

Protocol 115 To Eliminate Viruses

Protocol (P115V) by Scott McRae

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This PDF file contains information on how to eliminate viruses using chlorine dioxide (CLO₂) based on a study showing the effectiveness for a particular method.

The method described is somewhat similar to using Clara's 6 and 6 Protocol.

This method also explains why Protocol 115 has been successful for many people who have used it. (See newer [Protocol 115 Plus](#))

Also note that there are two ways to use Protocol 115.

The first way is taking 8 consecutive doses in a 2 hour period, every 15 minutes.

The second way is also taking 8 doses in two hours, plus 6 more doses at 1 dose each consecutive hour for a total of 14 doses for the day.

You can vary the amount of CLO₂ per dose. Start low and work up, as usual. If dosing is the same for each method, then the first method (dosing every 15 minutes for 2 hours) will provide more CLO₂ than hourly dosing for 6 hours. You can increase hourly dosing for the additional 6 hours if desired.

The first way is based on the idea of keeping the amount of CLO₂ in your blood supply at or above a certain concentration.

The addition of hourly doses for another 6 hours is based on Jim Humble's idea of keeping CLO₂ in the body as long as possible and from experience.

If the first method solves your problem, then you don't need to add the additional 6 hours of dosing. If your problem is not resolved, then use both methods.

(Answer to a MMS forum question - 15 December 2015)

NOTES: It is possible that results from studies similar to the Japanese study linked to on the next page, could be true for other pathogens besides viruses.

Both CDS and CDH can be used with this protocol. See dosing chart on page 4 and charts on the last page of this PDF file which contain equivalent dosing for external and internal use.

Intravenous injections might be a more effective procedure than oral such as this protocol. That idea will be discussed in another upcoming Protocol. (18 March 2019)

Here's something I recently posted on my [The Ebola Cures Facebook Group](#) page:

I think we can use the following study to help us to get an idea of how much CLO₂ a person should get into their blood for it to be effective to kill pretty much any virus - Ebola included.

www.jstage.jst.go.jp/article/bio/15/2/15_2_45/_pdf

Basically the study says that you need 10 ppm for 15 to 180 seconds to inactivate 99.99% or more of the viruses in a clean, uncontaminated medium. So using this 10 ppm as a guide for what is also needed in our blood and taking what we know about the amount of CLO₂ per drop of MMS (22.4% sodium chlorite in a water solution), which is also the amount of CLO₂ within 1ml of CDH, and which is approximately 6000 ppm per drop, we can roughly calculate how many drops of MMS/Sodium Chlorite/ ml of CDH are needed using a ppm dilution calculator found here:

www.endmemo.com/bio/dilution.php

Using the last calculator on the page at the above link, plug in the following numbers for an average sized person which should have just about 5 liters of blood (or you can use 7% of a person's body weight as a guide to the amount of blood they have within their body - remembering that each liter of blood will weigh approximately 1 kilo).

So for the "stock solution - concentration" field in the above dilution calculator, (on the top line and on the left hand side), put 6000 ppm because that's what the ppm of CLO₂ is approximately in 1ml of fully activated CDH or 1 fully activated drop of MMS/Sodium Chlorite in 1ml of water.

Then for the next field to the right, "volume", leave it blank but set the unit to "ml".

Then in the field named, "dilute solution" which is below and to the far left, enter 10 ppm because that's the ppm that we want in our blood to inactivate pretty much any virus.

Then to the right of that enter 5000ml which is the amount of blood the average person has.

Then click "Calculate" and it will tell you the number of drops you would need to take of MMS or ml of CDH. In this case it comes out to 8.33 drops of MMS or 8.33ml of CDH.

Lastly, since we know there are going to be losses of the CLO₂, we have to compensate for that. So if we say there is probably going to be at least a 50% loss of CLO₂ as it goes through the stomach and into the blood, we would simply double the number of drops or ml to consume to compensate for that loss.

Keep in mind that our blood only needs to be at 10 ppm of CLO₂ for about 3 minutes in order for 99.99% of the viral particles to be inactivated.

So, I think this can be a great tool for us to get some kind of an idea of how much CLO2 we may need to consume to help our bodies cure themselves of Ebola and basically any other viral disease. Again, all we need to do is get our blood at about 10 ppm of CLO2 for about 3 minutes.

Since there may be even more than a 50% loss of CLO2 on it's way to our blood, one way I've devised for basically saturating our bodies with CLO2 as much as possible is to take a dose every 10 to 15 minutes for one to two hours. One time by doing this, I was able to take 36ml of CDH in just 2 hours. I think I was pretty saturated and probably got myself over that 10 ppm for 15 to 180 second threshold.

By the way, I didn't have ANY adverse reactions or side effects to taking that much CDH in such a short period of time. The same goes for another time when I took 108ml of CDH over a 7 hour period.

One more very important observation about this study. You'll notice that the table shows and the authors mention the fact that the amount of time DOES NOT MATTER if the concentration isn't high enough. So, even if we dose all day long, 12 hours a day - if the ppm of CLO2 in our blood doesn't get high enough - to 10 ppm, we're not going to be able to get rid of the virus. This may be the reason that I myself haven't been able to get over colds as quickly as it seems I should have been able to, and I've heard the same report from others.

This very important piece of information makes it clear to me that it's not so much how long we dose during a day but the quantity that we can get into our blood over a very short period of time.

This is basically the way MMS has been used to cure Malaria. With malaria, the people typically get one LARGE dose of 18 drops of MMS all in 1 cup and taken all at one time. So what happens when you do that? Using the calculator, we can see that you get a potential of 21.6 ppm in your 5 liters of blood - all at one time! Now even if only 50% of the CLO2 made it through to actually be in your blood, you'd still be higher than 10 ppm and for probably longer than 180 seconds. Case closed - you're cured!

Here's a dosing table I made for Jalloh to use in Sierra Leone - he's going to start dosing this way today.

Take care,

Scott McRae

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Dosing at 5 to 10 Minute Intervals for ~30 Minutes to Achieve 10 ppm Blood Saturation. Dosing Based on Blood Volume and Assumes 50% CLO₂ Loss. (CDS = 3000 ppm) (Start Dosing at Least 1 Hour Before Eating) (CDH must be the original McRae-Lackney recipe)

All doses to be added to dilution water before ingestion, usually about 120ml.

Body Weight in Kg	Blood Volume in Liters	CDH ml every 10 minutes	CDH Total In 4 Doses	CDS ml every 5 Minutes	CDS Total In 8 Doses
5	0.35	0.5	2	0.5	4
10	0.70	1.0	4	1.0	8
15	1.05	1.0	4	1.0	8
20	1.40	1.5	6	1.5	12
25	1.75	1.5	6	1.5	12
30	2.10	2.0	8	2.0	16
35	2.45	2.5	10	2.5	20
40	2.80	2.5	10	2.5	20
45	3.15	3.0	12	3.0	24
50	3.50	3.0	12	3.0	24
55	3.85	3.5	14	3.5	28
60	4.20	3.5	14	3.5	28
65	4.55	4.0	16	4.0	32
70	4.90	4.5	18	4.5	36
75	5.25	4.5	18	4.5	36
80	5.60	5.0	20	5.0	40
85	5.95	5.0	20	5.0	40
90	6.30	5.5	22	5.5	44
95	6.65	6.0	24	6.0	48
100	7.00	6.0	24	6.0	48
105	7.35	6.5	26	6.5	52
110	7.70	6.5	26	6.5	52
115	8.05	7.0	28	7.0	56
120	8.40	7.0	28	7.0	56
125	8.75	7.5	30	7.5	60



With the higher doses, you may experience some throat irritation due to high levels of chlorine dioxide (CLO₂). A way to reduce the irritation is to use the Mouth-Holding-Method (MHM).

The MHM is simply holding CDS or CDH in your mouth for a period of time. The author of this method, MMSforum member 'gefeu2' (Gerhard) explains how it works:

"CLO₂ will be administered perlingually by absorption through the oral mucosa and tongue & cheek interior surfaces. Also, sublingually under the tongue and sublingual glands."

By following the MHM, there will be less CLO₂ to bother your throat when you eventually swallow the dose of CDS or CDH.

Note

Evaluation of the Antiviral Activity of Chlorine Dioxide and Sodium Hypochlorite against Feline Calicivirus, Human Influenza Virus, Measles Virus, Canine Distemper Virus, Human Herpesvirus, Human Adenovirus, Canine Adenovirus and Canine Parvovirus

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We evaluated the antiviral activity of a chlorine dioxide gas solution (CD) and sodium hypochlorite (SH) against feline calicivirus, human influenza virus, measles virus, canine distemper virus, human herpesvirus, human adenovirus, canine adenovirus and canine parvovirus. CD at concentrations ranging from 1 to 100 ppm produced potent antiviral activity, inactivating $\geq 99.9\%$ of the viruses with a 15 sec treatment for sensitization. The antiviral activity of CD was approximately 10 times higher than that of SH.

Key words : Virus inactivation / Antiviral activity / Chlorine dioxide / Sodium hypochlorite.

In recent years, the high incidence of norovirus infections in households, schools and nursing institutions for the elderly (Tsang et al., 2008) and the prevalence of measles in high schools (Sasaki et al., 2007) have become an increasing problem in Japan. In particular, norovirus can be transmitted orally, and it takes only a small amount of virus to cause acute gastroenteritis (Lindesmith et al., 2003) and sometimes even death among the elderly.

It is very important to develop safe and effective **antiviral disinfectants**. We evaluated the antiviral activity of a chlorine dioxide disinfectant, “chlorine dioxide gas solution” (long-life type, hereinafter referred

to as CD), and sodium hypochlorite (SH) against feline calicivirus (FCV, a surrogate for norovirus), **human influenza virus (IFV)**, **measles virus**, canine distemper virus (CDV), human herpesvirus (HHV), human adenovirus (HAd), canine adenovirus (CAd) and canine parvovirus (CPV).

Effective antiviral disinfectants are needed to prevent infections of these highly contagious viruses. SH, a disinfectant commonly used against norovirus (Bruce et al., 1985), has the drawbacks of generating trihalomethane (Patterson et al., 1995; Wistrom et al., 1996), possessing an irritating odor, and undergoing a decrease in concentration during storage.

CD does not generate trihalomethane (Don, 1998), and the disinfecting effect of CD is less affected by pH compared to chlorine, has a less irritating odor

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and has a superior concentration stability during storage.

The viruses, strains and cells used in the present study were as follows: FCV: F4, CRFK; IFV: New Caledonia/20/99, Chick embryo; Measles virus: Edmonston, Vero/hSLAM; CDV: Onderstepoort, Vero; HHV-1: KOS, CRFK; HAd-2: wild, A549; CAAd-2: Vaccine, BK; CPV: Y-I, CRFK.

The disinfectants studied were CD (Cleverin™, Taiko Pharmaceutical Co., Ltd., Osaka, Japan) and SH (Wako Pure Chemical Industries Ltd., Osaka, Japan).

All viruses except for IFV were prepared as follows. Cells cultured in Eagle's minimum essential medium (MEM) containing 10% fetal bovine serum (FBS), which was used as a growth medium, were inoculated with each virus and incubated at 37°C until a cytopathic effect (CPE) was observed. The virus culture fluid was subjected to three freeze-thaw cycles and then purified and concentrated. Regarding IFV, after the virus culture fluid was inoculated into the chorioallantoic cavity of 10-day-old embryonated chicken eggs and incubated for 3 days at 34°C, the chorioallantoic fluid was harvested.

Virus culture fluids were subjected to low-speed centrifuge for cell removal, and then concentrated and purified through a 20% sucrose cushion. To the resultant sediment, 2 mL of distilled water was added, and the virus culture was ultimately concentrated to 500 times its original concentration. Virus suspensions were sterile-filtered through a 0.45 μm-pore size membrane filter, and the filtrate was stored frozen at -80°C until ready for use.

Drug treatment of viruses was performed as follows. Each drug was diluted with sterilized distilled water for concentration adjustment. To 240 μL of each drug at each concentration (1,250 ppm, 125 ppm, 12.5 ppm, 1.25 ppm, 0.125 ppm and 0.0125 ppm), 60 μL of virus filtrate was added and stirred for 15, 30, 60, 120 and 180 seconds for sensitization. Then, from each reaction solution, 50 μL of virus was harvested, and 450 μL of 5 mM sodium thiosulfate was added to neutralize the disinfectant. As virus controls, viruses treated with distilled water instead of diluted drugs were used. Tenfold serial dilutions of neutralized viruses were prepared with MEM to determine the infectivity titer (50% tissue culture infective dose [TCID₅₀]). The concentration of SH and CD were estimated by the DPK kit (type CN-66F, HACH Com. Iowa, USA) and spectrophotometric method (Sjestrem and Disa, 1976), respectively.

All examinations were carried out in biosafety level 2 laboratories.

Infectivity titer determination for FCV, IFV, measles

virus, CDV, HHV-1, HAd-2, CAAd-2 and CPV was carried out as follows. Host cells for each virus plated in a 96-well microplate (100 μL/well) were incubated for 3 days at 37°C in a 5% carbon dioxide incubator. The cells were then washed with MEM, and inoculated with the diluted virus (4 wells for each dilution, 50 μL/well). After 60 min of viral adsorption onto the cells at 37°C in a 5% carbon dioxide incubator, the cells were washed with MEM twice. After incubation for 5 days at 37°C with an addition of 100 μL of MEM in a 5% carbon dioxide incubator, TCID₅₀/50 μL was calculated by microscopic examination of CPE. Antiviral activity (%) was calculated as follows: antiviral activity (%) = {1 - (infectivity of each treated virus/virus control)} × 100

Table 1 shows the reduction of infectivity of various viruses by the CD and SH treatment.

Against FCV, CD exhibited no measurable effect with 1.0 ppm treatment for 180 sec, but produced antiviral activity against ≥ 99.99% of the virus with 10 ppm treatment for 15 sec. SH had no antiviral effect at 10 ppm, but showed antiviral activity against ≥ 99.99% of the virus at 100 ppm treated for 15 sec.

Against IFV, CD produced antiviral activity against ≥ 99.99% of the virus with 1.0 ppm treatment for 15 sec. On the other hand, antiviral activity against 99.99% of the virus was obtained for SH with 100 ppm treatment for 15 sec.

Against Measles virus, antiviral activity against ≥ 99.99% of the virus was observed at 10 ppm for 30 sec or at 100 ppm for 15 sec with CD treatment, and at 100 ppm for 30 sec or at 1000 ppm for 15 sec with SH treatment.

Against CDV, antiviral activity for 99.99% of the virus was demonstrated at 10 ppm for 15 sec for CD treatment and at 100 ppm for 30 sec with SH treatment.

Against HHV-1: CD produced antiviral activity against 99.9% of the virus with 10 ppm treatment for 15 sec, while SH treatment at 10 ppm for 180 sec resulted in antiviral activity against 99% of the virus.

Against HAd-2 and CAAd-2, antiviral activity of CD was observed against 99.99% of the virus with 10 ppm treatment for 15 sec, whereas SH required a concentration ten times higher than that of CD to produce an equivalent effect.

However CPV was resistant to both disinfectants; antiviral activity against ≥ 99.99% of this virus was obtained at 10 ppm for 180 sec or at 100 ppm for 15 sec with CD treatment in comparison to SH treatment at 100 ppm for 120 sec.

The present study examined the antiviral activity of CD and SH against RNA viruses such as FCV, IFV, measles virus and CDV, as well as DNA viruses such



TABLE 1. Reduction of infectivity of various viruses by the treatment with CD and SH

Virus	Disinfectants	Concentration ppm	Virus control	Treatment (seconds)					
				15	30	60	120	180	
FCV	Chlorine dioxide	0.1	6.75	6.75	6.75	6.75	6.75	6.75	6.75
		1.0	6.75	6.75	6.75	6.75	6.75	6.75	6.5
		10	6.75	1.5	1.0	1.0	0.75	0.75	0.75
		100	6.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Sodium hypochlorite	1	6.75	6.75	6.75	6.5	6.5	6.5	6.5
		10	6.75	6.5	6.5	6.5	6.25	6.25	6.25
		100	6.75	0.75	0.75	0.75	0.75	0.75	0.75
		1000	6.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IFV	Chlorine dioxide	0.1	6.5	4.75	4.5	4.0	3.75	3.75	
		1.0	6.5	2.25	2.25	2.0	1.5	1.5	
		10	6.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Sodium hypochlorite	100	6.5	<0.5	<0.5	<0.5	<0.5	<0.5	
		1	6.5	5.5	5.5	5.5	5.5	4.75	
		10	6.5	3.5	3.5	3.5	2.75	2.75	
Measles virus	Chlorine dioxide	1.0	5.5	4.5	4.25	4.0	4.0	3.75	
		10	5.5	2.0	<0.5	<0.5	<0.5	<0.5	
		100	5.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Sodium hypochlorite	1.0	5.5	5.0	4.75	4.75	4.75	4.75	
		10	5.5	4.5	4.5	3.75	3.75	3.75	
		100	5.5	4.75	<0.5	<0.5	<0.5	<0.5	
CDV	Chlorine dioxide	0.1	5.5	5.5	5.5	5.5	5.5	5.5	
		1.0	5.5	2.75	1.75	1.75	1.75	1.75	
		10	5.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Sodium hypochlorite	100	5.5	<0.5	<0.5	<0.5	<0.5	<0.5	
		1.0	5.5	5.5	5.5	5.5	5.5	5.5	
		10	5.5	5.5	5.5	5.5	5.5	5.5	
HHV-1 (HSV-1)	Chlorine dioxide	0.1	5.0	4.25	4.0	3.75	3.75	3.75	
		1.0	5.0	3.75	3.50	3.0	3.0	3.0	
		10	5.0	1.5	1.25	1.25	1.25	1.25	
	Sodium hypochlorite	0.1	5.0	4.5	4.25	4.25	4.25	4.25	
		1.0	5.0	4.75	4.5	4.25	4.25	4.25	
		10	5.0	3.75	3.75	3.25	3.0	3.0	
HAd-2	Chlorine dioxide	0.1	6.5	6.0	6.0	6.0	6.0	6.0	
		1.0	6.5	5.0	5.0	5.0	5.0	5.0	
		10	6.5	1.5	1.5	1.5	1.5	1.5	
	Sodium hypochlorite	100	6.5	<0.5	<0.5	<0.5	<0.5	<0.5	
		1.0	6.5	6.0	6.0	6.0	6.0	6.0	
		10	6.5	5.5	5.5	5.5	5.5	5.5	
CAAd-2	Chlorine dioxide	0.1	6.5	6.0	6.0	6.0	6.0	6.0	
		1.0	6.5	6.0	6.0	6.0	6.0	6.0	
		10	6.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Sodium hypochlorite	100	6.5	<0.5	<0.5	<0.5	<0.5	<0.5	
		1.0	6.5	6.0	6.0	6.0	6.0	6.0	
		10	6.5	6.0	6.0	6.0	6.0	6.0	
CPV	Chlorine dioxide	0.1	4.5	4.25	4.5	4.5	4.5	4.5	
		1.0	4.5	4.5	4.5	4.5	4.5	4.5	
		10	4.5	3.25	2.25	2.0	1.0	<0.5	
	Sodium hypochlorite	100	4.5	<0.5	<0.5	<0.5	<0.5	<0.5	
		0.1	4.5	4.5	4.5	4.25	4.25	3.75	
		1.0	4.5	4.0	4.0	4.0	4.5	4.5	
		10	4.5	2.75	2.75	2.25	2.0	2.0	
		100	4.5	2.75	2.5	1.0	<0.5	<0.5	

Each value represents the log₁₀ TCID₅₀/50 μL of virus determination

as HHV, HAd-2, CAd-2 and CPV.

Antiviral activity against norovirus was determined using FCV. CD at 10 ppm for 15 sec inactivated \geq 99.99% of the virus, whereas SH required 10 times higher concentrations than CD to produce an equivalent effect. This observation indicates that CD has the potential to be used as a disinfectant against norovirus.

In addition, against other viruses, CD was equivalent to SH in terms of its antiviral activity at 1/10 concentrations.

Treatment with these disinfectants for sensitization at lower concentrations for up to 180 sec was performed; longer durations of treatment were not associated with any increase in antiviral activity. Meanwhile, sensitization at higher concentrations resulted in a more potent antiviral effect as indicated by the infectivity titer, showing that the disinfectant concentration is an important factor for virus inactivation.

CD exhibited antiviral activity in the concentration range from 0.1 to 10 ppm, which was 1/10 that of SH. Having antiviral activity at lower concentrations than SH, CD is expected to be useful as a virus disinfectant.

CD, which has demonstrated antiviral activity and is known to be less likely to generate trihalomethane (Wistrom et al., 1996), is a potent alternative disinfectant to SH (Junli et al., 1997). The CD used in the present study has the advantage of maintaining concentration levels of chlorine dioxide over an extended period. Since chlorine dioxide is also available in gaseous form (Ogata and Shibata., 2008), it can be directly sprayed in wards and laboratories in hospitals, meal preparation rooms in school lunch centers and other places, which may contribute to better prevention of hospital-acquired infections and food poisoning.

In the present study, the antiviral activity of disinfectants was determined under contamination-free conditions. Since it has been reported that contamination of disinfectants with proteins or other foreign materials results in decreased antiviral activity, it will be necessary to assess the antiviral activity using purified virus solutions containing FBS or other appropriate contaminants.

In Europe and the US, the use of chlorine dioxide to disinfect tap water has been implemented (Aleta and Berg, 1986; Lykins et al., 1990). The results of the present study provide an additional support for the use of CD as an antiviral agent; it also has several advantages over SH. Therefore, CD may be used more frequently in the future.

While detailed reports on the mechanisms of SH's antiviral activity are not available to our knowledge,

CD has been reported to produce its antiviral activity by acting on virus nucleic acids and on virus proteins (Li et al., 2002), and by oxidizing amino acids tryptophan and tyrosine (Ogata and Shibata, 2008). In the present study, CD's antiviral activity was observed against both RNA and DNA viruses regardless of the presence/absence of the envelope, which is interesting to clarify the mechanisms of action. The higher antiviral activity of CD compared to that of SH may be attributable to differences in the mechanisms of action.

To confirm the feasibility of CD use in clinical and environmental settings, assessment of the viral growth inhibitory effect of CD under conditions of protein contamination and of the use of CD in aerosol form is necessary.

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CDS, CDH and Protocols

Most Jim Humble health restoration protocols found in his 2016 book, *MMS Health Recovery Guidebook*, have been written using MMS1 as the sodium chlorite solution (SCS) of choice for simplicity for the user who is new to the MMS world. However, both CDS and CDH can be used with many protocols. Equivalent dosing varies depending on where the Sacraments are used; ingested (assuming normal stomach acid) or not ingested. 

For **ingestion** into a normal stomach the following chart gives approximate equivalent doses.

MMS1	CDS*	CDH**	CLO2***
1 drop dose	2.2 ml	1 ml	6.7 mg
2 drops	4.5 ml	2 ml	13.4
3 drops	6.7 ml	3 ml	20.1
4 drops	8.9 ml	4 ml	26.8
5 drops	11.2 ml	5 ml	33.5
6 drops	13.4 ml	6 ml	40.2
7 drops	15.6 ml	7 ml	46.9
8 drops	17.9 ml	8 ml	53.6
9 drops	20.1 ml	9 ml	60.3
10 drops	22.3 ml	10 ml	67
11 drops	24.6 ml	11 ml	73.7
12 drops	26.8 ml	12 ml	80.4

For **non-ingestion** the following chart gives approximate equivalent doses.*

MMS1	CDS*	CDH**	CLO2***
1 drop dose	0.2 ml	0.2 ml	0.67 mg
2 drops	0.4	0.4	1.3
3 drops	0.6	0.6	2.0
4 drops	0.8	0.8	2.7
5 drops	1.0	1.0	3.4
6 drops	1.2	1.2	4.0
7 drops	1.4	1.4	4.7
8 drops	1.6	1.6	5.4
9 drops	1.8	1.8	6.0
10 drops	2.0	2.0	6.7
11 drops	2.2	2.2	7.4
12 drops	2.4	2.4	8.0

*Original 3000 ppm CDS without added MMS.

**McRae-Lackney CDH recipe (4% HCL). Note that shelf life will be 2 weeks. The same recipe made with 2% HCL results in a 2 month shelf life.

***The 6.7 mg CLO2 concentration figure came from a chemist. That is the maximum amount of CLO2 available in a fully activated drop of MMS (22.4% SCS) when 24 drops = 1 ml as defined by Jim Humble about 3 years ago. All testing since then has used 24 drops = 1 ml as a standard.

Non-ingested MMS1 contains about 0.67 mg CLO2 per drop of MMS used to make MMS1 & assumes MMS1 is activated for 20 to 30 seconds using 4% HCL activator. The non-ingested chart assumes that no further MMS activation will occur in MMS1 after the initial 20 to 30 second activation period.

*For non-ingestion dosing with CDS or CDH, multiply a MMS1 dose by 0.2 to find the equivalent amount of CDS or CDH in milliliters. For example, a 20 drop dose of MMS1 x 0.2 = 4 ml of CDS or CDH.

Drop size = 1/24 ml or 0.042 ml.

<http://mmsinfo.org/>