Tank Disinfection Techniques

There are two techniques to disinfect a tank: **5% Tank Filled** and **100% Tank Filled**.
Each method requires a different concentration to disinfect a the tank.
Make sure the liquid Sodium Hypochlorite concentration is 10% and the box is new
and has not been store in the heat for months which degrades its strength.

Liquid Sodium Hypochlorite
10% Concentration
Home Depot SKU # 346275

Tank 5% filled

1. Fill the Tank with **at least 5%** water
2. Create a **50 mg/L** solution in the Tank - use the formula below.
3. Hold for at least **6 hours**.
4. Fill the tank to overflow with chlorinated water.
5. Hold for **24 hours** (contact time)
6. Drain mixture to the land (not into the System)
7. Refill Tank with clean water
8. Ensure the water is drinkable by measuring the Chlorine Residual to be less than 2 mg/L using DPD meter
9. Take Coliform sample and wait for good results before placing Tank into service.

For every **1000 gallons** in the Tank
Use **0.5 gallons** of Sodium Hypochlorite at 10% concentration to create a **50 mg/L** residual.

Tank 100% filled

1. Fill fill Tank to **100% full** with water
2. Create a **10 mg/L** solution in the Tank - use the formula below.
3. Let sit for **24 hours** (contact time)
4. Drain mixture to the land (not into the System)
5. Refill Tank with clean water
6. Ensure the water is drinkable by measuring the Chlorine Residual to be less than 2 mg/L using DPD meter
7. Take Coliform sample and wait for good results before placing Tank into service.

For every **10,000** gallons in the Tank
Use **1 gallon** of Sodium Hypochlorite at **10% concentration** to create a **10 mg/L** residual.

Take Coliform sample and wait for good results before placing Tank into service.

Vetted by Jeff
Treatment Specialist
Otay Water District Sep 2023

The Math

Known

Tank Water Volume = 10,000 gallons
Sodium Hypochlorite = 10%
Desired Concentration = 10 mg/L

$$\frac{10 \text{ mg/L} \quad | \quad 1\%}{10,000 \text{ mg/L}} = 0.001\%$$

(same as 10 mg/L)

For every **10,000** gallons in the Tank
Use **1 gallon** of Sodium Hypochlorite at **10% concentration**
To create a **10 mg/L** residual.

Unknown

Volume Hypochlorite (amt to add)

$$C_1 * V_1 = C_2 * V_2$$

$$V_1 = \frac{C_2 * V_2}{C_1}$$

$$V_1 = \frac{0.001\% * 10,000}{10\%}$$

$$V_1 = 1.0 \text{ gallons of Sodium Hypochlorite}$$

Known

Tank Water Volume = 1000 gallons
Sodium Hypochlorite = 10%
Desired Concentration = 50 mg/L

$$\frac{50 \text{ mg/L} \quad | \quad 1\%}{10,000 \text{ mg/L}} = 0.005\%$$

(same as 50 mg/L)

For every **1000 gallons** in the Tank
Use **0.5 gallons** of Sodium Hypochlorite at 10% concentration
To create a **50 mg/L** residual.

Unknown

Volume Hypochlorite (amt to add)

$$C_1 * V_1 = C_2 * V_2$$

$$V_1 = \frac{C_2 * V_2}{C_1}$$

$$V_1 = \frac{0.005\% * 1000}{10\%}$$

$$V_1 = 0.5 \text{ gallons of Sodium Hypochlorite}$$