

Silver, the Environment and Water:

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Some public awareness groups are suggesting that silver should be regulated by the EPA because it could be a threat to the environment. The newly patented Silver Sol is already certified and regulated by the EPA, where it currently carries a number of EPA certifications.

Silver Sol is approved for and currently in compliance with the following EPA regulations EPA registration # 73499-2

- *22 ppm and 0.5 ppm for dental water line disinfection.
- *10 ppm as a hard surface disinfectant to kill gram negative organisms in industrial commercial and residential usage.
- *32 ppm as a hard surface hospital disinfectant for gram positive, gram negative and nosocomial pathogens.
- *Approved at 32 ppm to kill yeast and environmental fungi including black mold
- *Also approved for the disinfection of heating and ventilation systems, and for the killing of odor causing bacteria.

It has been suggested by outside media groups that silver could pose a threat to the drinking water and environment. Silver Sol poses absolutely no threat to our drinking water, according to Gerard Yeates, a department manager of water quality and water treatment at the Central Utah Water Project, he states that there are no health risks. "Because it (silver) never turns up in any water treatment centers and because it is not being detected in any amount even at levels as low as one part per billion, it poses no threat." (2). There are numerous substances found in our water supply and environment which have been listed as potential problems, and silver is not one of them. The water quality experts are watching for trace amounts of antibiotics, anti-convulsants, mood stabilizers, toxins and sex hormones. Ken Bousfield (Department of Environmental Quality) says "Depending on the pharmaceuticals involved, it would involve perhaps taking an Olympic swimming pool volume of water day in and day out for a period of years before you'd receive a health effect." (3). And Silver Sol would take at least ten times more water to an impossible amount to present a potential problem. Potential water toxins are evaluated by their potential for toxicity and the AWWA Research Foundation has identified the 16 most toxic substances in the ground water, and drinking water and Silver Sol is not one of them, nor does it appear on any unsafe list since it isn't being found in any detectable amount.

The researchers quantify these substances by a term called drinking water equivalent levels (DWEL). Some of the substances that appear in highest concentrations in our water include Diazepam, Naproxen and Atenolol. Dr Snyder reports that it would take drinking 110,000 gallons of treated water for thirty years before a person would have a one in a million chance of developing a medical risk (4). And silver Sol is substantially safer by a factor of at least 10 times, because ten times less people consume or use it.

Silver Sol is produced in extremely low parts per million (5-40 ppm) and has never even been identified as a potential for problem in the water treatment plants or in the environment. This is significant because the EPA has a rating for toxic spills. This identifies the amount of a compound that would cause a toxic event. For instance Clorox would qualify as a toxic event if 3 gallons were spilled. In contrast, The EPA would require a spill of 12.5 million gallons of Silver Sol in order to be classified as a toxic event (5). This would require spilling the entire contents of 12.5 oil tankers at one time in one place without any other water to dilute it. There is no consumer or combination of consumers that store this much silver anywhere in the country.

An average water treatment plant treats about 30 to 70 million gallons of water a day and it would take a spill of about 7 tankers full of silver Sol directly into the treatment water to bring the concentration to 1 part per million. This is still a very safe level for fish, and an impossible event to happen anywhere in the world.

When you look at the source of these suggestions for regulating silver, you will find that many of the proponents of the complaints come from pesticide companies that stand to lose a significant amount of business due to the fact that silver has become certified as a pesticide without harmful side effects to humans. After all, Silver Sol is the one product that is truly organic, all natural, patented and already has EPA approved certification as a pesticide (EPA 73499-2). The real threat is to the American people that are being exposed to hazardous pesticides proven to cause cancers, nerve damage, immune disorders and can be fatal to animals and humans. There is a newly patented, scientifically proven pesticide that currently has EPA certification as a pesticide, with no known side effects to humans and it is called Silver Sol. It is truly criminal to allow the misrepresented facts to continue the support of hazardous pesticide use while there is a safe alternative called Silver Sol.

When you realize that our ground water comes from the snow that melts on the mountains and is filtered through the vast amount of minerals in our soils, you understand that silver is a major participant in filtering our water and it has never appeared in measurable amounts nor is it dangerous. These groups want to promote the use of highly toxic pesticides instead of the harmless silver, and they are demanding regulation of a substance (Silver Sol) that is already being certified and safely regulated. It is clearly a case of politics over proof. But be aware that Silver Sol is the only category of silver that has acquired a patent (2006), qualified for and achieved EPA Certification and has peer reviewed published studies supporting the individual claims. This means that the old and obsolete silver colloids and ionic products are suspect and should not be considered as safe nor as beneficial as the newly patented Silver Sol.

Safety

Silver Sol fulfills the definition of non-toxic, in that it passes through the body unchanged, which means it does not produce any harmful metabolites. Marino (Chem. Bioil. Interactions, 1974), and Berger (Antimicrob Agents, 1976), confirmed that the effective dosage level of pure silver sol is safe for mammalian tissues. The CRC Handbook to Chemistry and Physics (sec 15 pg 8) states: "While silver is not

considered to be toxic, most of its salts are poisonous.” This is why Silver Sol containing only elemental silver and water is virtually devoid of toxicity. The only adverse event known for silver is Argyria, yet the EPA’s lowest observed adverse event level (LOAEL) is given to silver. The EPA has determined that, administering one gram total elemental silver over a 2 year period presents no risk for developing Argyria (US EPA Silver; CASRN 7440-22-4 1996). This means that you could safely inject or take an IV drip of 250 cc (10 ppm Silver Sol) every day for a year without risking the development of Argyria. It should be noted that these are Intravenous recommendations and everyday oral ingestion is significantly safer.

Nano Particles

The definition of a nano particle is that it must be a tiny .05 nano meters in size This means that only the smallest of particles can be placed under the label of nano particle. Some media groups suggest that a nano particle of a specific size (.001 nm) can be dangerous by collecting and sticking in the lungs causing cancer in a similar way that asbestos causes mesothelioma. Silver Sol is 2.34 nm and does not fit in the alleged size parameter. In addition Silver Sol has the unique ability to separate into six separate segments allowing to the particle to morph into or out of any situation (Roy, R. Material Science Investigation, 2008) The electron microscopy published in this study, illustrates the segmentation of this unique silver sol and its ability to utilize segmentation to adapt to its environment. For this and other reasons silver sol is not going to be a threat to stick in the lungs.

In a publication on H5N1 Bird flu (Pedersen, 2008) Silver Sol was used to help prevent the bird flu and a simultaneous toxicity study was performed wherein 10 times normal 100 times normal and 200 times normal amounts of silver sol were given to mice and lung necropsy was performed to determine if the lung tissues were damaged. It was found that the lung tissues had reduced viral titers, were less inflamed and weighed less indicating that the lungs were not being harmed by nano particles. In addition the lower lung weights indicate that there was a reduction in the inflammation supporting the safety of the patented Silver Sol as a safe particle.