

Short Communication

Allergic contact dermatitis from cycloaliphatic epoxide in jet aviation hydraulic fluid

HOWARD I. MAIBACH¹ AND C. TOBY MATHIAS²

¹Department of Dermatology, University of California, San Francisco, CA 94143-0989, USA

²Department of Dermatology, Group Health Association, 2915 Clifton Avenue, Cincinnati, OH 45220, USA

Key words: allergic contact dermatitis; hydraulic fluid; cycloaliphatic epoxide; aviation mechanic; occupational; lack of cross-sensitivity; acid scavenger. © Munksgaard, 2001.

A highly effective male aviation mechanic had a 23-year history of widespread dermatitis, requiring several hospitalizations and chronic administration of prednisone. When first seen, he was hospitalized, rapidly clearing with symptomatic therapy.

Patch testing to the standard series was negative, but a strong positive reaction was obtained to a high-performance aviation hydraulic fluid (1% pet.). Components were negative except Bakelite cycloaliphatic epoxy

resin ERL 4234 [2-(3,4 epoxychlorhexyl-5,5 spiro-3,4-epoxy) cyclohexane – meta dioxane], to which he was positive at 0.1 and 0.01% pet. 20 controls were negative.

He returned to work and had remained asymptomatic when seen 3 years later. No similar cases of epoxy resin dermatitis from hydraulic fluid are known to us.

The patent literature suggests this application (e.g., USA 3,637,507). The function is the prevention of acid buildup.