

What makes Solumium completely different from MMS?

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In the last years we have received several letters with the above question, asking for a detailed explanation. We have duly answered those letters, but there may be others with the same question who have not written us. Therefore we have prepared, together with my colleagues, the summary below, to answer the question in a brief but scientifically elaborate way.

I. Antecedent: our road to launching Solumium

Prof. Noszticzius took up the chlorine dioxide topic in the beginning of the nineties while he stayed at the University of Austin (Texas, USA) and have continued it later with his Hungarian colleagues at the Budapest University of Technology and Economy, Institute of Physics. We have started with scientific experiments (and have applied it in oscillating reactions) and the results have been published in international scientific journals. The idea of a practical application has been raised only later, after an interesting discovery. That finding was the base of our patent application for producing hyperpure chlorine dioxide, which was submitted in 2006. It is always a long way from invention to receiving a patent, but finally we have received the patent for Europe in 2012, and for the US and China in 2013.[1]

Solumium Ltd. [2] was founded by Prof. Noszticzius and his son in 2007. Our products, Solumium Dental and Oral, containing high purity chlorine dioxide, have been available on the market since 2008. We have published an article in „Természet Világa ("World of Nature"- a Hungarian Scientific Magazine), with the title „Universal weapon against microbes? Hyperpure chlorine dioxide” [3] Then came an important discovery of us giving a theoretical background for the experimental observation that it is not harmful for humans to drink certain chlorine dioxide solutions which are capable of killing microbes within seconds. We have first published that discovery in the open access journal Plos One, in 2013 [4].

II. Differences between Solumium and MMS

A short explanation:

1./ the chemical composition of the two products is different: while Solumium's active ingredient is hyperpure chlorine dioxide (ClO_2), and nothing else, the main ingredient in MMS is a completely different substance: sodium chlorite (NaClO_2). ClO_2 is a water soluble, greenish yellow gas with a characteristic smell. Its aqueous solution is also greenish yellow. It has no electric charge and dissolves in water without any chemical reaction. NaClO_2 is a white crystalline solid with no smell. In aqueous solution it dissociates to Na^+ ions (sodium ions with a positive electric charge), and to ClO_2^- ions (chlorite ions with a negative electric charge).

2./ the way the two products are applied, and the way they work is different, too: Solumium is applied externally, while MMS is meant to be swallowed.

A more detailed explanation:

1./ Solumium is hyperepure chlorine dioxide dissolved in water, with nothing else present. MMS is described by its makers as also being chlorine dioxide, after having 'activated' the sodium chlorite with a kind of acid. So to the casual observer Solumium and MMS may at first seem similar. But the main ingredient in activated MMS is sodium chlorite, and it contains only very little chlorine dioxide. Although the reaction of sodium chlorite and the acid does result in chlorine dioxide, we have to be aware that forming of a significant quantity of chlorine dioxide requires a longer period of time. According to Jim Humble's MMS recipe (chapter IV.), after adding citric acid or acetic acid to sodium chlorite during the stipulated 3 minutes waiting period a small amount of chlorine dioxide is in fact formed, but the majority of sodium chlorite (at least 90%) is not transformed at all. According to Jim Humble the chlorine dioxide forming process continues inside the body – but this is questionable (chapter IV.). It is not questionable, however, that the swallowed sodium chlorite will be absorbed in the stomach and can thus become toxic. Solumium, on the other hand, does not contain sodium chlorite or any other impurity, as our invention applies a selective membrane which prevents chemical components to permeate through the membrane, with the exception of chlorine dioxide.

2./ Solumium is a locally acting disinfectant for the skin and the mucous membrane, which is applied *externally*, and it makes no sense to drink it, while MMS is proposed to be applied *internally*, so it must be swallowed. Solumium, when contacting the infected skin or mucous membrane, is killing the germs within seconds, but it cannot be absorbed because penetration depth of chlorine dioxide does not exceed 0,1 mm.[4]. This refers to the gastric mucous membrane too, therefore, even swallowed chlorine dioxide cannot get into the blood stream and reach other parts of the body because it is consumed up by reactive amino acids already in the stomach. On the contrary, MMS is applied internally, and the sodium chlorite ingredient of MMS is absorbed in the stomach, and can reach all organs of the body via the bloodstream. Thus, sodium chlorite, exactly because of this behaviour, can be toxic. For example, the kidney is damaged as it is excreting sodium chlorite. In case of a higher concentration, the kidney might even stop working. (That presumption is based on experiments with rats. Severe poisoning by sodium chlorite in humans has been observed only once, in the case of a suicide attempt.)

Penetration of sodium chlorite and chlorine dioxide into the tissues

Chlorine-dioxide does not react with many chemicals (despite of being a free radical) but it reacts very quickly with 3 aminoacids (especially with cystein, then tyrosine and tryptophan) which are present in all tissues. Because of these fast reactions chlorine dioxide penetrates tissues like a front, where chlorine dioxide can be found only behind the moving reaction front and not in the tissues ahead of the front.[4] Sodium chlorite reacts much slower with the the tissue components therefore it practically enters the tissue without any reaction and becomes 'systemic'. Numerical example: at pH 6,71 cysteine reacts with sodium chlorite one million times slower than with chlorine dioxide [5].

III. Comments relating to MMS

The fact that MMS is toxic does not necessarily mean that it may not have any beneficial effects, similar to the way toxic products used in chemotherapy kill tumor cells. However, we are currently not aware of any reliable medical trial/experience which would prove any beneficial effect of MMS. For example, medical experiments to cure malariated mice with Jim Humble's method-were all unsuccessful. Jim Humble remembers and writes about that in his book as follows:

„I was amazed, but he reported that it wouldn't cure mice or even improve their condition. There was nothing more I could say as I wasn't present when the testing was done. So at that time 35.000 human field patents were back to health, but it would not cure a mouse? Sorry, but I don't believe him.”

Of course it may happen that a product which helps people does not cure mice. But malaria is an infectious illness taking the highest number of victims and creating the greatest economical loss in the world, so if anything could have been achieved by Jim Humble's method then it is highly unlikely that the World Health Organization would not have dealt with it in some form.

IV. The questionable theory of MMS

MMS advocate Jim Humble explains (correctly) that chlorine-dioxide is used in disinfection of swimming pools the following way: an aqueous solution of sodium chlorite is mixed with mineral acids, and the forming chlorine dioxide solution is pumped continuously into the water. He is convinced that it would be useful to continuously introduce chlorine-dioxide into the human body (not using a pump though, of course). He aims to achieve that by creating a reaction producing chlorine-dioxide continuously and slowly within the human body. He writes the following about that idea [6.b]

„...in the human body we have a tougher problem because we want to add a lot of chlorine dioxide, but not all at once. We want to allow it to exist for a few hours so that it can be carried around to all parts of the body. But chlorine dioxide deteriorates in minutes and will not exist in the body for hours if you just simply swallow some. There isn't any mechanical mechanism that one can use to add acid slowly to a watery solution of sodium chlorite inside the body.

The importance of Vinegar or Lime or Lemon or Citric acid

That is where vinegar or lime or lemon comes in. The part that is important is the 5% acetic acid or the citric acid in lime or lemon. (Just recently, 7/1/2007, it has been discovered that pure citric acid works even better than vinegar, lime, or lemon). When one of these items is added to sodium chlorite it causes the solution to begin releasing chlorine dioxide on a continuous basis for about 12 hours. The addition of six drops of a solution that is 28% sodium chlorite (that is the Miracle Mineral Supplement) to 30 drops of vinegar or lime or lemon will release approximately three mgs (3 milligrams) of chlorine dioxide in three minutes.”

As 6 drops of 28% solution contains approximately 100mg of sodium chlorite [7] the 3 mg chlorine-dioxide, in comparison, is very little. We can conclude that by the end of the 3rd minute after the reagents have been mixed (meaning when the patient drinks the solution) the majority of the sodium chlorite has not yet been transformed. But this is Jim Humble's original intent as he would like to reach that the reaction of sodium chlorite with acetic acid or with any other weak acid should continue within the human body as this would guarantee a several-hour-long process of chlorine-dioxide formation.

If the reaction took place in a glass or retort, we could indeed see a slow and continuous chlorine-dioxide formation after the 3rd minute, as Jim Humble stipulates. (Note: the fact that the reaction of sodium chlorite and a weak acid results in a slow chlorine-dioxide formulation and that citric acid is one of the best acids for this purpose was already known before Jim Humble's activity, see US patent nr 6,007,772 from 1999, which we also mention it in our invention of 2006). But when 'activated' MMS is getting into the human digestive system instead, not only does that induce a change in the respective concentrations of the reagents but also gives way to the reagents to be absorbed by the human body. Sodium chlorite is exactly that kind of reagent and therefore might cause poisoning.

Finally it is worth mentioning that while MMS causes illness or toxic symptoms rather often (Jim Humble himself mentions it), in the case of applying high purity chlorine-dioxide there was no such experience so far, not even in an experiment where each of the 60 subjects was consuming 24 mg/day [8]. That observation supports the idea that in the cases of poisoning observed with MMS the component responsible was sodium chlorite, and definitely not the nascent chlorine-dioxide. We can thus also assume that the illnesses connected to MMS use are not a part of a healing process.

References:

[1] <http://patentscope.wipo.int/search/en/WO2008035130>

[2] www.solumium.com

[3] <http://www.termesztvilaga.hu/szamok/tv2010/tv1004/noszt.html>

[4] <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0079157>

[5] Margerum, W. D. et al, Inorganic Chemistry 2006, 45, 8768.

[6] Jim V. Humble et al.: The Miracle Mineral Supplement of the 21st Century, 3rd Edition, a) chapter 7. P. 80.; b) chapter 9. pages, 109-110.

[7] 6 drops is about 0,18-0,30 mL solution. (That depends on the drop size which can vary depending on the dropper. On the internet, drop sizes can be found between 0.03 and 0.05 mL. Smaller size droplets can be produced by a burette, for example. In practice the usual droplet volume is 0.05 mL.) If we calculate with the smaller droplet size and with a density of 1.2 mg/mL (the real density should be higher than that) the mass of six drops would be $0,18 \text{ mL} \times 1,2 \text{ g/mL} = 216 \text{ mg}$. In that mass there is $216 \text{ mg} \times 0,28 \approx 60 \text{ mg}$ sodium chlorite. Calculating with a droplet size of 0.05 mL the result is about 100 mg.

[8] Lubbers, J. R., Chauan, S. and Bianchine, J. R. Controlled Clinical Evaluations of Chlorine Dioxide, Chlorite and Chlorate in Man Environmental Health Perspectives, 1982, Vol. 46, 57-62.