

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1159

PLASTICS

DETERMINATION OF VINYL ACETATE
IN VINYL CHLORIDE-VINYL ACETATE COPOLYMERS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1159, *Plastics – Determination of vinyl acetate in vinyl chloride-vinyl acetate copolymers*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led to the adoption of a Draft ISO Recommendation.

In April 1965, this Draft ISO Recommendation (No. 827) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Argentina	Germany	Romania
Australia	Greece	Sweden
Austria	Hungary	Switzerland
Belgium	India	Turkey
Brazil	Ireland	U.A.R.
Canada	Italy	United Kingdom
Chile	Japan	U.S.A.
Czechoslovakia	Netherlands	U.S.S.R.
Finland	New Zealand	Yugoslavia
France	Poland	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1970, to accept it as an ISO RECOMMENDATION.

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DETERMINATION OF VINYL ACETATE
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1. SCOPE

This ISO Recommendation describes a method for determining the percentage of vinyl acetate in vinyl chloride-vinyl acetate copolymers.

2. PRINCIPLE

Dissolution of the sample in purified tetrahydrofuran, and hydrolysis of the acetate groups by potassium hydroxide in alcoholic solution.

Back titration of excess potassium hydroxide with sulphuric acid, using thymol blue as indicator.

Argentometric titration of hydrogen chloride liberated during hydrolysis.

3. REAGENTS

3.1 *Potassium hydroxide*, alcoholic solution approximately 0.5 N.

Dissolve 33 g of solid potassium hydroxide (KOH) in 500 ml of ethanol. Make up to 1000 ml, allow to stand overnight and decant the clear portion of the solution.

3.2 *Potassium hydroxide*, alcoholic solution approximately 0.2 N.

Prepare the solution in the same way as in clause 3.1, but using only 13.5 g of solid potassium hydroxide.

3.3 *Sulphuric acid*, 0.1 N standard volumetric solution.

3.4 *Sulphuric acid*, 0.05 N standard volumetric solution.

3.5 *Silver nitrate*, 0.1 N standard volumetric solution.

3.6 *Silver nitrate*, 0.05 N standard volumetric solution.

3.7 *Pure tetrahydrofuran*, further purified as in clause 7.2.

3.8 *Ethanol-water mixture* (1 : 1 by volume), neutralized to thymol blue, prepared from freshly boiled distilled water.

3.9 *Thymol blue* indicator solution. Dissolve 0.1 g of thymol blue in 100 ml of ethanol.

3.10 *Potassium hydroxide*, solid pellets.

3.11 *Potassium chromate*, 50 g/l solution.