Chemical Code 031601

Potential Allergen Sources:

- Personal care products such as cosmetics and cleansers;
- Pet care products;
- Metalworking fluids.



Personal Care Products

3. NEOMYCIN SULFATE

Concentration: 0.23 mg/cm²

Vehicle: Methylcellulose

Allergen patch components: Neomycin sulfate, USP, 0.19 mg

Synonyms and components:

Neomycin sulfate:

- Neomycin B sulfate

Chemical Identification: CAS Registry Nos. 1405-10-3;
EINECS 215-773-1;
EPA Pesticide Chemical Code 006313

Other substances to which the patient may react:

- Topical antibiotics: gentamicin, bacitracin, framycetin,
- Injectable antibiotics: kanamycin, mycifradin, sisomycin, paromomycin, streptomycin, butirosin, spectinomycin, fradiomycin.

Potential Allergen Sources:

- Topical antibiotics, with or without anti-inflammatories or anti-pruritics.



Drugs and medicines

4. POTASSIUM DICHROMATE (CHROMIUM)

Concentration: 0.023 mg/cm²

Vehicle: Hydroxypropyl cellulose

Allergen patch components: Chromium, 0.0067 mg

Synonyms and/or components:

Potassium dichromate:

- Chromium compounds
- Chromium metal or chrome
- Dipotassium dichromate (or bichromate)
- Chromium and chromium salts
- Chromic acid salts

Chemical Identification: *Potassium dichromate* - CAS Registry Nos. RN: 7778-50-9;
EINECS 231-906-6; EPA Pesticide Chemical Code 068302
Chromium - CAS Registry Nos. 7440-47-3;
EINECS 231-157-5

Potential Allergen Sources:

- Industrial, construction and home repair products such as cement, concrete; wood preservatives;
- Leather and hide glues;
- Metal working, welding and plating with chrome alloys; cutting oils, corrosion inhibitors, drilling muds;
- Green dyes and metallic pigments; inks and paints;
- Chromic surgical gut sutures, orthopedic and dental implants or prosthesis.



Industry & Manufacturing

5. CAINE MIX

Concentration: 0.63 mg/cm²

Vehicle: Polyvidone

Allergen patch components: Benzocaine, USP, 0.364 mg;
Tetracaine HCl, USP, 0.063 mg;
Dibucaine HCl, USP, 0.064 mg

Synonyms and/or components:

Benzocaine:

- 4-Carbethoxyaniline
- Benzoic acid, 4-amino-, ethyl ester
- Ethyl 4-aminobenzoate
- 4-(Ethoxycarbonyl)aniline
- Ethyl PABA

Tetracaine:

- *p*-Butylaminobenzoyl-2-dimethylaminoethanol
- Dimethylaminoethyl *p*-butyl-aminobenzoate
- Benzoic acid, 4-(butylamino)-, 2-(dimethylamino)ethyl ester

Dibucaine:

- alpha-Butyloxycinchonic acid diethylethylenediamide
- 2-Butoxy-N-(2-(diethylamino)ethyl)-cinchoninamide
- 2-Butoxyquinoline-4-carboxylic acid diethylaminoethylamide
- Cinchocaine

Chemical Identification: *Benzocaine* - CAS Registry Nos. 94-09-7;
EINECS 202-303-5; EPA Pesticide Chemical Code 097001

Dibucaine - CAS Registry Nos. 85-79-0;
EINECS 201-632-1

Tetracaine - CAS Registry Nos. 94-24-6;
EINECS 202-316-6

Potential Allergen Sources:

- Topical anesthetics (over-the-counter and prescription);
- Topical antiseptic preparations (over-the-counter and prescription).



6. FRAGRANCE MIX

Concentration: 0.43 mg/cm²

Vehicle: Hydroxypropyl cellulose, b-cyclodextrin

Allergen patch components: Geraniol, 0.070 mg;
Cinnamaldehyde, 0.034 mg;
Hydroxycitronellal, 0.054 mg;
Cinnamyl alcohol, 0.054 mg;
Eugenol, 0.034 mg;
Isoeugenol, 0.015 mg;
 α -Amylcinnamaldehyde, 0.015 mg;
Oak moss, 0.070 mg

Synonyms and/or components:*Geraniol:*

- Geraniol alcohol

Cinnamaldehyde:

- Cinnamal
- Cassia aldehyde

Hydroxycitronellal:

- Citronellal hydrate
- Lilyl aldehyde

Cinnamyl alcohol:

- Cinnamic alcohol

Eugenol:

- Allylguaiacol
- 2-Methoxy-4-allylphenol

Isoeugenol:

- 4-Propenylguaiacol

 α -Amylcinnamaldehyde:

- Amyl cinnamal
- Jasmine aldehyde
- α -Amyl- β -phenylacrolein

- Geranyl alcohol
- trans-3,7-Dimethyl-2,6-octadien-1-ol
- Cinnamic aldehyde
- 3-Phenyl-2-propenal
- 3-Phenylacrolein
- 7-Hydroxy-3,7-dimethyloctanol
- Oxydihydrocitronellal
- Muguet synthetic
- 3-Phenyl-2-propenol
- 3-Phenylallyl alcohol
- 2-Methoxy-4-(2-propenyl)phenol
- 4-Hydroxy-3-methoxyallylbenzene
- 4-Allylcatechol 2-methyl ether
- 2-Methoxy-4-(1-propenyl)phenol
- 4-Hydroxy-3-methoxypropenylbenzene
- 2-Pentylcinnamaldehyde
- 2-Benzylideneheptanal
- 2-(Phenylmethylene)heptanal

Chemical Identification:

Geraniol - CAS Registry # 106-24-1; EINECS 203-377-1;
EPA Pesticide Chemical Code 597501

Cinnamaldehyde - CAS Registry # 104-55-2, EINECS 203-213-9;
EPA Pesticide Chemical Code 040506

Hydroxycitronellal - CAS Registry # 107-75-5; EINECS 203-518-7

Cinnamyl alcohol - CAS Registry # 104-54-1; EINECS 203-212-3

Eugenol - CAS Registry # 97-53-0; EINECS 202-589-1;
EPA Pesticide Chemical Code 102701

Isoeugenol - CAS Registry # 97-54-1; EINECS 202-590-7

α -Amylcinnamaldehyde - CAS Registry # 122-40-7;
EINECS 204-541-5 and 215-565-0

Other substances to which the patient may react:

- Colophony
- Citral
- Propolis balsam
- Lyral
- Farnesol
- Balsam of Peru and its components (cinnamic acid, methyl cinnamate, cinnamein, vanillin, and cinnamyl cinnamate)

Potential Allergen Sources:

- Perfumes and colognes; cosmetics; personal care, hygiene, oral hygiene and hair care products;
- Over-the-counter and prescription medicines;
- Pet care products; insecticides and pesticides;
- Household cleaners, air fresheners and deodorizers; paper products;
- Some foods and flavorings; botanical (herbal) products;
- Metal working fluids and industrial cleaners, deodorizers and masking fragrances;
- Candles, incense and essential oils.



Personal Care Products

7. COLOPHONY

Concentration: 1.20 mg/cm²

Vehicle: Polyvidone

Allergen patch components: Colophony, 0.97 mg

Synonyms and/or components:

Colophony:

- Abietic acid
- Colophonium
- Tall oil
- Wood or pine rosin
- Disproportionated rosin
- Rosin, gum rosin, or rosin gum
- Abietic alcohol, abietyl alcohol, or methyl abietate alcohol

Chemical Identification: CAS Registry Nos. 8050-09-7, EINECS 232-475-7, EPA Pesticide Chemical Code 067205

Other substances to which the patient may react:

- Wood tars
- Fragrances, essential oils and some spices
- Rosin esters

Potential Allergen Sources:

- Wood products, sawdust, wood fillers; glues and adhesives;
- Coatings, polishes, and waxes; waxed thread;
- Industrial lubricants and cutting fluids; soldering products;
- Instrument rosin;
- Topical salves.



Industry & Manufacturing

8. PARABEN MIX

Concentration: 1.00 mg/cm²

Vehicle: Polyvidone

Allergen patch components: Methyl *p*-hydroxybenzoate, 0.162 mg;
Ethyl *p*-hydroxybenzoate, 0.162 mg;
Propyl *p*-hydroxybenzoate, 0.162 mg;
Butyl *p*-hydroxybenzoate, 0.162 mg;
Benzyl *p*-hydroxybenzoate, 0.162 mg;

Synonyms and/or components:

Methyl p-hydroxybenzoate:

- Benzoic acid, 4-hydroxy-, methyl ester
- 4-Hydroxybenzoic acid methyl ester

Ethyl p-hydroxybenzoate:

- Benzoic acid, 4-hydroxy-, ethyl ester
- 4-Hydroxybenzoic acid ethyl ester

Propyl p-hydroxybenzoate:

- Benzoic acid, 4-hydroxy-, propyl ester

Butyl p-hydroxybenzoate:

- Benzoic acid, 4-hydroxy-, butyl ester

Benzyl p-hydroxybenzoate:

- Phenylmethyl 4-hydroxybenzoate
- *p*-Hydroxybenzoic acid benzyl ester

- Methylparaben
- *p*-Methoxycarbonylphenol
- Methyl parahydroxybenzoate
- Ethylparaben
- *p*-Carbethoxyphenol
- Ethyl *p*-oxybenzoate
- Propylparaben
- 4-Hydroxybenzoic acid propyl ester
- Butylparaben
- 4-Hydroxybenzoic acid butyl ester
- Benzylparaben
- Benzoic acid, 4-hydroxy-, phenylmethyl ester

Chemical Identification:

Methyl p-hydroxybenzoate- CAS Registry Nos. 99-76-3, EINECS 202-785-7, EPA Pesticide Chemical Code 061201

Ethyl p-hydroxybenzoate- CAS Registry Nos. 120-47-8, EINECS 204-399-4, EPA Pesticide Chemical Code 061202

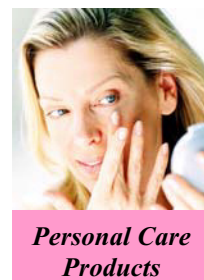
Propyl p-hydroxybenzoate- CAS Registry Nos. 94-13-3, EINECS 202-307-7, EPA Pesticide Chemical Code 061203

Butyl p-hydroxybenzoate- CAS Registry Nos. 94-26-8, EINECS 202-318-7, EPA Pesticide Chemical Code 061205

Benzyl p-hydroxybenzoate- CAS Registry Nos. 94-18-8, EINECS 202-311-9

Potential Allergen Sources:

- Products for personal care, hygiene, oral hygiene and hair care;
- Most cosmetics;
- Pet care and grooming products;
- Analgesic medications for skin; and hemorrhoid preparations.



9. NEGATIVE CONTROL

The negative control is an uncoated polyester patch with no allergen or vehicle.

It is used to differentiate negative reactions and help interpret doubtful or minimal reactions to the allergen-containing patches.

10. BALSAM OF PERU

Concentration: 0.80 mg/cm²

Vehicle: Polyvidone

Allergen component per patch: Balsam of Peru, 0.65 mg total

Synonyms, components, or chemically related allergens:

Balsam of Peru:

- Peruvian balsam
- Balsam fir oleoresin or oil
- Cinnamein
- Myroxylon pereirae oleoresin
- Balsam Peru oil or extract
- Hyperabsolute balsam, Peru
- Balsam of Tolu

Balsam of Peru components:

- Cinnamic or cinnamylic acid; 3-phenyl-2-propenoic acid; 3-phenylacrylic acid
- Cinnamal or cinnamic aldehyde; cassia aldehyde; 3-phenyl-2-propenal
- Cinnamic or cinnamyl alcohol; 3-phenyl-2-propenol; 3-phenylallyl alcohol
- Methyl cinnamate or cinnamylate; cinnamic acid methyl ester; methyl 3-phenylpropenoate
- Benzyl cinnamate or cinnamein; cinnamic acid benzyl ester; phenylmethyl 3-phenyl-2-propenoate
- Vanillin or vanillic aldehyde; vanillaldehyde; 4-hydroxy-3-methoxybenzaldehyde; 2-methoxy-4-formylphenol
- Eugenol or allylguaiacol; 2-methoxy-4-(2-propenyl)phenol; 2-methoxy-4-allylphenol
- Cinnamyl cinnamate or styracin; 3-phenylallyl cinnamate; 3-phenyl-2-propenyl 3-phenyl-2-propenoate

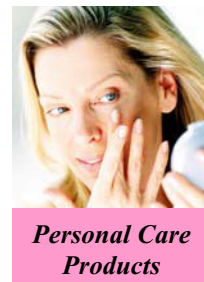
Chemical Identification: Peruvian balsam CAS Registry Nos. 8007-00-9, EINECS 232-352-8

Other substances to which the patient may react:

- Fragrance mix components - eugenol, isoeugenol, cinnamaldehydes, cinnamyl alcohol
- Gum benzoin
- Colophony
- Propolis balsam

Potential Allergen Sources:

- Perfumes and colognes; cosmetics; personal care, hygiene, oral hygiene and hair care products;
- Over-the-counter and prescription medicines;
- Pet care products; pesticides;
- Household cleaners, air fresheners and deodorizers; paper products;
- Some foods and flavorings; botanical (herbal) products;
- Metal working fluids and industrial cleaners, deodorizers and masking fragrances;
- Candles, incense and essential oils.



11. ETHYLENEDIAMINE DIHYDROCHLORIDE

Concentration: 0.050 mg/cm²

Vehicle: Methylcellulose

Allergen patch components: Ethylenediamine, 0.018 mg

Synonyms and/or components:

Ethylenediamine dihydrochloride

- Chlor-ethamine
- Ethylenediammonium chloride
- Ethylenediamine (EDA)
- Dimethylenediamine dihydrochloride
- 1,2-Diaminoethane dihydrochloride

Chemical Identification: CAS Registry No. 333-18-6, EINECS 206-369-6

Other substances to which the patient may react:

- Diethylenetriamine (DETA)
- Triethylenetetramine (TETA)
- Disalicylalpropylenediimine
- Epoxy amines
- Rarely, orally administered piperazine-related antihistamines

Potential Allergen Sources:

- Used in the industrial manufacturing of chelating agents, corrosion inhibitors, fuel additives, epoxy curing agents, pharmaceuticals, carbamate-based chemicals, bleach activators, retention and processing aids, plastic lubricants, urethane foam catalysts, printing ink binders, and textile dye-assist compounds.



Industry & Manufacturing

12. COBALT DICHLORIDE

Concentration: 0.020 mg/cm²

Vehicle: Hydroxypropyl cellulose

Allergen patch components: Cobalt, 0.0040 mg

Synonyms and/or components:

Cobalt dichloride or cobalt: • Cobalt metal, metal powder, dust or fume

Chemical Identification: CAS Registry No. 7440-48-4, EINECS 231-158-0

Other substances to which the patient may react (based on cosensitization):

- Nickel
- Chromate

Potential Allergen Sources:

- Cement and bricks;
- Cobalt and cobalt alloys; cobalt catalysts; cobalt fumes, powders and pigments;
- Metalworking fluids and oils;
- Metal tools, jewelry and utensils (as with nickel);
- Paints, inks, glazes and finishes.



Industry & Manufacturing

13. P-TERT-BUTYLPHENOL FORMALDEHYDE RESIN

Concentration: 0.045 mg/cm²

Vehicle: Hydroxypropyl cellulose

Allergen patch components: *p-tert*-Butylphenol formaldehyde resin, 0.036 mg