

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 2052

POTASSIUM CHLORIDE FOR INDUSTRIAL USE
DETERMINATION OF POTASSIUM CONTENT
SODIUM TETRAPHENYLBORATE VOLUMETRIC METHOD

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 2052, *Potassium chloride for industrial use - Determination of potassium content - Sodium tetraphenylborate volumetric method*, was drawn up by Technical Committee ISO/TC 47, *Chemistry*, the Secretariat of which is held by the Ente Nazionale Italiano di Unificazione (UNI).

Work on this question led to the adoption of Draft ISO Recommendation No. 2052, which was circulated to all the ISO Member Bodies for enquiry in July 1970.

The Draft was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Iran	Spain
Belgium	Israel	Switzerland
Chile	Italy	Thailand
Czechoslovakia	Korea, Rep. of	U.A.R.
France	Netherlands	United Kingdom
Germany	New Zealand	U.S.A.
Greece	Poland	U.S.S.R.
Hungary	Portugal	
India	South Africa, Rep. of	

No Member Body opposed the approval of the Draft.

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

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DETERMINATION OF POTASSIUM CONTENT
SODIUM TETRAPHENYLBORATE VOLUMETRIC METHOD

1. SCOPE

This ISO Recommendation describes a volumetric method for the determination of potassium in potassium chloride for industrial use.

2. FIELD OF APPLICATION

The method described is applicable to the determination of potassium content in potassium chloride for industrial use, i.e. in a product containing a minimum of about 95 % KCl. This limit, expressed conventionally as K or K₂O, corresponds to approximately 50 % or 60 %, respectively.

3. PRINCIPLE

Dissolution of a test portion taken from the previously ground and sifted laboratory sample and elimination of ammonium ions if present.

Precipitation of the potassium in a slightly acid medium by an excess of a standard volumetric sodium tetraphenylborate solution.

Filtration and back titration of this excess in the filtrate, with a standard volumetric solution of a quaternary ammonium salt, using bromophenol blue as indicator.

4. REAGENTS

Distilled water or water of equivalent purity should be used in the test. Use only reagents free from potassium and ammonium, or having a negligible content of these ions.

4.1 *Hydrochloric acid*, approximately 0.1 N solution.

4.2 *Quaternary ammonium salt*, approximately 0.01 N solution.

Dissolve 3.65 g of cetyltrimethylammonium bromide – (CH₃(CH₂)₁₅ N(CH₃)₃) Br – or an equivalent quantity of another quaternary ammonium salt, in a 1000 ml one-mark volumetric flask. Dilute to the mark and mix, stirring gently to avoid the formation of foam.

NOTE. – As quaternary ammonium salt, it is possible to use a commercial solution, intended for pharmaceutical purposes, of alkylbenzyltrimethylammonium chloride (or benzalconium chloride), formula (C₆H₅CH₂N(CH₃)₃) Cl in which *n* varies from 8 to 18.