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52 100

Percutaneous Penetration of [^{14}C]Formaldehyde (H^{14}CHO) in Rhesus Monkeys, and Disposition of H^{14}CHO after IV Dose in Monkeys and Fischer 344 Rats. A. R. Jeffcoat*, H. B. Marr*, B. M. Sadler*, D. Feldman*, R. Bogoroch*† (SPON: C. E. Cook) Research Triangle Institute, Res. Tri. Park, N.C. 27709 and Formaldehyde Institute (FI)†, Scarsdale, NY 10583.

Penetration of CH_2O through skin was studied because of its wide-spread environmental presence. In 5 male monkeys 24 hr after dermal application of 0.4-0.9 μg/cm^2 of H^{14}CHO, most had evaporated (52%) or was bound (33%) to the surface layers of skin at the application site. Percutaneous penetration of ^{14}C was very low. Based on 24 hr excretion of ^{14}C in breath following separate dermal and IV administration of H^{14}CHO, percutaneous penetration was 0.27% of dose; 0.46% of dose based on urinary excretion. Tissues and organs of a monkey necropsied 24 hr after dermal dosing contained <0.2% of dose. Breath was the primary route of excretion of ^{14}C following IV doses of H^{14}CHO to 4 monkeys (47% of dose excreted in 4 hr, 51% in 1 day, 55% in 5 days). Urinary excretion was 2.4% of dose in day 1, 4.2% in 10 days. After an IV dose of H^{14}CHO to rats, ca. 70% of dose was excreted in breath as $^{14}CO_2$, 9% in urine and 2% in feces in 10 days. Remainder of dose was quantitatively recovered from the carcasses. Sex or dose level did not effect amount or rate of excretion. [Supported by contract with American Textile Manufacturers Inst. and FI].