



Designation: D 538 – 85 (Reapproved 1997)

Standard Specification for Trisodium Phosphate¹

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1. Scope

1.1 This specification covers material suitable for various washing, cleaning, and scouring processes, with or without soap as conditions demand, and where a moderately strong alkaline material is desired.

1.2 This material may be hazardous if not properly managed.

1.3 Precautionary information for the safe use, storage, and disposal of this material should be preliminarily obtained from suppliers and others.

1.4 In case of personal accident with this material, apply appropriate first aid; telephone the nearest Poison Control Center for assistance, and get medical attention immediately.

2. Referenced Documents

2.1 *ASTM Standards:*

D 501 Test Methods of Sampling and Chemical Analysis of Alkaline Detergents²

3. Trisodium Phosphate

3.1 Trisodium phosphate shall be a white, uniform product in one of the following types, as specified by the purchaser:

Type I—Anhydrous powder or granules.

Type II—Granular material corresponding approximately to the formula $\text{Na}_3\text{PO}_4 \cdot \text{H}_2\text{O}$.

Type III—Flake or crystalline material corresponding ap-

proximately to the formula $\text{Na}_3\text{PO}_4 \cdot 12\text{H}_2\text{O}$.

4. Ordering Information

4.1 Trisodium phosphate shall be purchased by net weight, but in the event of weight shortage it shall be recognized that trisodium phosphate is subject to a possible gain or loss of weight due to atmospheric or storage conditions, or both. Therefore the calculation of net weight shall be based upon a product containing 97 % of trisodium phosphate (calculated from the determined P_2O_5 as Na_3PO_4 for Type I, as $\text{Na}_3\text{PO}_4 \cdot \text{H}_2\text{O}$ for Type II, or as $\text{Na}_3\text{PO}_4 \cdot 12\text{H}_2\text{O}$ for Type III). The net weight of the material to be paid for shall be calculated as follows:

$$W = (R \times T)/97 \quad (1)$$

where:

W = net weight of the material to be paid for,

R = net weight of material as received, and

T = total trisodium phosphate calculated as Na_3PO_4 for Type I, as $\text{Na}_3\text{PO}_4 \cdot \text{H}_2\text{O}$ for Type II, or as $\text{Na}_3\text{PO}_4 \cdot 12\text{H}_2\text{O}$ for Type III.

4.2 In the event that the calculation under 4.1 results in a figure greater than 100 %, the seller waives the right to invoice the purchaser for any amount in excess of 100 %.

5. Chemical Composition

5.1 Trisodium phosphate, as received, shall conform to the requirements for chemical composition given in Table 1.

6. Sampling and Testing

6.1 The material shall be sampled and analyzed in accordance with Test Methods D 501.

¹ This specification is under the jurisdiction of the ASTM Committee D-12 on Soaps and Other Detergents and is the direct responsibility of Subcommittee D12.14 on Specifications for Analysis of Inorganic Alkaline Detergents.

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² *Annual Book of ASTM Standards*, Vol 15.04.