

**BOROUGH OF SOMERSET
SPECIFICATIONS
CAUSTIC SODA**

The purpose of these specifications is to obtain caustic soda for the Borough of Somerset to be used at the Wastewater Treatment Plant and Pump Stations. Bids will be for the calendar year 2009.

Caustic soda supplied will be free-flowing grade in full accordance with American Water Works Association Standard B 501-80. It shall be packaged in 55 gallon and 15 gallon containers. Current estimated usage is 2,100 pounds annually.

LIQUID CAUSTIC SODA 25%

Section 1 – General

Sec. 1.1 Scope

This standard pertains to caustic soda, anhydrous and liquid, for use in the treatment of municipal and industrial water supplies. Section 1 concerns general conditions; section 2, material specifications; Section 3, sampling, packing and shipping, and marking; and Section 4, testing.

Sec. 1.2 References

This standard references the following documents which form a part of this standard to the extent specified herein. In any case of conflict, the requirements of this standard shall prevail.

1.2.1 Standard Methods for the Examination of Water and Wastewater. APHA, AWWA, WPCF, Washington, DC (14th ed., 1975)

1.2.2 AstM Standards. American Society for Testing and Materials, Philadelphia, PA (2nd ed., 1972)

Sec. 1.3 Affidavit of Compliance

If specified in the supplementary specifications, the manufacturer or vendor shall provide an affidavit acknowledging that the caustic soda furnished according to the purchaser's order complies with all applicable requirements of this standard.

Sec 1.4 Rejection

1.4.1 Notice of dissatisfaction. Notice of dissatisfaction with a shipment of material because of failure to meet the requirements of this standard shall be provided to the vendor within ten days after receipt of the shipment at the point of destination. The results of the purchaser's tests shall prevail unless the vendor notifies the purchase within five working days of receipt of the notice of complaint by the producing plant that he desires a retest. Upon receipt of the request for a retest, the purchase shall forward to the vendor one of the sealed samples taken in accordance with Sec. 3.1 of this standard. If the retest results obtained by the vendor do not agree with the results obtained by the purchaser, then the other sealed sample shall be forwarded, unopened, for analysis to a referee laboratory agreed upon by both parties. The results of the referee's analysis shall be accepted as final. The cost of the referee's analysis shall be paid for by the vendor if the analysis shows that the material does not meet this standard and by the purchase if it does meet this standard.

1.4.2 Removal of unsatisfactory material. If the material does not meet the requirements of this standard, then the vendor shall remove the material from the premises of the purchase at the purchaser's request, and replace it with a like amount of satisfactory caustic soda, or, a price adjustment may be agreed upon between the purchaser and the vendor.

Section 2 – Material Specifications

Sec. 2.1 Definition

Caustic soda is a compound that is produced in the electrolytic manufacture of chlorine. In the anhydrous form, it is a white to slightly off-white, opaque or translucent solid that rapidly absorbs moisture from the atmosphere. Liquid caustic soda is a solution of anhydrous caustic soda and water.

Sec. 2.2 Impurities

The caustic soda shall contain no substances in quantities capable of producing deleterious or injurious effects upon the health of those consuming the water to which the caustic soda has been added or causing water so treated to fail to meet the requirements of the USEPA Primary Drinking Water Regulations.

Sec. 2.3 Chemical Composition

1.2.1 Anhydrous caustic soda. Anhydrous caustic soda supplied under this standard shall contain a minimum of 74.4 percent total alkalinity as Na₂O; 96.0 percent sodium hydroxide as NaOH; and not more than 2 percent carbonate as Na₂CO₃.

2.3.2 Liquid caustic soda. Liquid caustic soda supplied under this standard shall contain approximately 25 percent sodium hydroxide (NaOH) unless the purchaser's supplementary specification requires that the liquid caustic soda contain approximately 73 percent NaOH.

2.3.3 Basis of selling price. Any strength of solution shall be sold on the basis of 76.0 percent Na₂O as determined by the following formula:

$$\frac{\text{Weight of shipment} \times \text{Percentage of Na}_2\text{O as determined}}{0.76} = \text{Equivalent weight of 76.0 percent Na}_2\text{O in caustic soda}$$

Section 3 – Sampling, Packing and Shipping, and Marking

Sec. 3.1 Sampling

3.1.1 Sampling Point. Samples shall be taken at the point of destination.

3.1.2 Sampling precaution: Sampling of solid caustic soda should be conducted quickly, preferably when the atmosphere is not unusually damp, and the sample should be sealed as quickly as possible to avoid absorption of moisture and carbon dioxide from the surrounding air.

3.1.3 Sample selection. Five percent of the packages shall be taken from a broken package.

3.1.4 Sampling solid material. Solid caustic soda shall be sampled by breaking off small pieces from the top, bottom, and sides of the package at several locations and crushing them to sampling size. Sample particles shall be small enough to use for analysis without further crushing.

Note: Folding solid caustic soda in cotton crepe or cotton flannel prior to crushing serves to protect the worker and reduces contact with the atmosphere.

3.1.5 Sampling tube. Ground, flake, crystal, or beaded caustic soda may be sampled by means of a sampling tube that is at least $\frac{3}{4}$ in. (20 mm) in diameter.

3.1.6 Anhydrous sample size. The gross sample, weighing at least 10 pounds (4.5 kg), shall be crushed if necessary, mixed thoroughly, and carefully divided to provide three 1-lb (0.45-kg) samples. The samples shall be sealed in airtight, moisture-proof glass or plastic containers. Each sample container shall be labeled to identify it and shall be dated and signed by the sampler.

3.1.7 Mixing liquid caustic soda. Packages of caustic soda in solution shall be mixed thoroughly by rolling or other means and sampled properly, preferably by tube sampling. Samples from tank cars can be obtained by means of a *thief* sampler.

3.1.8 Liquid sample size. When sampling liquid caustic soda, the gross liquid sample (approximately 1 gallon (4 L)) shall be thoroughly mixed. Approximately 1 pint (1.5 L) of the mixed solution shall be placed in each of three airtight moisture-proof sealed glass or plastic containers. Each sample container shall be labeled to identify it and shall be dated and signed by the sampler.

Sec. 3.2 Packing and Shipping

3.2.1 Anhydrous caustic soda. Solid (underground) caustic soda shall be shipped in steel drums containing 700-725 pounds (318-329 kg) net weight. Flake, ground, crystal, or beaded caustic soda shall be shipped in steel drums, kegs, barrels, polyethylene-lined bags, or fiberboard drums ranging from 50-500 pounds (22.7-227 kg) net weight.

3.2.2 Liquid caustic soda. Liquid caustic soda shall be shipped in carboys, 50-55 gallon and 15 gallon drums (189- 208-L) steel drums, tank cars, tank trucks, or barges.

3.2.3 Package weight. The net weight of packages shall not deviate from the recorded weight by more than 1.5 percent. Any exception taken to the weight of the material received shall be based on a deviation from the certified unit weight of not less than 10 percent of the packages shipped and that are selected at random from the shipment. All drums must be tamper-proof with sealed caps. Product with a broken seal will not be accepted upon delivery.

Note: Extreme care should be taken when handling caustic soda both in liquid and anhydrous form. Workers should be given detailed instructions on how to avoid injury. Proper protective clothing, goggles, and face shields should be provided. Containers used in shipping should comply with Department of Transportation specifications.

Sec. 3.3 Marking

3.3.1 Identification. Each shipment of material shall bear some means of identification. Each package shall be marked with the net weight of the contents, the name of the manufacturer, and the brand name, if any. When shipped in bulk, this information shall accompany the bill of lading.

3.3.2 Guarantee. The package should also bear the statement, "guaranteed by (name of manufacturer) to meet the American Water Works Association Standard for Caustic Soda."

Section 4 – Testing Methods

- Will be based on AWWA Standard B501-80 if it is required.

General Provisions

1. All products must be manufactured in the United States
2. Delivery vehicles shall be appropriate for the product being hauled and shall carry the proper placard as well as proper equipment for loading the product.
3. The drivers shall be trained in chemical safety and in proper loading and unloading procedures for the product.
4. The shipper shall have adequate insurance as required by the Federal Motor Carrier Act.
5. Driver of delivery vehicle shall have in his possession a material Safety Data Sheet for all the products that are on the delivery vehicle when in Somerset Borough or enroute to a Borough facility. Said sheets shall be turned over to police, fire, or EMS personnel upon request, in the event of an accident or routine traffic stop.

All bids shall be submitted on forms furnished by the Borough and none other will be accepted. No bidder may withdraw his bid within 60 days after the opening thereof. Bids shall be in a sealed envelope. On the face of the envelope, upper left corner, print or type your name and address. In center of envelope, print or type:

Caustic Soda Bid
Council, Borough of Somerset
P.O. Box 71
Somerset, PA 15501

Bids must be received by 2:00 p.m. Thursday, December 18, 2008 at which time the bids will be publicly opened and read aloud.

Council reserved the right to reject any and/or all bids, and to award the purchase so that the best interests of the Borough of Somerset are served.

BIDS CLOSE 2:00 P.M. THURSDAY, DECEMBER 18, 2008

**BOROUGH OF SOMERSET
BID FORM**

Caustic Soda

The undersigned states that he has carefully read the attached specifications and is aware of all contents. He certifies that the material delivered will be in full conformity with the specifications and the purpose for which the product is intended, for the year 2009.

Liquid Caustic Soda – Total 2,100 Gallons

Price Per Gallon \$ _____
(55 gallon drums)

Brand Name: _____

Delivery will be made within _____ days of order.

Price Per Gallon \$ _____
(15 gallon drums)

Firm: _____

By: _____
(authorized representative)

Address: _____

Phone: _____

Date: _____

BIDS CLOSE 2:00 P.M. THURSDAY, DECEMBER 18, 2008