

American Water Works Association

ANSI/AWWA B302-95

(Revision of ANSI/AWWA B302-90)



AWWA STANDARD
FOR
AMMONIUM SULFATE



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AMERICAN WATER WORKS ASSOCIATION

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Foreword

This foreword is for information only and is not part of AWWA B302.

I. Introduction

I.A. *Background.* Ammonium sulfate, $(\text{NH}_4)_2\text{SO}_4$, is used by some water utilities as a source of ammonia in the formation of chloramines and as an activating agent in the formation of activated silica. It is readily soluble in water and consists of rhombic crystals or fine granules, which, if pure, are colorless or white and odorless. Commercial grades of ammonium sulfate have a reddish-white to brown color as a result of traces of iron and organic compounds that have their origin in the source of the material.

Ammonium sulfate used for potable water treatment is usually a by-product in the manufacture of caprolactam, a nylon-base material. It is available at a commercial strength of 99 percent ammonium sulfate. Ammonium sulfate obtained as a by-product in the manufacture of coal gas and coke is no longer used in potable water treatment.

Ammonium sulfate can be prepared so it is free of contaminants by reacting ammonia and sulfuric acid. Food-grade ammonium sulfate, which is used as a dough conditioner and in yeast food, is produced in this manner. The cost of the food-grade material is several times greater than the commercial-grade material; however, some states require food-grade material for use in potable water treatment. Refer to the *Food Chemicals Codex** for further information on food-grade ammonium sulfate.

Depending on its source, ammonium sulfate material has a tendency to cake and arc when stored in bulk. This can be prevented by the addition of a small amount of amorphous silica (for example, 0.06–0.1 percent), a type of fused silica.

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

I.B. *History.* The first edition of this standard was prepared by the AWWA Water Purification Division. It was approved as tentative on July 15, 1949, and made standard on May 15, 1953, with the designation of B400-53. The second edition was prepared by AWWA Committee 7400P and was approved on Jan. 27, 1964, with the designation of B302-64. The third and fourth editions were prepared by the AWWA Standards Committee on Taste and Odor Control Chemicals and were approved on Jan. 25, 1981, and June 22, 1986, respectively. For this current edition, the standard was revised and prepared by the AWWA Standards Committee on Disinfectants.

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.

*Available from National Academy of Sciences, 2102 Constitution Ave. N.W., Washington, DC 20418.