



**American Water Works
Association**

ANSI/AWWA B505-05
(Revision of ANSI/AWWA B505-01)

The Authoritative Resource on Safe WaterSM

AWWA Standard

Disodium Phosphate, Anhydrous



Effective date: _____.

First edition approved by AWWA Board of Directors Jan. 25, 1988.

This edition approved June 12, 2005.

Approved by American National Standards Institute ____.

6666 West Quincy Avenue
Denver, CO 80235-3098
T 800.926.7337
www.awwa.org

Advocacy
Communications
Conferences
Education and Training
► **Science and Technology**
Sections

AWWA Standard

This document is an American Water Works Association (AWWA) standard. It is not a specification. AWWA standards describe minimum requirements and do not contain all of the engineering and administrative information normally contained in specifications. The AWWA standards usually contain options that must be evaluated by the user of the standard. Until each optional feature is specified by the user, the product or service is not fully defined. AWWA publication of a standard does not constitute endorsement of any product or product type, nor does AWWA test, certify, or approve any product. The use of AWWA standards is entirely voluntary. AWWA standards are intended to represent a consensus of the water supply industry that the product described will provide satisfactory service. When AWWA revises or withdraws this standard, an official notice of action will be placed on the first page of the classified advertising section of *Journal AWWA*. The action becomes effective on the first day of the month following the month of *Journal AWWA* publication of the official notice.

American National Standard

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether that person has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review, and users are cautioned to obtain the latest editions. Producers of goods made in conformity with an American National Standard are encouraged to state on their own responsibility in advertising and promotional materials or on tags or labels that the goods are produced in conformity with particular American National Standards.

CAUTION NOTICE: The American National Standards Institute (ANSI) approval date on the front cover of this standard indicates completion of the ANSI approval process. This American National Standard may be revised or withdrawn at any time. ANSI procedures require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036; (212) 642-4900.

Science and Technology

AWWA unites the entire water community by developing and distributing authoritative scientific and technological knowledge. Through its members, AWWA develops industry standards for products and processes that advance public health and safety. AWWA also provides quality improvement programs for water and wastewater utilities.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information or retrieval system, except in the form of brief excerpts or quotations for review purposes, without the written permission of the publisher.

Copyright © 2005 by American Water Works Association
Printed in USA

Committee Personnel

The AWWA Standards Committee on Scale and Corrosion-Control Chemicals, which reviewed and approved this standard, had the following personnel at the time of approval:

Robert A. Ryder, *Chair*

General Interest Members

H.T. Belcher Jr., Corrtac Systems Corporation, Currituck, N.C.	(AWWA)
W.J. Conlon, Parsons Brinckerhoff Quade & Douglas, Tampa, Fla.	(AWWA)
L.L. Harms, Black & Veatch Engineers, Kansas City, Mo.	(AWWA)
R.A. Ryder, Kennedy/Jenks Consultants, San Francisco, Calif.	(AWWA)
N.G. Pizzi,* Environmental Engineering & Technology, Twinsburg, Ohio	(AWWA)
S.J. Posavec,* Standards Group Liaison, AWWA, Denver, Colo.	(AWWA)

Producer Members

K.M. Ripp, Rockford, Ill.	(AWWA)
P.A. Vella, Carus Chemical Company, La Salle, Ill.	(AWWA)

User Members

W.F. Maier, Lansing Board of Water & Light, Lansing, Mich.	(AWWA)
J.J. Muldowney, Philadelphia Water Department, Philadelphia, Pa.	(AWWA)
R.M. Powell, Pinellas County Utilities, Largo, Fla.	(AWWA)
J.C. Thurrott, City of Daytona Beach, Daytona Beach, Fla.	(AWWA)
T.M. Tucker, Knoxville Utilities Board, Knoxville, Tenn.	(AWWA)
M.M. Vogel, Corning, N.Y.	(AWWA)

* Liaison, nonvoting

This page intentionally blank.

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
	<i>Foreword</i>		2	References.....	2
I	Introduction.....	vii	3	Definitions	2
I.A	Background.....	vii	4	Requirements	
I.B	History.....	vii	4.1	Physical Requirements	2
I.C	Acceptance	vii	4.2	Chemical Requirements.....	3
II	Special Issues.....	viii	4.3	Impurities	4
II.A	Storage and Handling		5	Verification	
	Precautions.....	viii	5.1	Sampling.....	4
III	Use of This Standard	ix	5.2	Test Procedures.....	5
III.A	Purchaser Options and		5.3	Notice of Nonconformance	7
	Alternatives	ix	6	Delivery	
III.B	Modification to Standard.....	ix	6.1	Marking.....	8
IV	Major Revisions	ix	6.2	Packaging and Shipping.....	8
V	Comments	ix	6.3	Affidavit of Compliance or	
				Certified Analysis.....	9
	<i>Standard</i>				
1	General				
1.1	Scope	1			
1.2	Purpose	1			
1.3	Application	1			

This page intentionally blank.

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. This fourth edition of ANSI/AWWA B505 was approved by the AWWA Board of Directors on June 12, 2005.

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 American Water Works Association Research Foundation (AwwaRF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) 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 requirements more stringent than those required by the state. To evaluate the health

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

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 of the standard. The transfer of contaminants from chemicals to processed water or the 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 also consult the appropriate state or local agency having jurisdiction in order to

1. Determine the additives requirements, including applicable standards.
2. Determine the status of certifications by all 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

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

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

aking 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.

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 items 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. Physical form(s) and quantity (Sec. 4.1.1).
4. Specific maximum impurity content limits, if required (Sec. 4.3).
5. Size and type of container to be used (Sec. 6.2).
6. Affidavit of compliance or certified analysis, or both, if required (Sec. 6.3).

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

IV. Major Revisions. No major revisions have been made to this standard.

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

This page intentionally blank.



American Water Works
Association

ANSI/AWWA B505-05
(Revision of ANSI/AWWA B505-01)

AWWA Standard

Disodium Phosphate, Anhydrous

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes disodium phosphate, anhydrous, for water supply service. 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 the minimum requirements for disodium phosphate, anhydrous, including physical, chemical, packaging, shipping, and testing requirements.

Sec. 1.3 Application

This standard can be referenced in specifications 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 only to disodium, anhydrous, phosphate used in water supply service.