
INTERNATIONAL STANDARD



2480

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Sodium chloride for industrial use – Determination of sulphate content – Barium sulphate gravimetric method

First edition – 1972-12-15

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UDC 661.833.321 : 546.226 : 543.21

Ref. No. ISO 2480-1972 (E)

Descriptors : sodium chloride, chemical analysis, gravimetric analysis, determination of content, sulphates.

FOREWORD

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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.

International Standard ISO 2480 was drawn up by Technical Committee ISO/TC 47, *Chemistry*.

It was approved in January 1972 by the Member Bodies of the following countries :

Austria	India	Portugal
Belgium	Ireland	Romania
Chile	Italy	South Africa, Rep. of
Czechoslovakia	Korea, Dem.P.Rep. of	Spain
Egypt, Arab Rep. of	Morocco	Switzerland
France	Netherlands	Thailand
Germany	New Zealand	United Kingdom
Hungary	Poland	U.S.S.R.

The Member Body of the following country expressed disapproval of the document on technical grounds :

U.S.A.

Sodium chloride for industrial use – Determination of sulphate content – Barium sulphate gravimetric method

1 SCOPE

This International Standard specifies a gravimetric method for the determination of sulphate content of sodium chloride for industrial use.

2 FIELD OF APPLICATION

2.1 General case

The method is applicable to the determination of sulphate soluble in water, in sodium chloride for industrial use.

2.2 Special case

Determination of sulphate in a principal solution prepared in an acid medium.

NOTE – Whatever the conditions adopted, all related determinations shall be carried out in the same medium, except the determination of chlorides which shall always be carried out in an aqueous solution.

3 REFERENCE

ISO 2479, *Sodium chloride for industrial use – Determination of matter insoluble in water or acid and preparation of principal solutions for other determinations.*

4 PRINCIPLE

Dissolution of a test portion and separation of the insoluble residue.

Precipitation of the sulphate ions as barium sulphate in a boiling acid medium. Filtration, washing and ignition of the precipitate. Weighing of the barium sulphate.

5 REAGENTS

Distilled water or water of equivalent purity shall be used in the test.

5.1 Hydrochloric acid, approximately 6 N solution.

Dilute 50 ml of hydrochloric acid, ρ 1,19 g/ml (approximately 38 % (m/m) solution, or approximately 12 N), to 100 ml.

5.2 Sulphuric acid, ρ 1,84 g/ml (approximately 96 % (m/m) solution or approximately 36 N).

5.3 Barium chloride, approximately N solution.

Dissolve 122 g of barium chloride dihydrate in water in a 1 000 ml one-mark volumetric flask, dilute to the mark and mix.

5.4 Silver nitrate, 5 g/l nitric solution

Dissolve 0,5 g of silver nitrate in a little water, add 10 ml of nitric acid solution, ρ 1,40 g/ml approximately, and dilute to 100 ml.

5.5 Nitric acid ρ 1,40 g/ml (approximately 68 % (m/m) solution, or approximately 14 N).

6 APPARATUS

Ordinary laboratory apparatus and

6.1 Electric furnace, capable of being controlled at 800 ± 25 °C.

6.2 Desiccator, containing pumice moistened with sulphuric acid, silica gel, or phosphorus pentoxide.

6.3 Platinum or porcelain crucibles, approximately 30 mm diameter at the top, and approximately 30 mm deep.

7 PROCEDURE

7.1 Test portion

Take 100,0 ml of the principal solution A¹⁾ containing 100 g of the test sample per 1 000 ml.

7.2 Determination

Place the test portion (7.1) in a 250 ml beaker.

Add 2,0 ml of the hydrochloric acid solution (5.1), heat to boiling, stirring continuously, and add, drop by drop, 10 ml of the barium chloride solution (5.3). (Time taken for making the addition, approximately 1,5 min.)

1) See clause 7.3 of ISO 2479.