



# How to Compare the *Silver Pulser* to Other Units

There are a number of Microcurrent and Colloidal Silver Generator units on the market today – some are based on the same technology as the SOTA unit, while others use a different approach. Because of the number of units available, it would be impossible for us to comment and compare them fairly and accurately to our own unit. We can, however, offer a few guidelines that may be helpful when you are comparing units to our Silver Pulser or Silver Pulser Lite.

## **Micropulsing**

The SOTA Silver Pulser conforms to the original specifications of this technology.

While there are other units on the market that have the original specifications, there are others with an altered output. Any alterations may or may not comply with the original intent and purpose of the unit. We cannot comment on whether these changes are positive or negative.

## **Ionic~Colloidal Silver**

There is much confusion around the terms Ionic~Colloidal Silver, Ionic Silver, Colloidal Silver and Nano Silver. It is important to be clear about the terms so a fair and accurate comparison can truly be made.

### **Ionic Silver**

Ionic Silver is charged atoms (ions) of Silver, which are created using a low level of electricity to move atoms of silver from silver wires into water, making what is known as a silver electrolyte. This is a simple electrolysis process. This method of making a silver electrolyte was pioneered by a physicist. The SOTA Silver Pulser produces a silver electrolyte using this method.

### **Colloidal Silver**

Colloidal Silver is a grouping of elemental metallic silver atoms, which can vary in size from 1 to 1000 nanometers, depending on how it is made.

Imagine taking silver and using very high voltage electricity— blowing the silver up into extremely tiny pieces. As a result, you end up with atoms of silver grouped together into particles of varying sizes. These elemental silver particles are held in suspension in water.

The process to make Colloidal Silver is often expensive and complex.

Ionic Silver can also cluster together to form colloids. We estimate that the silver electrolyte produced by the SOTA Silver Pulser has 5-10% colloidal properties.

## **Ionic~Colloidal Silver**

Ionic~Colloidal Silver means some of the ions form micro-clusters of silver which are more colloidal in nature. With the SOTA Ionic~Colloidal Silver electrolyte, you have largely Ionic Silver (90-95%) with some of the silver displaying colloidal properties (5-10%).

Although the properties of Colloidal Silver and Ionic Silver are different, given the nature of silver, both are beneficial. The SOTA Silver Pulser is designed to be an easy and inexpensive way to make your own Ionic~Colloidal Silver electrolyte.

## **Nano Silver**

Technically, this is not a form of silver. Nano is a unit of measurement, like milli, kilo, inch or mile. The prefix nano means one-billionth, so a nanometer is one billionth of a meter. As a frame of reference, a single sheet of paper is about 100,000 nanometers thick. The size of a silver atom (ion) is about 0.25 nanometers (nm) in diameter. The size of a colloid is 1–1000 nanometers.

Does the SOTA Silver Pulser produce nano silver? Although we don't label the Ionic~Colloidal Silver electrolyte produced by our SOTA Silver Pulser as 'nano silver', the particles by definition of size do qualify as nano-particles.

What makes this even more confusing are manufacturers who are trying to market their products by interchanging and/or using these words with their own definitions.

For example, there is a company calling their silver Nano Silver which is simply their brand name. They are producing a Colloidal Silver and have ensured through their manufacturing process that the size of the particles is at the lower end of the colloid definition of 1-1000 nanometers.

Other examples are companies that produce a silver electrolyte using electrolysis and name it Colloidal Silver – when in fact it is a mix of Ionic and Colloidal Silver.

## **Other Considerations**

When comparing Silver Pulsers, it is important to not only compare the electrical specifications of the units but also to compare any external testing, certifications or testing standards that the units have or have not met.

The SOTA units have been CE approved and are RoHS compliant.



CE is a European standard that ensures a product meets certain regulatory standards set by the European Union. Having CE on the units ensures products are safe to use and do not output hazardous levels of EMRs (electromagnetic radiation, like cellular phones do).

RoHS is the Restriction of use of Hazardous Substances and is again, a European standard. In order to be RoHS compliant, electronic products must not use any of the following six substances: Cadmium (Cd), hexavalent Chromium (CR VI), Lead (Pb), Mercury (Hg), polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).