

Disinfecting a Well:

A chlorine concentration of five parts per million (ppm) is sufficient for routine disinfection; a heavily contaminated supply may require up to 50 ppm for complete disinfection. See Table 1 for a listing of various chlorine compounds that shows the amount of material ordinarily required to disinfect 1000 gallons of water.

If a liquid compound is used the required amount should be mixed in one or two gallons of water and poured into the well or cistern. If possible, the water should be stirred to aid distribution of the disinfectant. This may be accomplished by re-circulating the water back into the well with the use of a garden hose or other method of conveyance. After the chlorine compound has been added to the well or cistern, open all faucets and flush all toilets until you smell chlorine. This will disinfect the distribution lines. Let chlorine stand in system for at least four (4) hours or preferably overnight. Again, open all faucets and allow the water to run until no chlorine odor is detected. When the chlorine residual is four (4) ppm, the water is safe for consumption.

When disinfecting a deep well, there is a possibility that liquid or powdered material will not reach the bottom of the well in sufficient quantities to be effective. Calcium hypochlorite in tablet form, which will sink to the bottom of the well before dissolving, is preferable in this case. If the well has been flooded or if tests indicate heavy contamination enough chlorine material should be added to the well water to establish a chlorine concentration of 50 ppm. The well can be pumped to reduce the chlorine content to a level suitable for drinking (5 ppm) after twelve hours.

If surface drainage or shallow underground water can enter the well, disinfection provides only temporary protection. To permanently safeguard the supply, the well should be reconstructed to protect against further contamination.

Table 1

Material	% Chlorine in material	Amount to add per 1000 gallons to produce 50 ppm chlorine	Amount to add per 1000 gallons to produce 5 ppm chlorine
Sodium Hypochlorite (Clorox® or Purex®)	5.25	1 gallon	1 1/2 cups
Sodium Hypochlorite (commercial strength)	12	7 cups	3/4 cups
Chlorinated Lime	25	3 1/2 cups	5 Tablespoons
Calcium Hypochlorite (B.K. Powder)	50	1 1/2 cups	2 1/2 Tablespoons
Calcium Hypochlorite (H.T.H., Perchloron)	70	1 1/8 cups	2 Tablespoons

Note: 16 Tablespoons = 1 cup

For materials not listed above, the percent available chlorine will be found on the label under "Active Ingredients."

(continued)

Table 2

Circular Well or Cistern

Diameter of well in Feet	Gallons of Water per foot depth
½	1 ½
1	6
2	24
3	53
4	94
5	147
6	212
7	288
8	376
9	472
10	587
11	710
12	846

For a Rectangular or Square Cistern, use the formula: Length x width x water depth x 7 ½ = gallons

Examples of Calculations

Example 1: Circular Well

To disinfect a well that measures one foot across and contains 250 feet of water.

First, find the number of gallons of water in the well from Table 2 above.

6 (gallons of water per foot) x 250 (feet) = 1500 gallons total

Second, determine the material to be used for disinfection and from Table 1 find the amount of material required for each 1000 gallons of water.

For laundry bleaches: 1 gallon is required for every 1000 gallons of water, and there are 1500 gallons of water in the well. Therefore, 1 ½ gallons of laundry bleach is required to disinfect this well.

For more information from St. Charles County Department of Public Health, please call (636) 949-1800 or visit: www.sccmo.org/PublicHealth.

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