

## What is MMS and How to Make it?

### MMS is actually a 22.4% Sodium Chlorite Solution

The 28% MMS Formula you see mentioned on some sites and literature is in fact a 22.4% Sodium Chlorite Solution, if it's made properly.

This is due to the fact that 28% of the total solution is Sodium Chlorite Powder by weight. The original Formula was created using 80% sodium chlorite powder. When 80% Sodium Chlorite powder is used to make the MMS, the resulting amount of actual sodium chlorite in the solution is 22.4%. The water weight is 72%, and the remaining 5.6% is mostly common salt, (used as a stabilizer), and small amounts of other stabilizers and inert ingredients.

Therefore when one makes MMS, the actual goal is 22.4% Sodium Chlorite by weight in solution.

### Variance

Variance between batches often occurs in the case of home made sodium chlorite solutions and also many sites that sell it. There are two primary reasons for this:

In many cases the manufacturer of the MMS does not have a certificate of analysis on their raw sodium chlorite powder or flake. The fact is in most cases 80% Sodium Chlorite is usually not 80%, by as much as a few percent.

Other reasons may be improper math, or misinformation from another source.

### **A simple formula to make MMS**

#### Just use the number 2.57

Multiply the amount of Sodium Chlorite you want to use by 2.57 and the answer will be how much water you need. (weight)

$$454 \times 2.57 = 1166.78 \text{ (1167)}$$

Divide the amount of water you want to use by 2.57 and this is how much Sodium Chlorite you need. (weight)

$$1167 \div 2.57 = 454$$

## How to Make MMS

### Preparation and Mixing

Make sure your work area is clean, and clear. You should have your scales, bowls, and utensils cleaned and rinsed with distilled water. Leave the Sodium Chlorite powder sealed until you weigh it, and seal it back up as soon as you are done.

1. Weigh your water according to the chart below for the amount you want. The water may be warmed to 110°F for easier solubility, but room temperature is fine. After weighing the water add it to your bowl or mixing vessel.
2. Weigh out your Sodium Chlorite Powder. After you have the right weight, close the lid on the Sodium Chlorite Powder that is left to avoid contamination, and light exposure.
3. Slowly add the sodium chlorite powder to the water, stir until completely dissolved. The mixture may appear cloudy at first, this is normal, and it should clear up, by the time it is all dissolved. Your final solution should be clear with a yellowish tint.
4. Cover the MMS solution and place in a dark place, allow it to sit for at least 6 hours. You may see some sediment at the bottom in most cases, this is normal. There may also be an oily film on the top, depending on the inert ingredients in the Sodium chlorite.
5. We want to skim the film off as best we can, and then draw, or pour off the MMS without getting sediment. At this point, it is ready to filter.

Filtering is an optional step, if the instructions above are followed, the MMS is ready for use. A 1 micron screen system made with non-organic materials is perfect, and will stop most sediment issues. DO NOT USE WHITE COFFE FILTERS. Many contain acid, and can actually degrade the MMS over time.

Steve Pardee 13 July 2012

<http://g2cforum.org/index.php/list/mms-technical-talk/19841-how-to-make-mms?limitstart=0>

## WEIGHTS AND MEASURES FOR MAKING MMS FROM 80% TECHNICAL GRADE SODIUM CHLORITE

### FOR 80% SODIUM CHLORITE

**There will be some loss due to removing any sediment.**

#### METRIC MEASUREMENTS

80% SODIUM CHLORITE POWDER	DISTILLED WATER	MMS (by weight)	(by volume)
42.7 grams	109.8 grams	152.5 grams	125 ml
85.4 grams	219.6 grams	305 grams	250 ml
170.8 grams	439.2 grams	610 grams	500 ml
341.6 grams	878.4 grams	1220 grams	1 liter

#### STANDARD ENGLISH MEASUREMENTS

80% SODIUM CHLORITE POWDER	DISTILLED WATER	MMS (by weight)	(by volume)
1.51 ounces	3.87 ounces	5.38 ounces	4.23 fl oz
3.02 ounces	7.74 ounces	10.76 ounces	8.45 fl oz
6.04 ounces	15.48 ounces	21.52 ounces	16.90 fl oz
12.08 ounces	30.96 ounces	43.04 ounces	33.8 fl oz

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### FOR 90% SODIUM CHLORITE POWDER

**There will be some loss due to removing any sediment.**

#### METRIC MEASUREMENTS

90% SODIUM CHLORITE POWDER	DISTILLED WATER	MMS (by weight)	(by volume)
38 grams	114.5 grams	152.5 grams	125 ml
76 grams	229 grams	305 grams	250 ml
151.9 grams	458.1 grams	610 grams	500 ml
302.8 grams	916.2 grams	1220 grams	1 liter

#### STANDARD ENGLISH MEASUREMENTS

90% SODIUM CHLORITE POWDER	DISTILLED WATER	MMS (by weight)	(by volume)
1.34 ounces	4.04 ounces	5.38 ounces	4.23 fl oz
2.68 ounces	8.08 ounces	10.76 ounces	8.45 fl oz
5.36 ounces	16.16 ounces	21.52 ounces	16.90 fl oz
10.72 ounces	32.32 ounces	43.04 ounces	33.8 fl oz

### What is Sodium Chlorite

Sodium Chlorite is a chemical salt comprised of 1 sodium atom (cation), and a chlorite molecule comprised of 1 chlorine atom and 2 oxygen atoms (anion).

It is manufactured for the generation of Chlorine Dioxide gas, for various uses including many things from sewage odor control, to cleaning food equipment, to keeping cut flowers fresh, to controlling biofilm. All these various uses have one thing in common; microorganisms are being killed.

The problem is ... it's not legal to ship Chlorine Dioxide in any manner that doesn't involve huge costs and risks. Because of this, Sodium Chlorite is manufactured, buffered, and transported for the on site generation of chlorine dioxide.

### How is Sodium Chlorite Made?

In simple terms, Sodium Chlorate is activated (with a strong acid, or chlorine) to produce Chlorine Dioxide. Lye (Sodium Hydroxide) reacts with chlorine dioxide and then reduced with Hydrogen Peroxide. The result is Sodium Chlorite.

### What are the inert ingredients in Sodium Chlorite

The inert ingredients in any given batch of Sodium Chlorite can vary, but will usually be comprised of salts such as Sodium Chloride, Sodium Carbonate, Sodium Sulfate, Sodium Chlorate, and Sodium Hydroxide. The percentage of these ingredients vary between manufacturers, and there are also differences in lots produced by a manufacturer. Some of the ingredients such as Sodium Chlorate and Sodium Hydroxide are by-products from the manufacturing process. Others are added as stabilizers. Your supplier should be able to provide you with a list of all the ingredients.

### Are there different grades of Sodium Chlorite?

All of the Genesis II Church literature on MMS deals exclusively with 80% Technical Grade Sodium Chlorite unless otherwise stated.

This is without a doubt the easiest and safest type to source. However, there are occasions where only 90% is available, particularly in less developed areas where you take what you get.

### What about 99%+ ACS Grade?

While the fact that it contains no inert ingredients may seem attractive, this grade of sodium chlorite is quite dangerous to handle. At purities approaching 90%, Sodium Chlorite becomes unstable. It can be percussively explosive, cause organic material to spontaneously combust, and it is reactive to sunlight.

The inert salts added to the 80% and 90% Sodium Chlorite act as buffers and stabilize it. 80% is easy to store, handle, and is more forgiving to light, and temperature.

I would strongly discourage anyone without knowledge and experience with this chemical to avoid procuring 99% Sodium Chlorite.

*What is the difference between Sodium Chlorite Powder and Flake*

The manufacturer and/or the final application. Either one can make MMS Solution and Jim Humble has stated that he has used both, and both work just fine.

*How long can you store Sodium Chlorite*

With proper storage, 80% Technical Grade Sodium Chlorite can last over 20 years. It should be kept in a dry, dark area, with no temperature extremes.

The dry Sodium chlorite may be stored in HDPE, galvanized steel, or stainless steel containers. Keep in mind this **MUST** be kept dry.

You can also freeze Sodium Chlorite and at low temperatures, the shelf life is virtually indefinite.

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<http://g2cforum.org/index.php/list/mms-technical-talk/19838-sodium-chlorite-faq>