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MANUSCRIPT REVIEW BOARD INFORMATION SHEET

MANUSCRIPT TITLE: Cigarette Smoke Formation Studies VII. The Fate of (5-¹⁴C) Methoprene in Cigarette Smoke.

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ABSTRACT

An insect growth regulator, (5-¹⁴C) Methoprene (5-¹⁴C-isopropyl (2E-4E)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate), supplied by the Zoecon Corporation of Palo Alto, California, has been applied to tobacco filler from which cigarettes were made. The Kentucky Reference 1R1 cigarette was employed in this study to determine the distribution of the (5-¹⁴C) Methoprene and its combustion and pyrolytic products in cigarette smoke.

The distribution of smoke activity as determined using a total smoke recovery device showed 38.2 percent of the ¹⁴C-activity to be in mainstream smoke with 52.4 percent in sidestream delivery and 8.1 percent filtered by the tobacco butt (23 mm).

Detailed analysis of mainstream particulate matter and gas phase by gas radiochromatography showed the major portion of the ¹⁴C-activity found in mainstream smoke to be unchanged (5-¹⁴C) Methoprene (96.8 percent). Analysis of the mainstream gas phase (1.3 percent of total activity) for carbon-14 distribution showed that carbon monoxide and carbon dioxide accounted for 86 percent of the gas phase activity. The remaining 14 percent was distributed among ten additional gas phase components.

PATENT STATUS: ☐ Applied for ☐ Patented ☒ Not Filed

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