

Photographic allergens: an update

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Key words: allergic contact dermatitis; patch testing technique; photographic chemicals; occupational; material safety data sheets. © Munksgaard, 1997.

277 material safety data sheets (MSDS) were obtained from Eastman Kodak Company for all chemicals used in their black and white, color, X-ray and microfilm developing systems. 16 potential allergens were identified in these systems (Table 1). Of these, only the first 8 are in the current Chemotechnique photographic series. 8

other chemicals in the current series were not identified in these systems (CD2, hydroxylammonium chloride, ammonium persulfate, ethylenediamine, 1H-benzotriazole, 4-amino-N, N-diethylaniline sulfate (TSS), tricresyl phosphate, pyrogallol). An additional chemical, sodium dichromate, was recently replaced by potassium permanganate in Kodak developer system cleaner. Of the 16 identified sensitizers, 8 are not in this current photographic series. References are given in Table 1. It is clear that newer developing systems have introduced additional potential allergens to the photography industry.

Table 1. Allergens in Kodak photographic developing systems

Allergen	Developing systems in
(1) hydroquinone	black and white, X-ray, microfilm
(2) metol	black and white
(3) CD3	color
(4) CD4	color
(5) formaldehyde	color
(6) glutaraldehyde	X-ray
(7) phenindone	X-ray
(8) benzyl alcohol	color (C-22 only)
(9) HMPP	black and white (XTOL only)
(10) dimezone	black and white (Technidol only)
(11) hydroxylamine sulfate	color
(12) 1-thioglycerol	color (E6 only)
(13) triethanolamine	color
(14) hexamethylenetetramine	color
(15) propylene glycol	color (Flexicolor only)
(16) Kathon® CG	color

Metol: 4 (methylamino) phenol sulfate.

phenindone: 1-phenyl-3-pyrazolidinone.

HMPP: 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone.

dimezone: 1-phenyl-4, 4-dimethyl-3-pyrazolidinone.

Kathon® CG: methylisothiazolinone and methylchloroisothiazolinone.

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Contact allergy to gold with pharyngeal and laryngeal disorders

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Key words: gold; contact allergy; larynx; pharynx; positive patch test; gold sodium thiosulfate. © Munksgaard, 1997.

Contact allergy to gold sodium thiosulfate (GST) has been reported in 4.6% of females with suspected contact dermatitis (1). The most frequent site of eczema was the head and neck (62%). GST has given high yields of positive reactions (up to 10%) in patch-tested eczema pa-

tients and seems to reflect true contact allergy (2). In both studies, a large number of tested patients were also allergic to nickel. GST allergy was over-represented in those having dental gold (3). GST may cause long-lasting allergic patch test reactions (4). Gingivitis caused by

gold in teeth, without eczema, has been reported (5). Pharyngeal and laryngeal disorders have not, to our knowledge, been reported in association with gold allergy.

Case Report

For 3 years, a 51-year-old diesel locomotive engineer had had pharyngeal and laryngeal disorders, mainly a hoarse voice and sore throat at the end and after workshifts. The throat has been dark red and swollen for months. No dermatitis was observed. He was assumed to be exposed to diesel exhaust, because symptoms were worse after workshifts. Certain other chemicals used in such locomotives were also suspected (monoethyleneglycols, ethanol, methylethylacetone and antirust agents). He got a new job as an electrical locomotive engineer, but his symptoms persisted.

Prick tests before the new job indicated allergy to cayenne pepper, celery, peas, kiwi fruit and dust mites. Patch tests were positive to Amerchol L-101, Kathon® and nickel. Gold was not tested. After 6 months and the change of job, further patch tests with dental chemicals indicated strong allergy to gold. The positive patch test persisted for 3 weeks. A biopsy showed perivascularitis and hyperkeratosis at the patch test site. After further patch testing, a mild gingivitis was observed.

The patient had had gold teeth for several years. After removal of gold, his symptoms soon disappeared and the

mucosa of the throat reverted to normal. He was followed up for 2 years after diagnosis. He reported occasional mild symptoms 2 years after removal of gold.

Comment

This patient was allergic to chemicals, foods and seasonings. Many chemicals from his work environment were also suspected. However, his symptoms disappeared after removal of gold from his teeth. The cause of laryngitis and pharyngitis appeared to be gold allergy.

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Occupational dermatitis due to formaldehyde in newspaper

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More than 600 products are used in paper manufacture: fillers, preservatives, whitening agents, etc. Contact dermatitis from paper is well-known to be related to colophony allergy (1). Other substances implicated include thiourea and its derivatives (2) and, rarely, formaldehyde (3). Formaldehyde is used to improve wet-strength water and grease resistance. Shiny, thick, more expensive paper is more likely to contain formaldehyde than thinner, more fragile paper.

Case Report

A 44-year-old woman had been working as a magazine-seller for 12 years. In the last 3 years, she had developed a moderate hand eczema with pruritic erythematous scaly papules on the fingertips. The dermatitis disappeared during vacations. In the last year, it had worsen-

ed, developing vesiculation and spreading to the sides of the fingers, thenar eminences and eyelids. The lesions rapidly improved away from work, while on treatment with topical corticosteroids.

Patch testing with the European standard series, supplemented with common contact allergens in the paper industry, showed a positive reaction only to formaldehyde 1% aq. (++ at D2, +++ at D4).

Comment

Formaldehyde is a widespread contact allergen (cosmetics, water-based paints, photographic products, paper, cleaning products, etc.). The main source of exposure is domestic (cleaning products) for women and occupational for men (4). Paper is rarely reported as a source of formaldehyde contact allergy (3,5).

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