

**CITY OF ANN ARBOR
STANDARD SPECIFICATIONS
FOR
SODIUM HEXAMETAPHOSPHATE**

This standard pertains to sodium hexametaphosphate (glassy sodium polyphosphate) for use in the treatment of municipal water supplies.

SECTION 1: General Information

Sec. 1.1 Definitions

The following definitions shall apply in this standard:

Manufacturer: Any party that produces sodium hexametaphosphate as covered by this standard.

Purchaser: Any party that enters into a contract, either written or verbal, to purchase sodium hexametaphosphate in accordance with the provisions of this standard.

Vendor: Any party that enters into a contract, either written or verbal, to supply sodium hexametaphosphate for purchase in accordance with this standard.

Sodium Hexametaphosphate: A glassy solid that is a soluble phosphate containing Na_2O and P_2O_5 in a ration of approximately 1.1 to 1 respectively. The product is actually an amorphous chain of polyphosphates with the formula $\text{Na}_{n+2}\text{P}_n\text{O}_{3n+1}$. The average of n is approximately 10-16.

Sec. 1.2 Affidavit of Compliance

The purchaser requires an affidavit from the vendor that the sodium hexametaphosphate furnished under the purchaser's orders meets or exceeds the specifications of this standard.

Sec. 1.3 Rejection

Notice of Nonconformance. If the sodium hexametaphosphate does not meet the requirements of this standard, a notice of nonconformance shall be provided by the purchaser to the vendor within 10 working days of receipt of the shipment at its point of destination. The results of the purchaser's test shall prevail unless the vendor notifies the purchaser within five working days of receipt of the notice of nonconformance that a retest is desired. On receipt of the request for a retest, the purchaser shall forward to the vendor one of the sealed samples taken in accordance to Section 3.2 of this standard. In the event that the retest results do not agree with the test results

of the purchaser, the other sealed sample shall be forwarded to a referee laboratory agreed upon by both parties for analysis. The results of the referee laboratory's analysis shall be considered final. If the shipment is found to be in compliance with this standard, then the cost of the referee laboratory shall be assumed by the purchaser. If the shipment is found not to meet the specifications of this standard, the cost of the referee laboratory shall be assumed by the vendor.

If the material delivered is found to not meet the requirements of this standard, the responsibility of removal from the point of destination shall fall wholly on the vendor. An exception to this point may be made if a price adjustment is made between the vendor and the purchaser.

SECTION 2: Specifications

Sec. 2.1 Physical Requirements

Sodium hexametaphosphate supplied under these specifications may be broken glassy plates, approximately one-sixteenth to one-fourth inch thick and pieces not larger than 2 x 2 inches.

Sec. 2.3 Chemical Requirements

Sodium hexametaphosphate shall contain not less than 60 percent phosphorus pentoxide (P_2O_5), 26.2 percent phosphorus (P), or 80.4 percent phosphate (PO_4) on an as-is basis.

The pH of a one percent solution of sodium hexametaphosphate shall be in the range of 5.8-7.3.

Sec. 2.4 Calculations

Percent P_2O_5 can be expressed as percent P content by multiplying P_2O_5 by 0.437.

Percent P_2O_5 can be expressed as PO_4 content by multiplying P_2O_5 by 1.34.

Sec. 2.5 Impurities

The sodium hexametaphosphate provided under this standard shall contain no soluble or insoluble material, either organic or inorganic, capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with sodium hexametaphosphate.

Furthermore, the sodium hexametaphosphate supplied under this specification shall conform to NSF/ANSI standard 60/61 and the vendor shall provide an affidavit attesting to this conformance.

Water-insoluble matter in the material shall not exceed 0.1 percent by weight.

This standard applies to sodium hexametaphosphate, that is prepared by conventional and accepted methods of production. If other methods or raw goods are used in its production, impurities may be present, and this would be inconsistent with good water treatment practices. Additional testing by the manufacturer or vendor may be required by the purchaser to insure that

the sodium hexametaphosphate meets the requirements of this standard and is suitable for water treatment. The additional tests shall be in accordance with product evaluation analysis methods listed for the product available from the manufacturer.

SECTION 3: Marking and Sampling

Sec. 3.1 Marking

Each package shall be marked legibly with the net weight of the contents, the name of the manufacturer, the name of the material and the brand name, manufacturing code, and any labels required by local, state and federal authorities.

Sec. 3.2 Sampling

Samples shall be taken at the point of destination, in accordance to AWWAB502-01.

Sec. 3.3 Shipping and Packaging

The material shall be shipped in 50 pound net weight multi-walled, moistureproof bags. The net weight reported on each bag shall not deviate from the reported weight by more than 1.0 percent.

The pallets, on which the material is delivered, shall be no wider than 40" on the side that is approached by the pallet jack or fork lift.

Shipments shall be received in covered motor freight lots, F.O.B. Ann Arbor, MI, and be protected from the weather. They shall be delivered in a dry condition and shall have not been previously wet or subject to undue dampness, nor contain more than 2 percent broken packages.

Each shipment shall be subject to scheduling by the purchaser and shall be in truckload lots.

Each bidder shall state all conditions as to minimum shipment and others. Each shipment is to be invoiced separately. The vendor shall give notice, prior to delivery, of the approximate time and date of delivery of each shipment to the purchaser.

SECTION 4: Testing Procedures

All testing shall be done in accordance to the most current and applicable AWWA standard for sodium hexametaphosphate.

P_2O_5 and pH are good indicators of the overall quality of sodium hexametaphosphate.