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FILE NOTE NO. 0342

CONSIDERATIONS ON THE USE OF EUGENOL

(a) Eugenol is a phenol and phenols, as a general class, are known to possess ciliastatic properties. If eugenol is added to a cigarette, its physical and chemical properties are such that it may be expected to transfer to the smoke almost quantitatively. Therefore, the ciliastatic properties of the smoke are liable to be enhanced. The ciliary inhibitory activity of eugenol is unknown and, therefore, the degree of enhancement cannot be predicted.

It would, therefore, be unjustifiable to use the material without further tests.

(b) If, as seems to be the case, eugenol is to be applied to a cigarette bearing a filter designed to remove phenols, the amount of eugenol to be delivered to the smoker may be expected to be considerably less than the amount applied. Nevertheless, it would be essential to determine, by gas chromatography, the amount of individual phenols delivered before any cigarettes should be sold to the public, in order to ensure that the amount present is not greatly increased.

Therefore, immediate sale prior to any chemical test is not justifiable.

(c) Provided that a "safe" level can be set for total phenols in smoke (determined individually) and that the cigarettes bearing eugenol do not exceed this level, it would seem reasonable to place them before the public. This is based on the assumption that eugenol is not very much more active as a ciliastatic agent than other phenols already present in smoke, and that indeed it may be less active. This assumption should then be investigated, as soon as is practicable, by a bio-assay using the cilia test.

If, on the other hand, the concept of a "safe" level cannot be accepted as a policy, then bio-assay, as well as chemical analysis of the smoke, must be carried out before any cigarettes are sold to the public.

[NOTE We stress throughout that phenols, including eugenol, in smoke should be determined by gas chromatographic methods because eugenol, and certain other phenols of similar structure, do not respond to colour reagents.]

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