



**American Water Works
Association**

ANSI/AWWA B505-12
(Revision of ANSI/AWWA B505-05)

The Authoritative Resource on Safe Water®

AWWA Standard

Disodium Phosphate, Anhydrous



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Contents

All AWWA standards follow the general format indicated subsequently. Some variations from this format may be found in a particular standard.

SEC.	PAGE	SEC.	PAGE
Foreword		2	
I	vii	3	
I.A	vii	4	
I.B	vii	4.1	3
I.C	vii	4.2	3
II	viii	4.3	4
II.A	viii	5	
III	ix	5.1	4
III.A	ix	5.2	5
III.B	ix	5.3	8
IV	ix	6	
V	ix	6.1	8
		6.2	9
		6.3	9
Standard			
1	1		
1.1	1		
1.2	1		
1.3	1		
		References	2
		Definitions	2
		Requirements	
		Physical Requirements.....	3
		Chemical Requirements	3
		Impurities.....	4
		Verification	
		Sampling.....	4
		Test Procedures	5
		Notice of Nonconformance	8
		Delivery	
		Marking.....	8
		Packaging and Shipping	9
		Affidavit of Compliance or Certified Analysis.....	9

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA B505.*

I. Introduction.

I.A. *Background.* Disodium phosphate, anhydrous, is a manufactured product obtained by combining a comparatively pure chemical, soda ash (Na_2CO_3) or caustic soda (NaOH), with phosphoric acid (H_3PO_4). The resulting product is dried, sized, and packaged.

Disodium phosphate, anhydrous, is a white, crystalline solid, commercially available in granular and powder forms. A solution of 1 lb/gal (0.12 kg/L) has a specific gravity of approximately 1.1 at 25°C (77°F).

For information on safety, refer to material safety data sheets (MSDS) available from the supplier or manufacturer.

I.B. *History.* In 1985, the AWWA Standards Committee on Scale and Corrosion-Control Chemicals recognized the need for a standard for disodium phosphate, anhydrous, used as a corrosion-control product in the treatment of potable water. The AWWA Standards Council authorized development of the standard on Nov. 18, 1985, and the first edition was approved on Jan. 25, 1988. The second edition of the standard was approved on Jan. 22, 1995. The third edition of the standard was approved on Jan. 21, 2001. The fourth edition of ANSI/AWWA B505 was approved by the AWWA Board of Directors on June 12, 2005. This edition was approved on Jan. 22, 2012.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for direct and indirect drinking water additives. Other members of the original consortium included the Water Research Foundation[†] (formerly AwwaRF), and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.[‡] Local agencies may choose to impose

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

† Water Research Foundation, 6666 West Quincy Avenue, Denver, CO 80235

‡ Persons outside the United States should contact the appropriate authority having jurisdiction.

requirements more stringent than those required by the state. To evaluate the health effects of products and drinking water additives from such products, state and local agencies may use various references, including two standards developed under the direction of NSF, NSF*/ANSI 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI 61, Drinking Water System Components—Health Effects.

Various certification organizations may be involved in certifying products in accordance with NSF/ANSI 60. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdiction. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

Annex A, “Toxicology Review and Evaluation Procedures,” to NSF/ANSI 60 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of “unregulated contaminants” are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

ANSI/AWWA B505 addresses additives requirements in Sec. 4.3.3 of the standard. The transfer of contaminants from chemicals to processed water or to residual solids is becoming a problem of greater concern. The language in Sec. 4.3.3 is a recommendation only for direct additives used in the treatment of potable water to be certified by an accredited certification organization in accordance with NSF/ANSI 60 Drinking Water Treatment Chemicals—Health Effects. However, users of the standard may opt to make this certification a requirement for the product. Users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements, including applicable standards.
2. Determine the status of certifications by parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Storage and Handling Precautions.* Disodium phosphate, anhydrous, is relatively hygroscopic and will absorb water. It must be stored under dry conditions. Exposure to humidity produces a caked condition. This results in poor flow and caking that interferes with the rate of dilution and effectiveness of the product. Refer to the MSDS available from the manufacturer or supplier for additional information.

* NSF International, 789 N. Dixboro Road, Ann Arbor, MI 48105.

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

III.A. *Purchaser Options and Alternatives.* The following information should be provided by the purchaser.

1. Standard used—that is, ANSI/AWWA B505, Standard for Disodium Phosphate, Anhydrous, of latest revision.
2. Whether compliance with NSF/ANSI 60, Drinking Water Treatment Chemicals—Health Effects, is required.
3. Details of other federal, state, or provincial, and local requirements (Section 4).
4. Physical form(s) and quantity (Sec. 4.1.1).
5. Specific maximum impurity content limits, if required (Sec. 4.3).
6. Whether the purchaser will reject product from containers or packaging with missing or damaged seals. The purchaser may reject product from bulk containers or packages with missing or damaged seals unless the purchaser's tests of representative samples, conducted in accordance with Sec. 5.2, demonstrate that the product meets the standard. Failure to meet the standard or the absence of, or irregularities in, seals may be sufficient cause to reject a shipment.
7. Form of shipment—bulk or package, type, and size of container (Sec. 6.2).
8. Whether alternative security measures have been adopted to replace or augment the security measures set out in Sec. 6.2.3 and 6.2.4.
9. Size and type of container to be used (Sec. 6.2).
10. Affidavit of compliance or certified analysis, or both, if required (Sec. 6.3).

III.B. *Modification to Standard.* Any modification of the provisions, definitions, or terminology in this standard must be provided by the purchaser.

IV. Major Revisions. Major changes made to the standard in this revision include the following:

1. Inclusion of a requirement for compliance with the Safe Drinking Water Act and other federal regulations (Section 4).
2. Inclusion of a requirement for tamper-evident packaging (Sec. 6.2.3 and 6.2.4).

V. Comments. If you have any comments or questions about this standard, please call AWWA Engineering and Technical Services at 303.794.7711, FAX at 303.795.7603, write to the department at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail at standards@awwa.org.

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**American Water Works
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AWWA Standard

Disodium Phosphate, Anhydrous

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes disodium phosphate, anhydrous, for use in the treatment of potable water, wastewater, and reclaimed water. The product described is an orthophosphate used, as formulated and in blends, to inhibit corrosion of potable water conveyance systems. The product described by this standard is also known as sodium phosphate, dibasic, anhydrous.

Sec. 1.2 Purpose

The purpose of this standard is to provide minimum requirements for disodium phosphate, including physical, chemical, sampling, packaging, shipping, and testing requirements.

Sec. 1.3 Application

This standard can be referenced in documents for purchasing and receiving disodium phosphate, anhydrous, and can be used as a guide for testing the physical and chemical properties of disodium phosphate, anhydrous, samples. The stipulations of this standard apply when this document has been referenced and then only to disodium phosphate, anhydrous, used in the treatment of potable water, wastewater, and reclaimed water.