
INTERNATIONAL STANDARD



1691

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Sodium and potassium silicates for industrial use — Determination of carbonates content — Gas-volumetric method

Silicates de sodium et de potassium à usage industriel — Dosage des carbonates — Méthode gazométrique

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 47 has reviewed ISO Recommendation R 1691 and found it technically suitable for transformation. International Standard ISO 1691 therefore replaces ISO Recommendation R 1691-1970.

ISO Recommendation R 1691 was approved by the Member Bodies of the following countries :

Australia	Hungary	Portugal
Austria	India	Romania
Belgium	Iran	South Africa, Rep. of
Brazil	Israel	Spain
Colombia	Italy	Switzerland
Czechoslovakia	Japan	Thailand
Egypt, Arab Rep. of	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Peru	U.S.S.R.
Greece	Poland	Yugoslavia

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 1691 into an International Standard.

Sodium and potassium silicates for industrial use — Determination of carbonates content — Gas-volumetric method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a gas-volumetric method for the determination of the carbonates content, expressed, respectively, as sodium carbonate or potassium carbonate, of sodium and potassium silicates for industrial use.

Three cases, defined by a preliminary test, are envisaged :

1.1 Sodium or potassium silicates containing neither sulphides nor chlorates.

1.2 Sodium or potassium silicates containing sulphides.

1.3 Sodium or potassium silicates containing chlorates.

2 REFERENCE

ISO 1686, *Sodium and potassium silicates for industrial use — Samples and methods of test — General*.

3 PRELIMINARY TEST

3.1 Principle

Boiling of an acidified test portion containing methyl orange and with a lead acetate paper strip in the vapour. The presence of sulphides produces blackening of the paper and the presence of chlorates decolorizes the methyl orange.

3.2 Reagents

During the analysis, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity, free from carbon dioxide.

3.2.1 **Hydrochloric acid**, approximately 6 N solution.

3.2.2 **Methyl orange**, 0,5 g/l solution.

3.2.3 **Lead acetate paper**, cut into strips about 15 mm x 80 mm.

3.3 Procedure

Place about 5 g of the test sample (see ISO 1686) in a 300 ml conical flask. Add 150 ml of water and 3 drops of the methyl orange solution (3.2.2). Neutralize with the hydrochloric acid solution (3.2.1) and add an excess of 5 ml of this acid.

Fix a lead acetate paper strip (3.2.3) inside the neck of the conical flask, curling it over the outside of the flask.

Boil the solution for 5 min and select the procedure to be followed according to the following table.

Appearance		Case number	Procedure
solution	paper		
red	white	1.1	Clause 4
red	blackened	1.2	Clause 5
colourless	white	1.3	Clause 6