

# Wallace & Tiernan® Chlorine Dioxide Generation Systems

## Technical Solution 18.75

Technical Solution 18.75 is a USEPA registered 15% active sodium chlorite solution used in conjunction with additional co-reactant chemicals to generate chlorine dioxide. Chlorine dioxide is used in water treatment as an oxidant and a disinfectant. Technical Solution 18.75 is registered for use in potable water and wastewater disinfection systems, food plant processing water, CIP systems, industrial cooling tower applications, oilfield injection water, and white water paper mill systems. Technical Solution 18.75 is registered with NSF under NSF/ANSI Standard 60 and meets requirements for AWWA B303-05.

### Typical Physical Properties

Appearance	Clear, water white to slightly yellow liquid
Odor	Slight chlorine odor
Turbidity, NTU	10 max
Solubility in Water	Complete
Specific Gravity	1.12 at 25°C (77°F)
Density	9.4 lbs/ gal at 25°C (77°F) (typical)
Crystallization point	≤-7°C (20°F)
pH (as supplied)	> 12

Typical properties are listed for information only, and are not to be considered as specification requirements. These items are not analyzed on a routine basis.

### Typical Application

- Potable water and wastewater disinfection
- Potable water taste and odor control
- Potable water iron and manganese control
- Food plant process water treatment
- Algae control in cooling water
- Cooling water treatment
- Process water treatment
- Oilfield injection water treatment
- Whitewater paper mill microbial control

Chlorine dioxide is a superior antimicrobial agent and a strong oxidant. Since chlorine dioxide does not hydrolyze in water, its germicidal activity is relatively constant over a broad pH range. Chlorine dioxide is used in antimicrobial applications to control viruses, bacteria and fungi, including such microorganisms as, Giardia Lamblia, Cryptosporidium, E. coli, Staphylococcus aureus, and Salmonella. Chlorine dioxide does not react with organic materials to form trihalomethanes (THMs) nor does it react with ammonia to form chloramines.

Chlorine dioxide is also effective at controlling algae, slime and biofilm found in cooling water, process water, and paper mill whitewater systems. In potable water applications it has been shown to be effective at destroying taste and odors from algae, decaying vegetation, odor-producing phenolic compounds, mercaptans, and disubstituted organic sulfides.

Chlorine dioxide is also effective at oxidizing soluble forms of iron and manganese to form precipitates that can be removed through sedimentation and filtration.



## Product Sheet

## Typical Feed Requirements

Technical Solution 18.75 must be used only in conjunction with approved chlorine dioxide generation equipment, which utilizes chlorine gas, or a combination of chlorine solution and/ or muriatic acid, as the activating agent. In general, the chlorine dioxide solution is applied to achieve residual concentrations of 10 mg/L or less for water treatment and from 100-200 mg/L for hard surface treatment.

Because of the variability of demand in water and process systems the dosage of chlorine dioxide which is required to achieve the target residuals, is normally lower for continuous feed systems than for slug or timed feed applications. The minimum acceptable residual for chlorine dioxide, as determined by an approved analytical procedure, is 0.1 mg/L for a minimum one minute contact time.

In all cases, generated chlorine dioxide solution should be applied in such a manner to ensure adequate mixing and minimal volatilization. The water stream to be treated may either be passed directly through the chlorine dioxide generator or treated via side stream injection point. The generation system employed should be in good working order and capable of achieving chlorine dioxide solutions free from chlorine contamination. Residual determination procedures should be substantiated methods and should also be specific for chlorine dioxide or used in systems where no chlorine contamination is possible. Do not add Technical Solution 18.75 directly to process water.

For additional treatment information, including dosage specific to your application, please contact your Siemens representative.

## Storage and Handling

Technical Solution 18.75 is a registered biocide precursor with the United States Environmental Protection Agency (No. 5382-44) and must be used and handled within the limits of the label instructions. See product label for additional information.

Store in a cool, dry, well-ventilated place away from heat, cold, chlorine, combustible or other readily oxidizable materials, reducing agents, solvents, sulfur containing compounds, and/or acids. Do not store at temperatures above 100°C (212°F). Do not expose to direct sunlight or ultraviolet light. Always use care when opening containers and keep tightly closed when not in use. Do not reuse containers.

Technical Solution 18.75 is corrosive. Do not get in eyes, or on skin or clothing. Do not taste or swallow. Do not handle with bare hands. Use only thoroughly clean, dry utensils when handling. Avoid breathing fumes. This product becomes a fire hazard if allowed to dry. Remove and wash contaminated clothing to avoid fire.

See Material Safety Data Sheet for additional safety and handling information before storing or handling Technical Solution 18.75.

## Packaging

Technical Solution 18.75 is available in 15-gallon carboys, 55-gallon drums, totes, and in bulk quantities. For further information, please contact your Siemens representative.

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Literature No.: WT.085.271.002.UA.PS.1208  
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