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## Occupational contact dermatitis caused by polyfunctional aziridine crosslinker: duct tubing for airconditioning

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### Case Report

An otherwise-healthy 39-year-old machine operator presented with erythematous papules and scaling of his antecubitals, neck and fingertips of 1-year duration. He had no history of atopy. The lesions had developed after his employer switched to an adhesive containing a polyfunctional aziridine crosslinker. He operated a machine that formed duct tubing for airconditioning. In spite of modest improvement with topical corticosteroids, his dermatitis recurred, leading to transfer to another position.

Patch testing was performed, with the Finn Chamber (Epitest, Helsinki) on the upper back for 2 days with readings at D2 and D4, to an extended routine series of the NACDRG, a machinists' tray and environmentalals brought in by the patient. All were negative.

The employer provided the aziridine crosslinker, which was tested at 1%, 0.5% and 0.1% pet.; the reading at D4 was + + +, utilizing the ICDRG grading system. 20 normal controls were negative. Trimethylolpropane triacrylate (0.5% pet.) was negative.

### Discussion

Polyfunctional aziridine (PFA) crosslinker is synthesized by reacting a multifunctional acrylate with an aziridine compound (propyleneimine or ethyleneimine). PFA is used to crosslink numerous products, including waterborne acrylic emulsions, paint primers, inks, lacquers, topcoats and other protective coatings, thus overcoming

the systemic toxicity problems from organic solvents (1). We were unaware of its use in fabrication of duct tubing. Several case reports of allergic contact sensitization are available (1–8). PFA crosslinker may also cause occupational asthma (2).

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