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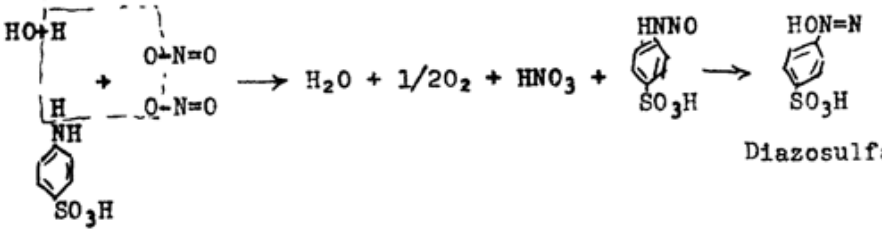
January 21, 1963

DETERMINATION OF NO_2 IN CIGARETTE SMOKE

The determination of NO_2 in the gaseous phase of cigarette smoke by a colorimetric procedure involves the production of pink diazosulfanilic acid. The postulated color reaction is as follows:



Diazosulfanilic acid.

Reagents:

1. Stock solution. 0.1 gm of N-(1-naphthyl)-ethylene diamine dihydrochloride in 100 ml of water.
2. Absorbing reagent. 5 gm of sulfanilic acid in almost 1 liter of H_2O containing 140 cc of glacial acetic acid. 20 ml stock solution added and diluted to 1 liter.
3. Standard solution. 0.0203 gm $NaNO_2$/liter. Equivalent of 10 ul/ of NO_2/1 ml.

Apparatus:

1. Smoking machine.
2. Smoke collection flask (55 ml).

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Calibration Curve

0.5 - 5.0 ml portions of the standard solution are added to absorbing solution in 25 ml volumetric flasks and the solutions are diluted to 25 ml. with absorbing solution.

Color is allowed to develop for 15-20 minutes with occasional shaking and the optical density of the solutions is determined at 550 mu against an absorbing solution blank.