Brim Technologies, Inc
151 Industrial Way East
Eatonton, NJ 07724
973-895-8826

Technical Data Sheet

Sodium Thiosulfate, 10-30 mg Tablets
(Safe DChlor T Series)

Active Ingredient: sodium thiosulfate, CAS No. 7772-98-7

Inert Ingredients: sodium chloride

Intended Use:
Dechlorination is the process of removing residual chlorine (or chloramines) from disinfected water. Treatment of chlorinated water can be accomplished by many methods. Tablets offer a convenient and functional alternative to sloppy and unstable liquids. Tablets are precisely formulated to contain exact quantities of neutralizers to match specific applications. Dechlorination agents are added to environmental collection samples to avoid the possibility of reactions that may occur between free chlorine and contaminants present in test samples. The presence of dechlorination agents will arrest chlorine reactions that may subsequently interfere with analysis.

Reactions:
Sodium thiosulfate will function as a dechlorination or reducing agent when mixed with chlorine-containing water, sodium thiosulfate reacts with the chlorine according to the following equation;

$$Na_2S_2O_3 + 4Cl_2 + 5H_2O \rightarrow 2NaHSO_4 + 8HCl \rightarrow$$

Sodium thiosulfate further reacts with hydrochloric acid (produced in the previous reaction) to form breakdown products such as salt, water and sulfur;

$$Na_2S_2O_3 + 2HCl \rightarrow 2NaCl + H_2O + S + SO_2$$

Treating Samples for Residual Chlorine:
Samples subject to chlorine interference must be checked for the presence of chlorine and treated with sodium thiosulfate prior to analysis. Samples that may be affected include coliforms, inorganic phenols, ammonia nitrogen, total Kjeldahl nitrogen and select samples for organic analysis.

The sample source may be checked with potassium iodide starch paper test strips to document the presence or absence of chlorine. If residual chlorine is present, treat sample with sodium thiosulfate until no residual chlorine is detected.

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Sodium thiosulfate 10-30 mg tablets, anhydrous

Dosage Guidelines:
Sodium Thiosulfate, anhydrous (STA) vs. Sodium Thiosulfate, pentahydrate (STP)
Solid sodium thiosulfate is commercially available as sodium thiosulfate anhydrous or sodium thiosulfate pentahydrate. The difference between the two is the amount of water molecules attached to the thiosulfate. Anhydrous ($Na_2S_2O_3$) is waterless and the pentahydrate contains 5 molecules of water ($Na_2S_2O_3$-$5H_2O$). Since the molecular weight of the STP is higher than that of the STA the pentahydrate grade will require a higher dose for dechlorination. All Safe DChlor sodium thiosulfate tablets contain anhydrous form of sodium thiosulfate and require approximately 39% less dose vs. the pentahydrate form.

Below is the recommended use ratio for neutral water (pH 5-8):
1.4:1 mg sodium thiosulfate (anhydrous): ppm Cl_2

pH Sensitivity
Sodium thiosulfate is sensitive to solution pH. More sodium thiosulfate is required to dechlorinate acidic solutions (low pH) vs. alkaline solutions (high pH). It is recommended that the end user determine the solution pH and adjust dosage to normalize for pH.

Below is the recommended use ratio for acidic water (pH 2-5):
2.5:1 mg sodium thiosulfate (anhydrous): ppm Cl_2

Below is the recommended use ratio for alkaline water (pH 8-12):
0.8:1 mg sodium thiosulfate (anhydrous): ppm Cl_2

Sodium Thiosulfate Tablets, anhydrous

Product selection: Sodium thiosulfate tablets are available in four strengths (10mg, 20mg, 25mg & 30mg) and designed for collection volumes between 125ml and 1,500ml.

Sodium Thiosulfate Series:	**T10**	**T20**	**T25**	**T30**
Sodium thiosulfate content:	10 mg	20 mg	25 mg	30 mg
Dechlorination capacity* (Cl_2 / liter):	7 ppm	14 ppm	18 ppm	21 ppm

* Neutral pH water

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Sodium Thiosulfate, anhydrous Tablets

Packaging: Sodium thiosulfate T Series tablets are packaged in 5,000 & 500 count bottles or in bulk 65,000 count containers. Contact customer service for custom sizes and shapes.

Storage & Handling: Store as general storage. Keep dry. Avoid excessive humidity. Replace cap when not in use.

Stability: Extremely stable under ordinary conditions of use.

Long Term Stability: Shelf life studies indicate that the product is stable for more than five years when stored under the recommended conditions. Check product label for expiration date. Listed below is a typical storage stability profile of tablets after aging three years at ambient temperature

Storage period	Initial	1 Year	3 Years	5 Years
Sodium thiosulfate content, mg/tablet (+/- 3%)	11.3	11.1	10.6	10.3

Post Sterilization Stability: Sodium thiosulfate T Series are provided as bulk, non-sterile tablets. Tablets requiring sterilization are stable and fully functional follow most sterilization methods. Listed below shows activity levels of field samples following sterilization by autoclave and Irradiation.

Sterilization Method;	Control	Autoclave	Irradiation
Sodium thiosulfate content, mg/tablet (+/- 3%);	10.1	10.3	9.9

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References: 40 CFR Part 136.3
Standard Methods for the Examination of Water and Wastewater, 18th Edition

Other: Information contained herein is given in good faith but makes no warranty or representation as to its comprehensiveness or accuracy.