

Tentative Method of Test for

AMMONIA IN PHENOL-FORMALDEHYDE MOLDED MATERIALS¹



A.S.T.M. Designation: D 834 - 45 T

ISSUED, 1945.²

This Tentative Method has been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

Scope

1. This method covers the determination of ammonia in phenol-formaldehyde molded parts and molding powders.

Apparatus

2. (a) *Nessler Tubes*.—Nessler tubes of 50-ml. capacity (either tall- or short-form).

(b) *Nesslerimeter*.

(c) *Balance*.—A balance sensitive to at least 0.01 g.

(d) *Pipettes*.—Pipettes of suitable capacities, including 100, 10, and 2 ml.

(e) *Flask*.—A 250-ml. glass-stoppered flask.

(f) *Distillation Flask*.—A 100-ml. Claissen-type distillation flask.

(g) *Condenser*.

(h) *Crucible*.—A sintered-glass crucible of medium porosity (conveniently of 30-ml. capacity), or equivalent.

(i) *Bunsen Burner*.

(j) *Porous Plate*.—Chips of porous plate.

Reagents

3. (a) *Ammonia-Free Distilled Water*.—Boil distilled water in a glass vessel for 2 min., and cool.

(b) *Potassium Permanganate, c.p.*—Either solid KMnO_4 or a saturated aqueous solution.

(c) *Sodium Hydroxide Solution (20 g. per l.)*.—Dissolve 20 g. of NaOH in ammonia-free distilled water and dilute to 1 liter.

(d) *Nessler's Reagent*.—Dissolve 50 g. of KI in the smallest amount of cold distilled water. Add saturated HgCl_2 solution until an excess is indicated by the first slight formation of a permanent precipitate. Add 400 ml. of KOH (550 g. per l.), at which time a heavy white precipitate will form. Add more saturated HgCl_2 solution until a pale yellow color develops. Dilute to about 1 liter with distilled water and allow to settle. Draw off the clear supernatant liquid for use as Nessler's reagent. The Nessler's reagent should give a distinct coloration with 500 ml. of water containing 0.005 mg. of NH_3 . If this is not obtained, the reagent can be made more sensitive by the addition of more HgCl_2 .

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the A.S.T.M. Committee D-20 on Plastics.

² Accepted by Committee E-10 on Standards, June 27, 1945.