



**American Water Works
Association**

The Authoritative Resource on Safe Water®

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(Revision of ANSI/AWWA B405-00)

AWWA Standard

Sodium Aluminate

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA B405.

I. Introduction.

I.A. *Background.* Sodium aluminate ($\text{Na}_2\text{Al}_2\text{O}_4$) is used to improve hardness reduction and coagulation when softening water with lime or lime and soda ash. It can also be used in conjunction with alum to improve coagulation.

Sodium aluminate is a manufactured product obtained by combining aluminum oxide (Al_2O_3) with sufficient excess causticity for stabilization. Sodium aluminate is produced either as a solid or liquid. The solid form is a white or brown granular material containing 60–80 percent $\text{Na}_2\text{Al}_2\text{O}_4$ (19.75–26.33 percent aluminum). The density of solid sodium aluminate is 800 kg/m^3 (50 lb/ft^3). Liquid sodium aluminate is a concentrated solution containing approximately 30–45 percent $\text{Na}_2\text{Al}_2\text{O}_4$ (9.87–14.80 percent aluminum). The specific gravity of liquid sodium aluminate is 1.45–1.60.

Refer to material safety data sheets (MSDS) available from the supplier or manufacturer for safety information.

I.B. *History.* Prior to May 15, 1960, a tentative standard for sodium aluminate was designated AWWA B405-59T. On May 15, 1960, the first edition was approved. Subsequent revisions to ANSI/AWWA B405 were prepared by the AWWA Standards Committee on Iron Salts, Aluminum Salts, and Related Coagulant Aids and approved by the AWWA Board of Directors in 1983, 1989, 1994, and 2000. This sixth edition was approved by the AWWA Board of Directors on June 11, 2006.

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 all 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 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 B405 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. 4.3.2 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.

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

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