

Product Reports

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There are three distinctly different types of silver that are labeled and sold on the market as "colloidal silver"; they are **ionic silver**, **silver protein**, and **true colloidal silver**. Consumers seeking true colloidal silver are often at a disadvantage because each of these products represents themselves as colloidal silver.

Commercial Product Reports provide detailed laboratory analysis of colloidal products. Tests are performed by the **Colloidal Science Laboratory, Inc. (CSL)** using a uniform set of analytical measurements. The information contained in these reports is provided as a service to educate consumers, and is not intended to promote any particular product. CSL does not receive funding for its work from manufacturers, and anyone can submit a product for testing.

Scientific product testing performed by CSL is an unbiased examination of the physical properties of colloids using the best scientific methods and equipment available. The equipment used to perform the analyses is calibrated to standards traceable to the National Institute of Standards & Technology, and the personnel performing the measurements are skilled in the use of the equipment.

The instruments used to perform the tests are described in detail and the test methods are fully revealed so that the entire suite of product tests can be duplicated by others. See **Determining Properties** for technical details about how the laboratory analysis is performed. Detailed lab analysis for the products shown in the table is available by clicking on the product name in the table.

Before exploring the reports, charts, graphs, and details of the tests, it is important to have a basic understanding of the three types of products that are marketed as Colloidal Silver.

Types of Colloidal Silver

The three types of products that consumers find labeled as "colloidal silver" can be categorized as follows: **ionic silver solutions**, **silver protein**, and **true colloidal silver**.

- **Ionic Silver Solutions**

The vast majority of products labeled and sold as *colloidal silver* fall into this category due to the low degree of manufacturing complexity and resulting low cost of production. The silver content in these products consists of both **silver ions** and **silver particles**. Typically, 90% of the silver content is in the form of **ionic silver** and the remaining 10% of the silver content is in the form of silver particles. The silver ions are produced by electrolysis and may be described as "dissolved silver". Products produced by electrolysis are frequently described as "electro colloids". Because the majority of the silver content in these products is *dissolved* silver rather than metallic silver particles, it would be more technically accurate to describe these products as *silver solutions*.

Confusingly, ads for these products frequently claim that silver ions are *small silver particles* or describe the product as consisting of *ionic silver particles*. Silver ions are *not* the same as silver particles and the two terms are *not* interchangeable. Ionic silver is also referred to as **monatomic silver** and **silver hydrosol** by some producers who choose not to describe their products using the scientifically correct terminology. These are marketing terms used to hide the truth that what is being sold is an *ionic silver solution*. For more details read **About Ionic Silver**.

How To Tell If A Product Is Mostly Ionic Silver

Silver solutions are typically clear like water or have a slight yellow tint. These products are clear because silver that is dissolved in water looks just like sugar or salt that is dissolved in water; it has no visible appearance. The producers of *ionic silver solutions* will suggest that colloidal silver *should* look like clear water, but this is incorrect.

Companies that sell ionic silver claim that their product is "true colloidal silver" in an attempt to confuse the buyer. **Do not be fooled**. If the product is clear, then it is *ionic silver*, not a true silver colloid. Colloidal particles, when present in sufficient concentration, absorb visible light causing the colloid to exhibit an "apparent color". The apparent color is the complement of the absorbed wavelength. Silver ions do not absorb visible light and therefore appear as clear colorless liquids.

Many producers of ionic silver recommend that the product be stored only in glass containers. Some specify only amber or cobalt glass bottles because their products are photosensitive and deteriorate when exposed to light. True colloids do not have these issues.

How To Test for Ionic Silver

To figure out whether a solution is ionic silver, you only need add chloride ions. Common table salt, which is sodium chloride, will do. If silver ions are present the chloride ions will combine with the silver ions and create a white, cloudy appearance. To form a cloud that is visible requires that a sufficient concentration of silver ions be present, typically about 10 ppm or above. Simply place 1-2 ounces of ionic silver in a clear glass. Add a few grains of table salt. Observe whether,

as the salt dissolves, a white cloud of silver chloride forms in the solution. If so, eventually, the entire solution will turn cloudy. If more salt is added, the white silver chloride will become denser until all the silver ions have combined with the available chlorine ions. If no silver ions are present then no white cloud will form. Here's the rub: Some products will not make a white cloud of silver chloride when table salt is added because they contain no silver at all, or very little silver. Believe it or not, lab analysis has shown that some "silver" products actually contain no silver!

The difference between silver ions and silver particles boils down to the fact that *silver ions* combine with chloride ions to form silver chloride and *silver particles* do not.

Safe usage

"Colloidal silver" generators sold to home hobbyists all produce *ionic* silver solutions. Because ionic silver products contain a low percentage of their silver content in the form of particles, they all have a **fairly low particle surface area** relative to the total silver content. Ionic silver is not without merit. Ionic silver is a strong anti microbial and serves well in situations where chloride is not present. When chloride is present (inside the human body), the silver particle content will survive to produce benefit.

Ionic silver products, when taken according to the manufacturers recommended dosage, **will not cause argyria**, a condition that causes the skin to turn blue-gray.

TechnoBabble, Misleading Language and Bogus Science

The term *colloidal* means *particles* not *ions*, but producers of ionic silver products will try to convince the buyer that their product is a silver colloid. The common thread in most advertisements selling ionic silver products (labeled as *colloidal silver*) is to claim that ions *are* silver particles, or they try to blur the distinction by using the terms interchangeably. Another common trick is to display images made from a Transmission Electron Microscope (TEM) that they claim shows the small particles found in their products. These images do not show the silver particles in their products. Read [About TEM Images of Ionic Silver Solutions](#) to learn why these images are deceptive and misleading. Another ploy is the use of techno-babble, wherein make-believe technical sounding terms are used to impress the non-technical reader. **Techno-babble** attempts to draw the reader's attention away from the real science and focus on nonsensical but important sounding terms and ideas. In a related approach, advertising or labels will include scientific-sounding explanations that use terms from other fields of science that are not applicable to the chemistry of solutions and colloids. For example, in the field of nuclear science, a particle is considered to be any atomic object whose weight is greater or equal to the weight of an electron. Attempting to define a silver ion as a particle by using this definition is the essence of what is commonly referred to as **bogus science**. For examples of techno-babble and bogus science, [click here](#).

List of Ionic Silver Products

[Click here](#) for a partial list of [ionic silver products](#) by brand name.

Related Information

- [The Truth About Ionic Silver](#)
- [The Truth About TEM Images of Ionic Silver Solutions](#)
- [Silver Protein \(a/k/a Mild Silver Protein\)](#)

Silver protein products are the second most prevalent type of so-called colloidal silver products on the market. These products consist of a combination of metallic silver particles and a protein binder, and can easily be produced by simply adding water to silver protein powder sold by various chemical companies.

Most products claiming to be high concentrations of colloidal silver (typically in the range of 30 to 20,000 ppm) are in fact **silver protein** colloids. While some of these products are labeled as **Silver Protein** or **Mild Silver Protein**, many such products are simply labeled as colloidal silver and the word **protein** does not appear anywhere on the label or in the product advertising literature.

Silver protein products generally have very large silver particles, so large that they would not remain suspended as colloidal particles without protein additives. Protein additives help to keep the large particles from settling. While various protein binders may be used, the protein most commonly used is gelatin, which is made by boiling the skin, tendons, and ligaments of animals. For large metallic silver particles to remain suspended in water, they need additional buoyancy to keep from sinking. Gelatin molecules will encapsulate each particle of silver and add enough buoyancy so that it does not sink to the bottom. The presence of gelatin creates a risk of bacteria and is one of the dangers of taking this product.

Of the three types of colloidal silver, silver protein products have the lowest **particle surface area** for a given silver concentration, making the silver inaccessible for safe human absorption and less effective for human use. **Particle surface area**, as we will cover later, is the single most important determinant of colloidal silver effectiveness. [Click here](#) for scanning electron microscope (**SEM**) [images of silver protein products](#) that clearly show the very large size of

the silver particles (which appear to range in size from about 100 nm up to 10,000 nm with some much larger).

Testing For Silver Protein

To find out whether you have a silver protein product rather than a true silver colloid, look for these characteristics:

- **Makes foam:** When shaken, a silver protein product produces foam above the liquid that will persist for minutes after being shaken. This is probably the single most reliable indicator. Even when the product label identifies the product simply as **colloidal silver** and never mentions the word **protein**, this indicator will signal the presence of a protein binder. Shake the bottle and look for foaming. When the foam persists, protein is present.
- **Concentration:** Silver protein products tend to have very high concentration values, typically in the range of 30 to 20,000 ppm. Concentration is expressed in parts per million (ppm) and is numerically the same as milligrams of silver per liter of water (mg/L).
- **Color:** The color ranges from light amber to almost black with an increasing concentration of silver.

Dangers

- Due to the high concentration of large silver particles, silver protein products are known to cause **argyria**, a condition that causes the skin to turn blue-gray. These and other dangers associated with silver protein are described in [About Silver Protein Products](#).
- Adding protein to colloidal silver is also potentially unsafe because of bacteria, according to Professor Ronald Gibbs who discussed this fact in his booklet "[Silver Colloids](#)". He found "mild silver protein" products that had live bacteria growing on the protein. This can happen when protein is mixed with colloidal silver because the protein molecules are large and encapsulate the silver particles, which prevent the silver from reaching the bacteria to kill it. Normally, it would be impossible for bacteria to live in colloidal silver, but it is common in products containing protein. For this reason, *Professor Gibbs recommended that silver protein products should be avoided*. Here is the quote from Professor Gibbs book concerning use of protein to stabilize colloidal silver: "*A fifth sample considered showed fuzzy clusters around silver particles when viewed in water As suspected, this fuzzy material fluoresced indicating the material was, indeed, live bacteria growing on the gelatin that had apparently been used to stabilize the colloidal silver suspension. In Figure 3A the black dots inside the fuzzy mass are the silver particles. This sample exhibits the poor quality control that is totally unacceptable in this type of product. This sample was removed from further consideration and analysis .*" Professor Gibbs' book "[Silver Colloids, Do They Work?](#)" can be [downloaded here](#).

List of Silver Protein-Based Products

[Click here](#) for a partial list of [silver protein-based products](#) by brand name.

Related Information

- [The Truth About Silver Protein Products](#)
- [The Truth About Colloid Particle Size](#)
- [True Colloidal Silver](#)

True colloidal silver products are the least prevalent type of colloidal silver on the market due to high degree of manufacturing complexity and the resulting high cost of production.

In true colloidal silver, the majority of the silver content is in the form of **silver particles**. True colloids will typically contain more than 50% particles (often 50 – 80%), while the balance (20% to 49%) will be silver ions. When referring to colloidal silver, the word *colloid means silver particles*.

The two critical factors to look for in determining true colloids are **the percentage of silver particles** and the **particle surface area**.

Of all the types of silver marketed as colloidal, true colloidal silver products have the highest **particle surface area**. High particle surface area is achieved by a high percentage of silver particles combined with very small sized particles. Of the three types of silver on the market, true silver colloids have the highest particle surface area relative to the **total silver content**. The ratio of particle surface area to total silver content indicates how **efficiently** the colloid is able to produce particle surface area which determines effectiveness. Higher conversion efficiencies are more desirable.

The nanometer-sized particles in true silver colloids remain in colloidal suspension without requiring protein or other additives. It is the mutual repulsion of the particles created by the zeta potential charge that keeps the particles uniformly distributed in the colloid.

Determining True Silver Colloids

Because of the high concentration of silver particles, **true silver colloids are never clear like water**. True colloidal silver with a sufficient concentration of particles does not look like water because silver particles -- even very small particles -- block light from passing through, making

the liquid appear darker.

Dangers

Due to the very low concentration of ionic silver and small particle size, **true silver colloids do not** cause **argyria**, a condition that causes the skin to turn blue-gray.

List of True Colloidal Silver Products

[Click here](#) for a partial list of **true silver colloid products** by brand name.

Comparing Colloidal Silver Products

Below you will find two tables comparing colloidal silver products. A couple of notes before you begin:

- The particle size distribution and zeta potential reports are in pdf format and require the **Adobe Acrobat Reader** to view. If you do not have the Acrobat Reader plug-in installed in your browser, you can download it free from the Adobe web site. Click on the Acrobat Icon below to **obtain the Acrobat Reader free**.
- In the tables below, a click on the product name will bring up the complete lab analysis for the products shown. The top part of the lab analysis page indicates the properties of the product according to the manufacturer. The bottom of the page contains the results of applying a standard suite of tests to determine the physical properties of the colloids. Not all tests can be performed on all the products. Specifically, the protein based products cannot be tested for zeta potential. See **Determining Properties** for technical details about how the laboratory analysis is performed.
- The tables below compare two critical metrics. **Column 2** of first table compares **particle surface area**, which is the most important measure of effectiveness. The table is organized in ascending values of particle surface area. The second table evaluates **metal content**.
- The second table is arranged in ascending order of percent of labeled value by product grouping. Eventually, we hope to test all products that either claim to be colloidal silver or *are* colloidal silver.

Comparison Table: Particle Surface Area

The effectiveness of a colloid is predicated on **particle surface area**, therefore particle surface area is the single most important metric for comparing colloidal products. The **Comparison Table** below provides a detailed comparative analysis of products based on the particle surface area.

In the booklet "*Silver Colloids*" Professor Ronald Gibbs wrote "**The size of the particles in the colloidal silver suspensions we use for health purposes is very important. Particle size controls the surface area and therefore the effectiveness of the colloidal silver suspension.**"

In this context, **effectiveness is defined as the ability of the colloid to interact with its environment**, just as in the world of chemistry, where surface area determines how well substances react with one another. For a more complete discussion of the rationale for comparing colloidal silver products using particle surface areas as a single valued metric see: **Comparing Colloidal Silver Products**.

Notes:

Effectiveness of a colloid is determined by the **particle surface area** making it the single most important metric for comparing colloids.

- This table is presented in ascending order of **particle surface area** (column 2) to provide an easy means for direct comparison among the various properties associated with **particle surface area**. Data from the product reports is compiled into a table so the reader can compare products based on costs and particle surface area.
- Product Name:** These are the colloidal silver products listed in the **Product Reports**. Click on the product name in the table below for the complete lab analysis.
- Particle Surface Area:** In the table below, Column 2 (Particle Surface Area) provides the best means for a direct comparison of the various products. Column 2 (**cm²/mL**) is **particle surface area** in **square cm per mL** from the Product Report.
- Efficiency Index:** Column 3 Effective surface area per unit of concentration. **Particle Surface Area (cm²/mL) per ppm X 1000**. This value relates how efficiently surface area is generated per unit of concentration (ppm).
- Comparing Cost:** Column 5 (**Cents/cm²**) is the Price in **Cents per square cm** of **particle surface area**. Column 7 (**cm²/\$**) is **square cm of particle surface area per dollar** of cost.
- Comparing Quantity:** Column 6 (**Normalized mL**) shows the **quantity of the colloid in mL required to provide a constant particle surface area**. The values are normalized.

Product Name Click on product name for complete lab analysis report	Particle Surface Area cm ² /mL	Efficiency Index	Price Cents/mL	Price Cents/cm ²	Normalized mL	cm ² /\$
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Health & Herbs Col. Silver 10	0.001	5.9	4.22	4216	104,700	0.024
Trace Minerals Col. Silver 30	0.022	0.7	7.08	321.7	4,759	0.31
home brewed w/ SG-7	0.024	1.64	na	na	4,362	na
Silver Shield Col. Silver	0.027	0.19	6.34	234.8	3,878	0.43
Silver Biotics 10	0.035	3.2	11.39	325.4	2,991	0.31
Tri Silver Colloidal Silver 10	0.052	5.5	5.49	105.6	2,013	0.95
Silver Lightning 5	0.078	17	1.05	13.44	1,342	7.44
Daily Mfg. Col. Silver 20 ppm	0.080	3.8	10.10	126.3	1,309	0.79
Silver Wain Water 3	0.083	34.2	2.64	31.8	1,261	3.14
Wonder Water 10	0.096	9.6	4.67	48.60	1,090	2.06
ASAP 10	0.112	10.2	10.99	98.11	935	1.02
New Silver Solution	0.163	11.32	14.35	88.04	639.3	1.14
Sovereign Silver 10	0.217	22.3	25.36	116.9	482.5	0.86
Ultra Pure Colloidal Silver 35	0.225	13.6	7.80	34.68	465.3	2.88
Vitol Super Col. Silver 5 ppm	0.286	54.6	13.39	46.82	366	2.14
High Energy Lab Col. Sil. 15 ppm	0.319	15.1	4.22	13.22	328	7.56
Argentyn 23 ppm	0.355	22.6	20.12	56.67	294.9	1.76
ACS 200 Adv. Cell. Sil. 200 ppm	0.577	9.55	42.22	73.17	181.5	1.37
ASAP 22	0.587	26.3	15.22	25.92	178.4	3.85
Futurebiotics Adv. Col. Silver	0.591	61.6	28.65	48.48	177.2	2.06
Int. Pharm. Invive 50 ppm	0.621	4.4	7.61	12.25	168.6	8.16
Electra Clear Col. Sil. 10 ppm	0.662	25.1	3.16	4.77	158.2	20.9
Source Naturals Col. Silver 30	0.881	24.3	13.94	15.83	118.8	6.32
Kelly Colloidal Silver 20	1.420	122	6.34	4.46	73.7	22.4
Herbal Healer Col. Sil. 500 ppm	2.513	3.80	30.43	12.11	41.66	8.25
Utopia Advanced Col. Sil. 20	12.20	924	12.24	1.003	8.58	99.7
Innovative Natural Prod. 500	12.39	20.5	33.77	2.725	8.45	36.7
Mesosilver 20	104.7	5235	11.97	0.1143	1.0	874.7

Higher values are better.

Lower values are better.

Notes:

Col. 1 Product Name and concentration in parts-per-million (ppm) on label.

Col. 2 Particle surface area= value from lab report.

Col. 3 Efficiency Index = Divide column 2 by total ppm value from the lab report and multiply by 1000.

Col. 4 Price Cents/mL = Divide product price (\$/oz) by 29.5734 and multiply by 100.

Col. 5 Price Cents/cm² = Divide 1 by column 2 and multiply by column 4.

Col. 6 mL of product required for a constant particle surface area.

Normalized value is calculated by dividing the largest column 2 value (104.7) by column 2.

Col. 7 cm²/\$ = Divide 1 by column 5 and multiply by 100.**Percent of Metal Content Table**

In the table below, the **Metal Content** indicates the accuracy of product labeling. A value of 100 percent means the label accurately describes the metal content of the product. Values near zero indicate that the product contains very little or none of the metal content indicated on the label.

Values that are significantly above or below 100 (highlighted in red) indicate the manufacturers inability to adequately control the concentration (ppm) of the product. This could be the result of poor quality control or the lack of capability to measure concentration.

Type	Metal Content	Product Name
	Percent of Labeled Value	Click on product name for complete lab analysis report
Ionic	>>> 0.03 <<<	WEE - Detoxing Mineral Water 1000 ppm
Ionic	>>> 0.09 <<<	Nano-2 Silver 2000 ppm
Ionic	>>> 0.52 <<<	Earthborn Products - Colloidal Silver 100 ppm
Ionic	>>> 1.7 <<<	Health & Herbs Colloidal Silver 10 ppm

Ionic	20.5	Solutions IE Colloidal Silver Plus 20 ppm
Ionic	47.1	Golden Touch Mfg. Ultra Pure Colloidal Silver 35 ppm
Ionic	68.3	Argentyn 23 ppm
Ionic	81.0	Survival Enterprises Silver Water 3 ppm
Ionic	81.0	Silver Water Products - Silver Wain Water 3 ppm
Ionic	91.2	Silver Lightning Tonic Water 5 ppm
Ionic	95.4	Tri Silver Colloidal Silver 10 ppm
Ionic	97.1	Sovereign Silver 10 ppm
Ionic	99.5	"Wonder Water" Silver Fortified Water 10 ppm
Ionic	101.4	ASAP Solution 22 ppm
Ionic	106.0	Daily Mfg., Inc 20 ppm
Ionic	106.0	Trace Minerals - Liqumins Colloidal Silver 30 ppm
Ionic	109.3	Silver Biotics 10 ppm
Ionic	110.2	ASAP Solution 10 ppm
Ionic	133	TriMedica Silva Solution 10 ppm
Ionic	140	High Energy Labs Colloidal Silver 15 ppm
Ionic	264	InSpiral Technologies Electra Clear Colloidal Silver 5-10 ppm
Protein	96.0	Futurebiotics Advanced Colloidal Silver 10 ppm
Protein	120.6	Innovative Nature Products 500 ppm
Protein	132	Herbal Healer Academy 500 ppm
Protein	280	International Pharmaceuticals - Invive 50 ppm
Colloid	58.0	Kelly Colloidal Silver 20 ppm
Colloid	66.0	Utopia Advanced Colloidal Silver 20 ppm
Colloid	83.0	Colloidal Gold 5 ppm
Colloid	100.0	Mesosilver 20 ppm
Colloid	104.8	Vitol Super Colloidal Silver 5 ppm
Colloid	121.0	Source Naturals - Wellness Colloidal Silver 30 ppm

Percentages shown in red are less than 75% or greater than 150% of the labeled silver content.

>>> These products contain little or no silver (less than 2% of labeled value). <<<

Why are so many products shown in red?

It seems clear that some companies are not properly measuring the silver concentration in their products. There is a common misconception that silver concentration can be determined by measuring the electrical conductivity. This erroneous belief is fostered by the companies that sell "colloidal silver" generators to the home hobbyists and also sell TDS (Total Dissolved Solids) meters that they claim can be calibrated to measure ionic silver content. TDS meters measure the electrical conductivity of the solution, not silver content. Any substance that increases the electrical conductivity will cause the TDS meter reading to increase. This may or may not have anything to do with the ionic silver concentration. The products shown above that contain little or no silver all have electrical conductivity values that indicate the presence of water soluble salts that would increase the TDS reading without silver being present. We speculate that these companies are relying on such measurements in an attempt to determine the silver content. **Electrical conductivity cannot be used to determine silver concentration.**

Accurate determination of silver concentration requires the use of either an atomic absorption/emission spectrometer or a mass spectrometer. Most laboratories use either atomic absorption or atomic emission spectrometers because they are less expensive than a mass spectrometer (ICP/MS). The measured values reported on this web site were made using an atomic emission spectrometer, specifically an Inductively Coupled Plasma/Atomic Emission Spectrometer (ICP/AES). See [Determining Properties](#) for technical details about how the laboratory analysis is performed by CSL.

When an FDA laboratory determines metal concentration they use either and ICP/AES or an ICP/MS whose readings will match very closely the values that are indicated on the lab analysis pages.

Potentially dangerous ionic silver products - those containing nitric acid!

Ionic silver products which have a low silver concentration while at the same time have high electrical conductivity will generally have a low pH value (acidic). These products will quite often be found to have a high nitrate (NO₃) concentration as well. This unique set of properties generally indicates that the process used to produce the product involves arcing a high voltage AC current through the air to the surface of the water. Since air is 80% nitrogen, the high voltage arc through nitrogen produces nitrogen dioxide (NO₂) which combines with the water (H₂O) to form nitric acid (HNO₃). This method is considered bogus in the

extreme and produces a product that may contain significant amounts of nitric acid and is therefore potentially very dangerous to ingest. This ill advised process was developed experimentally in the early days of colloidal silver research and was adopted by some manufacturers who apparently did not have the requisite knowledge to understand that they were making nitric acid. Unfortunately, this method is still in use today by some producers who refuse to acknowledge that they are producing a potentially dangerous product.

How to spot products that contain nitric acid

When the total silver concentration (ppm) reported on the lab analysis page indicates a value that is far below the value on the product label, carefully read the lab analysis and look for the following:

1. **High values of electrical conductivity** - ionic silver products that do not contain nitrate or some other form of contamination will typically have a conductivity reading expressed in micro-Siemens (uS/cm) that is approximately equal to the silver ion concentration in ppm. While not an accurate determination, a *rule of thumb* is, a 10 ppm product will have about 10 uS/cm of electrical conductivity. Interestingly, it is this *rule of thumb* that formed the belief that electrical conductivity could be used to measure ionic silver content. If the uS/cm value is significantly above the measured total silver concentration value, then it is safe to suspect that nitrate or some other form of contamination is present.
2. **Low pH values** - pH values below 7 are acidic, values above 7 are basic and exactly 7.0 is neutral. Products containing nitrate (NO₃) will be acidic and typically have values between 1 and 4. An acceptable pH value would generally be considered to be in the range of 6.5 to 7.5.
3. **No silver particles present** - nitric acid will dissolve silver particles so no silver particles will be present in products that contain nitric acid.
4. **Presence of nitrate (NO₃)** - When a nitrate determination has been made for a given product the value of NO₃ expressed in parts-per-million (ppm) of nitrate will be included on the lab analysis page.

At the moment, not all lab analysis pages have nitrate test values shown. We plan to perform the nitrate tests on products that have positive indication for items 1 to 3 above. The nitrate test results will be added to lab analysis pages when they are completed.

Notification of Results

Each manufacturer whose product appears in the tables and reports on this web site has been notified by e-mail and provided with a link to the detailed laboratory analysis of their product. At time of notification the producer may dispute the findings of our laboratory with regard to the determination of the measured values. The lab personnel are more than willing to discuss the results of our analysis should any company whose products are reported here choose to take issue with our laboratory procedures, suitability of equipment used, calibration standards, or experience of the laboratory staff. Not a single lab analysis has been disputed as of this date.

Not a single lab analysis has been disputed as of this date, and manufacturers cannot claim ignorance about the contents of the products they are selling.

Recourse for Consumers

Some of the products tested contain such a small fraction of the labeled value (see **Metal Content** chart above) that those products would generally be considered to have misleading and/or deceptive labeling by the Consumer Protection Department of various state governments. The sale of these mislabeled products is clearly a violation of the state consumer protection laws as well as a violation of the Federal Trade Commission regulations. If you have purchased one of these products, you might want to consider filing a complaint with the consumer protection department of the state where the manufacturer is located. You also might want to consider sending an e-mail to the producer and ask them why they continue to sell a product whose label misrepresents the contents of the bottle.

Donate a product for testing - Products that are commercially produced and sold to the public may be donated by for testing; the test results will be published on this site. Products donated for lab analysis and inclusion in our reports must be in a new factory sealed bottle to avoid the possibility of contamination. The scientists at the Colloidal Science Laboratory, Inc. will perform a uniform set of analytical measurements and report the results in the standard format as shown on the Commercial Product Report pages of this site. The lab analysis is done on a time available basis by laboratory personnel. Products submitted for analysis will not be returned. **Products for analysis can be submitted to this address.**

Related Information

- [How to Compare Colloidal Silver Products](#)
- [Particle Surface Area and Effectiveness](#)
- [Bioavailability of Colloidal Silver](#)
- [The Truth About Ionic Silver](#)
- [Myth of Monatomic Colloidal Silver](#)
- [The Truth About TEM Images of Ionic Silver Solutions](#)
- [The Truth About Silver Protein Products](#)
- [The Truth About Colloid Particle Size](#)
- [Bogus Scientific Claims Made for Colloidal Silver Products](#)
- Visit the [Colloid Forum](#) where users share information.
- [Find colloidal silver products on the internet](#)

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