

Methods of test for

**Sodium  
tripolyphosphate  
(*pentasodium  
triphosphate*) and  
sodium pyrophosphate  
(*tetrasodium  
pyrophosphate*) —**

**Part 1: Determination of matter  
insoluble in water in sodium  
tripolyphosphate**

Confirmed  
December 2011

## Co-operating organizations

The Chemicals Industry Standards Committee, under whose authority this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Board of Trade  
 British Steel Industry  
 Chemical Industries Association\*  
 Department of Health & Social Security  
 Fertiliser Manufacturers' Association Ltd.\*  
 Gas Council  
 Institution of Gas Engineers  
 Ministry of Technology. Laboratory of the Government Chemist\*  
 National Sulphuric Acid Association  
 Royal Institute of Public Health & Hygiene

The industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the formulation of the United Kingdom point of view in the international work leading to the publication of this British Standard:

British Pharmacopoeia Commission  
 Flour Milling and Baking Research Association  
 Institute of Metal Finishing  
 National Association of Soft Drink Manufacturers  
 Society for Water Treatment and Examination  
 Textile Institute

This British Standard, having been approved by the Chemicals Industry Standards Committee, was published under the authority of the Executive Board on 28 February 1969

© BSI 11-1999

The following BSI reference relates to the work on this standard:  
 Committee reference CIC/25

ISBN 580 05376 8

### Amendments issued since publication

Amd. No.	Date	Comments

---

# Contents

	Page
Co-operating organizations	Inside front cover
Foreword	ii
<hr/>	
1 Scope	1
2 Principle	1
3 Reagents	1
4 Apparatus	1
5 Procedure	1
6 Expression of results	1
7 Test report	1
<hr/>	

## Foreword

This standard makes reference to the following British Standard:

BS 3978, *Water for laboratory use*.

For some years the United Kingdom has participated in the work of preparing methods of test for sodium tripolyphosphate and sodium pyrophosphate for industrial use, carried out within Working Group 7 of Technical Committee 47 — Chemistry, of the International Organization for Standardization (ISO). As international agreement is reached on the methods, it is proposed to publish them as parts of this British Standard.

This part is technically identical with ISO Recommendation R 850, “*Sodium tripolyphosphate for industrial use. Determination of matter insoluble in water*”.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

## 1 Scope

This Part of BS 4427 describes a method for the determination of the matter which is insoluble in water in sodium tripolyphosphate for industrial use.

## 2 Principle

The principle of this method of test is dissolution of the test sample, and separation of any insoluble matter by filtration, drying and weighing.

## 3 Reagents

Distilled water or water of at least equal purity<sup>1)</sup> should be used in the test.

## 4 Apparatus

Ordinary laboratory apparatus with the following shall be used:

**4.1 Filter crucible**, with sintered glass disk, of porosity between 15  $\mu\text{m}$  and 40  $\mu\text{m}$

**4.2 Electric oven**, with natural convection, regulated at  $110 \pm 5$  °C.

## 5 Procedure

**5.1 Test portion.** Weigh, to the nearest 0.1 g, approximately 10 g of the test sample.

**5.2 Determination.** Place the test portion (5.1) in a beaker of suitable capacity (400 ml for example) and dissolve in approximately 200 ml of water.

Boil the solution for about 10 min, cool and immediately filter under vacuum in the sintered glass crucible (4.1) previously dried at  $110 \pm 5$  °C for 2 h, cooled in a desiccator and weighed. Wash the precipitate until the filtrate is phosphate-free (qualitative test).

Place the crucible in the electric oven (4.2) at a temperature of  $110 \pm 5$  °C and keep it at this temperature for 2 h. Then remove the crucible from the oven, allow it to cool in the desiccator and weigh.

The cooling time in the desiccator should be equal to that adopted for taring the empty crucible.

## 6 Expression of results

The matter insoluble in water is given as a percentage by mass by the following formula:

$$\frac{I \times 100}{E}$$

where *I* is the mass, in grammes, of the filtered and dried insoluble matter,

*E* is the mass, in grammes, of the test portion.

## 7 Test report

State the following in the report:

- 1) the reference of the method used,
- 2) the results and the method of expression used,
- 3) any unusual features noted during the determination,
- 4) any operation not included in this standard or regarded as optional.

<sup>1)</sup> Attention is drawn to BS 3978, "Water for laboratory use".



---

## British Standards

The following are available on application:

YEARBOOK

Including subject index and numerical list of British Standards 15s.

SECTIONAL LISTS. Gratis

Acoustics (SL 10)

Aerospace materials and components (SL 25)

Automobile (SL 34)

British Standard Handbooks (SL 27)

Building (SL 16)

Chemical engineering (SL 5)

Chemicals, fats, glues, oils, soap, etc. (SL 4)

Cinematography and photography (SL 1)

Coal, coke and colliery requisites (SL 13)

Codes of Practice (SL 8)

Consumer goods (SL 3)

Documentation, including Universal Decimal Classification (SL 35)

Drawing practice (SL 37)

Electrical Engineering (SL 26)

Farming, dairying and allied interests (SL 31)

Furniture, bedding and furnishings (SL 11)

Gardening, horticulture and landscape work (SL 41)

Gas and solid fuel and refractories (SL 2)

Glassware, excluding laboratory apparatus (SL 39)

Heating, ventilating and air conditioning (SL 42)

Hospital equipment (SL 18)

Illumination and lighting fittings (SL 14)

Industrial instruments, etc. (SL 17)

Iron and steel (SL 24)

Laboratory apparatus (SL 23)

Leather, plastics, rubber (SL 12)

Local authority purchasing officers' guide (SL 28)

Machine tools (SL 20)

Mechanical engineering (SL 6)

Nomenclature, symbols and abbreviations (SL 29)

Non-ferrous metals (SL 19)

Nuclear energy (SL 36)

Packaging and containers (SL 15)

Paints, varnishes, paint ingredients and colours for paints (SL 9)

Personal safety equipment (SL 30)

Petroleum industry (SL 38)

Printing and stationery, paper and board (SL 22)

Road engineering (SL 32)

Shipbuilding (SL 40)

Textiles and clothing (SL 33)

Welding (SL 7)

---

---

# BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

## Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

## Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

## Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001.

## Copyright

Copyright subsists in all BSI publications. BSI also holds the copyright, in the UK, of the publications of the international standardization bodies. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI.

This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any other purpose than implementation then the prior written permission of BSI must be obtained.

If permission is granted, the terms may include royalty payments or a licensing agreement. Details and advice can be obtained from the Copyright Manager. Tel: 020 8996 7070.