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THE EFFECT OF CIGARETTE CIRCUMFERENCE
ON AMES MUTAGENICITY

REPORT NO. RD.2044 RESTRICTED

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SUMMARY

Whilst the significance of the Ames test for mutagenicity is open to debate nevertheless it is widely used and consequently it may be suggested by Government and Regulatory authorities as the basis for a biological league table or index. It was therefore decided to examine a number of cigarettes of different circumferences to determine if this has an effect upon the activity of the condensate as defined by the Ames *Salmonella typhimurium* mutagenicity test.

A series of cigarettes with a range of circumferences from 13 to 29 mm was manufactured. The specific activity of condensate as measured in the Ames test for mutagenicity, was reduced by more than 50% when the circumference of the cigarettes was reduced from 29 to 13 mm. The activity per cigarette was reduced by 90% when comparing the largest and smallest circumference cigarette.

Data from these studies together with results from previous mouse skin painting experiments (tumorigenicity) show that as cigarette circumference is reduced the activity of smoke declines.

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KEY WORDS

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Ames Mutagenicity Test
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Circumference
Cigarette Design

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