

## Occupational Asthma - Agents by occupation

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### **Adhesive**

Methyl methacrylate & cyanoacrylates

### **Aerospace plant**

Lipophilic resin

### **Agricultural**

Plasmopara viticola

### **Agricultural producer**

Metabisulfite

### **Agricultural worker**

Cow dander

Melon

### **Agriculture**

Agaricus bisporus (White mushroom)

### **Agronomist**

Bruchus lentis

### **Aircraft filter**

Triethylene tetramine

### **Anesthesiology staff**

Sevoflurane + isoflurane

### **Angler**

Green bottle fly larvae (Lucilla caesar)

### **Animal behaviourist**

African penguin

### **Animal fodder**

Marigold flour (Tagetes erecta)

### **Apple grower**

Fruit tree red spider mite (Panonychus ulmi)

### **Aquarist, fish-food**

Chironomids midge (Chironomus thummi)

### **Assembly line**

Palladium tetraamine dichloride

### **Autobody shop**

Ethoxylated-2-bisphenol-A-diacrylate

### **Automobile plant**

(?) Metal working fluid

### **Bag manufacturer**

Polypropylene

### **Baker**

Alternaria

Baker's yeast (Saccharomyces cerevisiae)

Buckwheat flour

Fungal amylase

Fungal amyloglucosidase and hemicellulase

Gluten

Sesame seed

Soybean lecithin

Wheat, rye and soya flour

### **Bakery and dairy**

Lactalbumin

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### **Beautician**

Minoxidil [38304-91-5]

### **Beauty culture**

Monoethanolamine

### **Beet sugar worker**

Aspergillus (unspecified)

### **Bottling**

Ground bug

### **Bow making**

Fernambouc (*Caesalpinia echinata*)

### **Brewery chemist**

Hops

### **Brusk-makers**

Tampico fiber in agave leaves

### **Butcher**

Aromatic herb

Cow bone dust

Pig

### **Butcher, veterinarian**

Goat dander

### **Cabinet maker**

Kotibe wood (*Nesogordonia papaverifera*)

### **Cabinet worker**

African cherry (*Makore*)

### **Cake processor**

Lima bean (*Phaseolus lunatus*)

### **Canning factory**

Octopus

### **Carpenter**

Angelim pedra (*Hymenolobium petraeum*)

Cedrorana (*Cedrelinga catenaeformis* Ducke)

Chengal (*Neobalanocarpus hemeii*)

Ebony wood (*Diospyros crassiflora*)

Iroko (*Chlorophora excelsa*)

Sapele wood dust

### **Carpenter (work close to a granary)**

*Liposcelis decolor*

### **Carpentry**

Western red cedar (*Thuja plicata*)

### **Carpet manufacturing**

Guar

### **Cement floorer**

Chromate

### **Cereal manufacture**

Thiamine

### **Cheese maker**

Chymosine

### **Cheese producer**

Various enzymes in rennet production (proteases, pepsine, chymosines)

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### **Cheese production process**

Goat cheese (goat whey)

### **Chemical factory**

Aliphatic polyamine

### **Chemical factory worker**

3-(Bromomethyl)-2-chloro-4-(methylsulfonyl)- benzoic acid (BCMBA)

### **Chemical manufacturing**

Captafol

Chloramine T

N-Methylmorpholine

TDI, MDI

### **Chemical packaging plant**

Organic phosphate insecticides

### **Chemical plant**

Isothiazolinone (unspecified)

### **Chemical worker**

1,2-Benzisothiazolin-3-one

Hexahydrophthalic anhydride (HHPA)

Lasamide (precursor of furosemide)

### **Chemist**

Linseed oilcake

Piperazine hydrochloride

### **Chemist' spouse**

Voacanga Africana seed dust

### **Chicken breeder**

Herring worm (Anisakis simplex)

### **Christmas candy maker**

Pectin

### **Citrus farmer**

Citrus red mite (Panonychus citri)

### **Cleaner**

Glucosamine hydrochloride [66-84-2]

### **Cleaners and health care professionals**

Ethylene diamine tetraacetic acid (EDTA) sodium salts

### **Cleaning product**

Benzalkonium chloride

### **Coal miner**

Rhizopus nigricans

### **Construction, carpentry**

African Maple (Triplachiton scleroxylon)

### **Cook**

Carrot (Daucus carota L.)

Green bean (Phaseolus multiflorus)

Raw beef

### **Cosmetic factory**

Argan (Argania spinosa)

Dusts from seeds of Sacha Inchi (Plukenetia volubis)

### **Cosmetician**

Chamomile (unspecified)

## Occupational Asthma - Agents by occupation

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### **Culture of roses**

Rose

### **Curing agent**

Methyl tetrahydrophthalic anhydride (MTHPA)

### **Dairy industry**

Lactoserum

### **Decorator**

Cacoon seed (*Entage gigas*)

### **Deep-sea fisherman**

Cuttle-fish

### **Delicatessen plant**

*Monascus ruber*

### **Dental hygienist**

Gutta-percha

### **Dentist**

Tooth enamel dust

### **Detergent industry**

*Bacillus subtilis*

Esperase

### **Detonator manufacturer**

Tetrazene

### **Dietetic product**

Shark cartilage

### **Door manufacturer**

Antiaris

### **Dye manufacture**

Carmines

### **Dyer**

Lanasol Yellow 4G

### **Egg producer**

Egg protein

### **Electrical plant**

MTHPA + HHPA

### **Electronic assembler**

95% Alkylaryl polyether alcohol +5% polypro-pylene glycol

### **Electronic worker**

Colophony

### **Electroplating**

Rhodium

### **Endoscopy unit**

Ortho-Phthalaldehyde

Peracetic acid-hydrogen peroxide mixture

### **Engineer at electric power plant**

Caddis flies (*Phryganeidae*)

### **Entomologist**

Lesser mealworm (*Alphitobius diaperinus* Panzer)

Moth, butterfly

### **Epoxy adhesive**

Pyromellitic dianhydride

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### **Epoxy floor coater**

Isophorone diamine (IPDA)

### **Epoxy resin**

Bisphenol A diglycidyl ether (BADGE)

### **Epoxy resins, plastics**

Tetrachlorophthalic anhydride

Trimellitic anhydride

### **Extermination**

Tetramethrin

### **Factory**

Plexiglass

### **Factory worker**

Peach

### **Farmer**

Barn mite

Deer dander

Grain mite

Grain pests (Eurygaster and Pyrale)

Mink urine

Tetrachloroisophthalonitrile

Triticale (Tricosecale Wittmack) (hybrid cereal of rye and wheat)

Two spotted spider mite (Tetranychus urticae)

Vetch (Vicia sativa)

### **Feed store**

Corn flour

### **Fish bait breeder**

Insect larvae (Galleria mellonella)

### **Fish bait handler**

Mealworm larvae (Tenibrio molitor)

### **Fish farm**

Turbot

### **Fish food-store**

Daphnia

### **Fisherman**

Red soft coral

### **Fisherman and worker in a seafood processing plant**

Sea anemone (Actinia equina)

### **Fishfood factory**

Gammarus shrimp

### **Fish-food handler**

Fish-feed Echinodorus larva (Echinodorus plasmosus)

### **Fishing industry**

Sodium bisulfite

### **Fishmonger shop**

Lobster and shrimp

### **Fish-processor**

Various fishes

### **Flight crew**

Screw worm fly (Cochliomyia homnivorax)

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### **Floor covering material, salesman**

Mixture of trimethyl-hexanediamine and isophorondiamine

### **Floor varnisher**

Prepolymers of TDI

### **Floral shop worker**

Easter lily (*Lilium longiflorum*)

### **Floral worker**

Decorative flower

Safflower (*Carthamus tinctorius*) and yarrow (*Achillea millefolium*)

Spathe flower

Statice (*Limonium tartaricum*)

### **Florist**

Baby's breath (*Gypsophila paniculata*)

Cyclamen

Ivy (*Hedera helix*)

### **Flour handler**

Konjac flour

Mites and parasites

White pea flour (*Lathyrus sativus*)

### **Flower industry**

Flower (various)

### **Food industry**

Aniseed

FD&C blue dye #2

Fenugreek

### **Food packaging**

Garlic dust

### **Food processing**

White Lupin flour (*Lupinus albus*)

### **Food processor**

Asparagus

Clam and shrimp

Coffee bean

Sodium metabisulfite

### **Foundry**

Diphenylmethane diisocyanate

### **Foundry mold making**

Furfuryl alcohol (furan based resin)

### **Foundry worker**

Aluminium chloride

### **Frog catcher**

Frog

### **Fruit grower**

Peach leaf

### **Fruit processor**

Pectinase and glucanase

### **Fruit warehouse**

Courgette

### **Fur dyeing**

Paraphenylene diamine

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### **Furniture**

Blackwood (Acacia Melanoxylon)  
Brazilian walnut (Imbuia)  
Common ash (Fraxinus excelsior)

### **Furniture factory**

Abiruana (Pouteria)  
Mukali (Angineria robusta)

### **Gardener**

Canari island date palm (Phoenix canariensis)  
Copperleaf (Acalypha wikesiana)  
Grass juice

### **Glove manufacturer**

Latex

### **Grain elevator**

Grain dust

### **Greenhouse worker**

Amaryllis (Hippeastrum sp)  
Bell pepper  
Chrysanthemum  
Eggplant (Solanum melongena)  
Madagascar jasmine sap (Stephanotis floribunda)  
Sweetpea (Lathyrus odoratus)

### **Greenhouse workers**

Various insects used in biological pest control

### **Grower**

Bell of Ireland (Molucella laevis)

### **Gum importer**

Tragacanth

### **Hairdresser**

Henna (unspecified)  
Karaya  
Sericin

### **Hairdressers**

Hydrolyzed wheat protein

### **Hairdressing**

Eugenol  
Persulfate salts (ammonium, potassium, sodium)  
Yellow and red henna

### **Hard metal grinder**

Cobalt

### **Hard metal plant**

Cobalt & Nickel

### **Hardener in paints**

Polyfunctional aziridine

### **Herbal manufacture**

Wonji (Polygala tenuifolia)

### **Herbal merchant**

Sanyak (Dioscorea batatas) and Korean ginseng (Panax ginseng)

### **Herbal shop sales**

Black henna (Indigofera argentea)

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### **Herbal tea processor**

Herbal tea

### **Herbal tea worker**

Sarsaparilla root

### **Herbal worker**

Herb material

### **Herbalist**

Liquorice roots (*Glycyrrhiza* spp)

### **Herbicide production**

3-amino-5-mercapto-1,2,4-triazole

### **Homemakers**

Onion

### **Honey processors**

Honeybee

### **Horticulture**

Freesia (*Freesia hybride*) and paprika (*Capricum anuum*)

### **Horticulturist**

*Amblyseius cucumeris*

### **Hospital endoscopy unit**

Glutaraldehyde

### **Hospital personnel**

Empynase (pronase B)

### **Hospital pharmacy**

Isonicotinic acid hydrazide

### **Hospital staff**

Enflurane

Formaldehyde

Methyl blue

Radiographic fixative

Sulfathiazole

Terpene

### **Hospital staff (sterilizing agent)**

Hexachlorophene

### **Housewife**

Potato

Swiss chard (*Beta vulgaris* L. *cycla*)

### **Ivory worker**

Ivory dust

### **Jam factory**

Carob bean

### **Jewellery polisher**

Cuttle fish bone

### **Jointer**

Cedar of Lebanon (*Cedra libani*)

### **Laboratory grinder**

Marine sponge

### **Laboratory nurse**

ECG ink



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### Laboratory technician

Bovine serum albumin  
Peptide coupling reagent (TBTU and HBTU)  
Sodium isononanoyl oxybenzene sulfonate

### Laboratory worker

Cricket  
Fruit fly  
Grasshopper  
Grasshopper (*Locusta migratoria*)  
Laboratory animal  
Locust  
Monkey dander  
Ninhydrin  
Sunflower (*Helianthus* spp)  
Xylanase

### Laborer

Sooty molds (*Ascomycetes*, *deuteromycetes*)

### Labourer

Citrus food handling (d,l-limonene, citronellol and dichloroprene)

### Lacquer handler

Hexamethylene tetramine

### Landscape gardener

Umbrella tree (*Schefflera*)

### Laxative manufacturer

Psyllium

### Lifeguard, Swimming teacher

Chloramine (unspecified)

### Logging worker

*Chrysonilia sitophila*

### Lumber Millworkwer

Oak (*Quercus robur*)

### Machine tool setter operator

4,4-methylene-bismor-pholine

### Machinist

Stellite (alloy containing ~60 % of cobalt, ~30 % of chromium, tungsten and carbon)

### Manufacture bottle caps

Polyvinyl chloride (powder)

### Manufacture of flame retardant

Himic anhydride

### Manufacture of photocopy paper

Diazonium salt

### Manufacture of wipers

Aluminium hydroxide

### Manufacture rubber

1,5-Naphthylene diisocyanate

### Meat wrapper

Polyvinyl chloride (fumes and powder)  
Polyvinyl chloride (fumes)

### Mechanic

Chlorendic anhydride

## Occupational Asthma - Agents by occupation

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### **Mechanic in a rye plant**

Confused flour beetle (*Tribolium confusum*)

### **Medicinal plant processor**

Brazil ginseng (*Pfaffia paniculata*)

### **Metal grinder**

Tungsten carbide

### **Metal jointing**

Zinc chloride & ammonium chloride flux

### **Metal plating**

Nickel sulfate

### **Metal worker**

Triethanolamine

### **Milling**

Quinoa seed flour

### **Mineral analysis laboratory**

(?)

### **Mould maker**

EPO 60

### **Museum curator**

Beetles (*Coleoptera*)

### **Mushroom farm**

Various

### **Mushroom producer**

*Pleurotus cornucopiae*

### **Mushroom soup processor**

Mushroom unspecified

### **Nacre buttons**

Nacre dust

### **Nurse**

Chlorhexidine  
Ethylene oxide  
Mitoxantrone

### **Nursery nurse**

Triclosan

### **Office worker, cook, hotel manager**

*Boletus edulis*

### **Oil industry**

Castor bean  
Olive oilcake

### **Olive farmers**

White mustard (*Sinapis alba*)

### **Operator in a dishwashing tablet factory**

Protease

### **Operator sanitary pad production**

Cellulose [9004-34-6]

### **Owner of greenhouse**

Sea lavender (*Limonium sinuatum*)

### **Oyster farm**

Hoya (Oyster Farm Prawn or Sea-Squirt)

## Occupational Asthma - Agents by occupation

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### **Packager of dried mushrooms**

Shiitake (*Lentinus edodes*)

### **Painter**

Polyester

### **Paper packer**

Polyethylene

### **Paper recycling**

Hydroxylamine

### **Parquet floor layer**

Cabreuva (*Myrocarpus fastigiatus* Fr. All.)

### **Pasta factory**

Spinach powder

### **Pattern maker (wood)**

Mahogany (unspecified)

### **Pharmaceutical**

5-aminosalicylic acid

7-aminocephalosporanic acid

Aescin

Amoxicillin

Bromelin

Ceftazidime

Cephalosporins

Cimetidine

Colistin

Flaviastase

Hydralazine

Ipecacuanha

Lactase

Methyl dopa

Opiate compounds

Pancreatin

Papain

Penicillamine

Penicillins & Ampicillin

Pepsin

Phenylglycine acid chloride hydrochloride

Piperacillin

Rose hip

Salbutamol intermediate

Serratial peptidase and lysozyme chloride

Spiramycin

Tetracycline

Thiamphenicol

Tylosin tartrate

Vancomycin

### **Pharmaceutical agent**

Egg lysosyme

### **Pharmacist**

Chlorella

Endocrine glands

Lauryl dimethyl benzyl ammonium chloride

Tafenoquine ( (R)-N3-(2,6-Dimethoxy-4-methyl-5-(3-trifluoromethyl)phenoxy)quinolin-8-yl)pentane-1,4

### **Pharmacist packaging pharmaceutical company**

Ranitidine (1,1-Ethenediamine, N-[2-[[[5-[(dimethylamino)methyl]-2-furanyl]methyl]thio]ethyl]-N'-meth

## Occupational Asthma - Agents by occupation

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### **Pickling**

Glacial acetic acid

### **Plant keeper**

Weeping fig (Ficus benjamina)

### **Plastic, pharmaceutical**

Trypsin

### **Plastics**

Phthalic anhydride

### **Plastics factory**

Styrene

### **Plastics, rubber**

Azobisformamide

### **Platinum refinery**

Platinum

### **Plywood factory worker**

Neurospora

### **Polyester resin production**

Maleic anhydride

### **Polyurethane**

Toluene diisocyanate

### **Popcorn makers**

Popcorn flavoring chemical

### **Pork producer**

Pig gut (vapour from soaking water)

### **Potroom**

(?) Aluminum

(?) Fluorine

### **Poultry feed mixer**

Amprolium hydrochloride

### **Poultry worker**

Chicken

Fowl mite

### **Powder**

Lycopodium powder

### **Power station attendant**

(?) Pulverized fuel ash

### **Prawn processor**

Prawn

### **Preparation of dye solution**

Levafix brilliant yellow E36

### **Printer**

Acacia

Chromium

### **Printing**

Triacrylate (unspecified)

### **Processing plan**

Shrimp shell powder

### **Processing plant**

Salmon

## Occupational Asthma - Agents by occupation

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### **Processing worker**

Helianthus annuus

### **Producer of flies**

Mediterranean fruit fly (*Ceratitis capitata*)

### **Production line (using a flux)**

Aluminium tetrafluorides ( Potassium aluminium tetrafluoride)

### **Production of cytotoxic drugs (Cisplatin)**

Tetrachloroplatinate

### **Production of PVC**

Diocetyl-phthalate

### **Reactive dyes manufacture**

Reactive dye

### **Refrigeration**

Freon (unspecified)

### **Research student**

Thale cress (*Arabidopsis thaliana*)

### **Resin**

Urea formaldehyde

### **Respiratory therapist**

(?)

### **Restaurant**

Cauliflower and cabbage

### **Restaurant seafood handler**

Scallop and shrimp

### **Restaurant worker**

Shrimpmeal (*Artemia salina*)

### **Rice mill worker**

Rice

### **Rose extraction**

Rose oil

### **Rubber tyre manufacturer**

Tall oil

### **Saffron processor**

Saffron (*Crocus sativus*)

### **Saponin factory**

Quillaja bark (*Quillaja saponaria*)

### **Sausage processing**

Feenel seed

*Penicillium nalgiovens*

### **Sawmill**

Eastern white cedar (*Thuja occidentalis*)

White ash (*Fraxinus americana*)

### **Sawmill worker**

Spruce wood (unspecified)

*Trichoderma koningii*

### **Sawmills of eastern Canada and USA**

Unidentified agent

### **Sawyer**

Ipe (*Tabebuia* spp)

## Occupational Asthma - Agents by occupation

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### **Scallop plant processor**

King scallop and queen scallop

### **Seafood production worker**

Squid (*Loligo vulgaris*)

### **Seed house**

Mexican bean weevil (*Zabrotes subfaciatus* Boh.)

### **Seed packing**

Onion seeds (*Allium cepa*, red onion)

### **Self employed (3D printing)**

Acrylonitrile-Butadiene Styrene filaments-(ABS)

### **Seller**

*Pleurotus ostreatus* (Spores of White spongy rot)

### **Sericulture**

Larva of silkworm

### **Sewage plant worker**

Sewer fly (*Psychoda alternata*)

### **Sewer**

Kapok

### **Shellac handler**

Ethylene diamine

### **Sheller**

Almond shell dust

### **Silk worker**

Silkworm

### **Ski manufacture**

3-(Dimethylamino)propylamine (3-DMAPA)

### **Snow-crab processor**

Crab

### **Solderer**

Adipic acid

Zinc fumes

### **Soldering**

Aluminum

Aminoethylethanolamine

### **Soyabean processors**

Soybean (*Glycine maxima*)

### **Spices processing**

Spice

### **Spray paint**

Dimethylethanolamine

### **Spray painter**

Isophorone diisocyanate

Prepolymers of HDI

Triglycidyl isocyanurate

### **Spray painters**

TDI, MDI, HDI, PPI

### **Store**

Cinnamon (*Cinnamomum Zeylanicum*)

## Occupational Asthma - Agents by occupation

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### **Stucco handler**

Esparto (*Stipa tenacissima* and *Lygeum spartum*)

### **Stucco worker**

Mucor species (contaminating esparto fibers)

### **Tanner**

Casein (cow's milk)

### **Tea processor**

Tea plant dust (*Camellia sinensis*)

### **Technician**

Arthropods (*Chrysoperla carnea*, *Leptinotarsa decemlineata*, *Ostrinia nubilalis* and *Epehestia kuehniella*)

*Aspergillus niger*

*Dictyostelium discoideum* (mold)

Nematode (*Steinernema feltiae*)

Phytase from *Aspergillus niger*

Sheep blowfly (*Lucilia cuprina*)

### **Technician (cosmetic factory)**

Miracle tree (*Moringa oleifera*) seed

### **Technician animal food**

Small shrimp *Gammarus*

### **Technician pharmacy**

Passion flower (*Passiflora alata*) & *Cascara sagrata* (*Rhamnus purshiana*)

### **Technicians in Pharmacy**

Royal jelly

### **Textile industry**

Cibachrome brilliant scarlet 32

Drimaren brilliant blue K-BL

Drimaren brilliant yellow K-3GL

### **Textile worker**

Synozol Red-K 3BS

### **Thalassotherapist**

Algae (specie unspecified)

### **Tobacco manufacturer**

Tobacco leaf

### **Toolsetter**

(?) Oil mist

### **Trout processor**

Trout (?)

### **Various**

Bat guano

### **Various industries**

TDI, MDI, HDI

### **Vegetable plant**

*Brassica oleracea* (cauliflower and broccoli)

### **Vegetable wholesaler**

Chicory

### **Venipuncture technician**

Tributyl tin oxide

### **Vine grower**

McDaniel spider mite (*Tetranychus macdanieli*)

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### **Water plant**

Sulfites (unspecified)

### **Welder**

Chromium & Nickel  
Manganese

### **Welders**

Iron (unspecified)

### **Wine cellar**

Lallzyme EX-V (from *Aspergillus niger*)

### **Wood furniture**

Falcata (*Albizia falcataria*)

### **Woodcarver**

California redwood (*Sequoia sempervirens*)

### **Wood-machinist**

African zebrawood (*Microberlinia*)  
Kejaat (*Pterocarpus angolensis*)

### **Woodworker**

Cocabolla (*Dalbergia retusa*)  
Pau Marfim (*Balfourodendron riedelianum*)  
Ramin (*Gonystylus bancanus*)  
Tanganyika aningre

### **Wool worker**

Dermestidae spp

### **Worker pharmaceutical company**

Clarithromycin [81103-11-9]  
Ferrimanitol ovalbumin

### **Workers on factory ships**

Alaska pollock and Yellowfin sole

### **Zoo keepers**

Birds