

Group Research & Development Centre,
British-American Tobacco Co. Ltd.,
SOUTHAMPTON.

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ANALYSIS OF MAINSTREAM AND SIDESTREAM
VOLATILE NITROSAMINES BY GC-TEA

(Report No. RD.1809 Restricted)

SUMMARY

Nitrosamines in tobacco smoke have been and continue to be a topic of concern, especially since sidestream smoke is reported to contain considerably elevated levels relative to mainstream.

A method has been developed to determine volatile nitrosamines in mainstream smoke. Practical details of the method are described, together with an outline of sidestream volatiles method at the current stage of development.

The methods have been applied to a small group of cigarettes of different tobacco types, and the results support previous observations that volatile nitrosamines occur to greater extents in sidestream smoke than mainstream smoke. Differences in sidestream and mainstream deliveries due to variations in tobacco type are also confirmed. For plain cigarettes, it would appear that the ratio, sidestream:mainstream, is circa 10:1 for dimethyl nitrosamine and circa 5:1 for pyrrolidyl nitrosamine, varying a little with blend type.

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When the mainstream is filtered, selectively in the case of cellulose acetate, the sidestream:mainstream ratio is increased, and ratios of up to 50:1 can occur, in broad agreement with previous published data.

The priority of work in GR&DC will now shift to the further investigation of the reported build-up of nitrosamines in confined spaces after smoking. To obtain representative samples, a new apparatus is being built.

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