



**American Water Works
Association**

The Authoritative Resource on Safe WaterSM

ANSI/AWWA B503-05
(Revision of ANSI/AWWA B503-01)

AWWA Standard

Sodium Tripolyphosphate



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

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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

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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	References	2
I	Introduction.....	vii	3	Definitions	2
I.A	Background.....	vii	4	Requirements	
I.B	History.....	vii	4.1	Physical Requirements	3
I.C	Acceptance	vii	4.2	Chemical Requirements.....	4
II	Special Issues.....	viii	4.3	Impurities	4
II.A	Storage and Handling		5	Verification	
	Precautions.....	viii	5.1	Sampling.....	5
III	Use of This Standard	ix	5.2	Test Procedures.....	6
III.A	Purchaser Options and		5.3	Notice of Nonconformance	9
	Alternatives	ix	6	Delivery	
III.B	Modification to Standard.....	ix	6.1	Marking.....	9
IV	Major Revisions	ix	6.2	Packaging and Shipping.....	9
V	Comments	ix	6.3	Affidavit of Compliance or	
				Certified Analysis.....	10
	Standard			Table	
1	General		1	Bulk Density of Granular	
1.1	Scope	1		Sodium Tripolyphosphate.....	3
1.2	Purpose	1			
1.3	Application	1			

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Foreword

This Foreword is for information only and is not a part of ANSI/AWWA B503.

I. Introduction.

I.A. *Background.* Sodium tripolyphosphate 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 resultant product is subjected to controlled conditions of heating to form a crystalline solid, which is subsequently ground and sized.

Sodium tripolyphosphate is a white, solid material, commercially available in granular or powder forms. A solution of 1 lb/gal (0.12 kg/L) has a specific gravity of approximately 1.10. Refer to material safety data sheets (MSDS) available from the supplier or manufacturer for additional information.

Water utilities use sodium tripolyphosphate to control scale and corrosion and to treat red water.

I.B. *History.* The first edition of ANSI/AWWA B503 was developed by the AWWA Committee on Scale and Corrosion-Control Chemicals. It was first published in 1978. Subsequent revisions were approved by the AWWA Board of Directors in 1984, 1989, 1994, and 2001. This sixth edition was prepared by the AWWA Standards Committee on Scale and Corrosion-Control Chemicals and 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

*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 B503 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 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.* Sodium tripolyphosphate is slightly hygroscopic and must be stored under dry conditions. Exposure to humidity produces a caked condition and accelerates reversion to orthophosphate. This results

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

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

in poor flow and caking, which interferes with the rate of dilution and effectiveness of the product. For additional information, refer to the MSDS available from the manufacturer or supplier.

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 B503, Sodium Tripolyphosphate, 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).
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, 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.

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(Revision of ANSI/AWWA B503-01)

AWWA Standard

Sodium Tripolyphosphate

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes sodium tripolyphosphate for use in water supply service.

Sec. 1.2 Purpose

The purpose of this standard is to provide the minimum requirements for sodium tripolyphosphate, including physical, chemical, packaging, shipping, and testing requirements.

Sec. 1.3 Application

This standard can be referenced in specifications for purchasing and receiving sodium tripolyphosphate and can be used as a guide for testing the physical and chemical properties of sodium tripolyphosphate samples. The stipulations of this standard apply when this document has been referenced and only to sodium tripolyphosphate used in water supply service.