

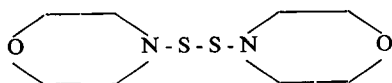
patch test reactions to rubber chemicals in the ICDRG standard series and to dichromate. The latter reactions could be referred to the use of protective leather gloves.

From the supplementary battery of patch tests we found eight positive reactions to the vulcanizing agent 4,4'-dithiodimorpholine. Five workers who were exposed daily to dithiodimorpholine had developed spreading dermatitis on the patch test site when read at 72 hours. Two of them had a +++ reaction to this chemical as their only positive patch test. The other three had ++ reactions and additional positive reactions to carba-mix or PPD-mix (Trolab). Three workers who were not in daily contact with dithiodimorpholine presented erythema and slight infiltration at the test site when read at 72 hours. Two of these also reacted to carba-mix or MBT-mix (Trolab).

We have later tested 110 patients with contact dermatitis with dithiodimorpholine. Six had strong positive patch test reactions and are listed below:

A further six patients had erythema at the patch test site when read at 72 hours. None of these patients had positive reactions to other rubber chemicals.

The 4,4'-dithiodimorpholine was applied in a 1 % concentration in yellow soft paraffin.



	4,4'-dithio- dimorpho- line	Positive reactions ICDRG series
Housewife	++	
Female assistant	++	cobalt ++ carba- mix ++ neomycin +++ TMTD-mix ++
Farmer	++	chromium +++
Charwoman	++	nickel +++
Housewife	++	formaldehyde ++ MBT-mix +++
Merchant	++	naphthyl-mix +++ colophony + wood tars ++ wool alcohols +++

The chemical is also known as Sulfasan R® and is produced by Monsanto Company, Ohio, U. S. A. It is a gray to tan powder used as a vulcanizing agent for natural and synthetic rubbers. Sulfasan R is not known to the Rubber and Plastic Research Association, Shrewsbury, Great Britain as a cause of dermatitis. It has been approved by the FDA as safe for use in rubber articles intended for repeated or continuous contact with food.

Allergy to balsam of Peru and wood tars: an increasing problem?

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The use of balsam of Peru and wood tars for medical purposes has decreased in recent years and is now insignificant (Hjorth 1961). However, balsams are often used as fixatives for perfumes in toilet soaps, detergents and cosmetics. Patients who are allergic to perfumes may show a cross-reaction to wood tars.

Positive patch test reactions to balsam of Peru and wood tars may therefore signify an allergy to perfumes and fixatives in soaps and cosmetics. Rothenborg & Hjorth (1968) found a coincident reaction between perfume and wood tars in 46 % of patients allergic to per-

fume, and between perfume and balsam of Peru in 23 % of the patients. Hannuksela et al. (1976) in a later investigation found that 10 % of their patients allergic to perfume also reacted to wood tars, while 43 % reacted to balsam of Peru. The difference between the two investigations may be due to the use of various perfumes, as these constitute a large and unhomogeneous group of chemicals. Nevertheless, both investigations show that balsam of Peru and wood tars are usable as screening tests for perfume allergy. Hjorth (1961) found positive reactions to bal-

sam of Peru in an average of 3.1 % of all tested patients during the years 1954-1959; the variation from year to year was only slight. Hannuksela et al. (1976) found 4.3 % positive reactions. In the period 1935-1965, Rothenborg & Hjorth (1968) found an almost constant occurrence of allergy to wood tars with an occurrence of positive reactions between 2-5 %. From the table it appears that in the period 1972-1976 there was a marked rise in the number of patients with positive patch test reactions to balsam of Peru and wood tars. Even by exclusion of weak reactions with only erythema at the patch test site, the increase is significant. We are of the opinion that this increase in positive reactions to balsam of Peru

and wood tars may indicate an increased frequency of allergy to perfumes in toilet soap and cosmetics in Denmark.

References

- Hannuksela, M., Kousa, M. & Pirilä, V. (1976) Allergy to ingredients of vehicles. *Contact Dermatitis* 2, 105-110.
 Hjorth, N. (1961) *Eczematous Allergy to Balsams*, p. 25. Copenhagen: Munksgaard.
 Rothenborg, H. W. & Hjorth, N. (1968) Allergy to perfumes from toilet soaps and detergents in patients with dermatitis. *Archives of Dermatology* 97, 417-421.

Table 1.

Period of investigation	April 1972- October 1972	October 1972- April 1973	April 1973- October 1973	October 1973- April 1974
Balsam of Peru				
+ + + + +	2.8 %	4.9 %	4.8 %	4.2 %
+ + + + +	1.1 %	2.5 %	2.8 %	2.5 %
Wood tars				
+ + + + +	1.4 %	2.5 %	7.9 %	8.1 %
+ + + + +	1.1 %	1.4 %	1.8 %	2.8 %
No. tested	286	286	290	283
Period of investigation	April 1974- October 1974	October 1974- April 1975	April 1975- October 1975	October 1975- April 1976
Balsam of Peru				
+ + + + +	5.6 %	8.9 %	10.3 %	11.1 %
+ + + + +	5.3 %	5.3 %	5.3 %	7.4 %
Wood tars				
+ + + + +	15.7 %	10.7 %	11.3 %	9.1 %
+ + + + +	5.6 %	4.6 %	6.3 %	5.3 %
No. tested	287	280	282	287

Colophony collar dermatitis

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A 25-year-old sales engineer developed an acute dermatitis on each side of his neck beneath his shirt collar. Over the previous 6

years he had suffered from a patchy dermatitis involving face, neck, limbs and hands, with onset following a finger injury. His hand der-

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