

# Comparison of Enagic SD501 and Alkaway “Kangen” 7

Enagic SD 501 Water Ioniser produces Kangen Water® which is a registered trademark of Enagic International.

1. Enagic is an Original Equipment Manufacturer and Leader in “Medical” water Ionisers.  
*Kangen 7 is manufactured by Emco Tech of Taiwan/Korea...they are “A Private Labelling Manufacturer that manufactures “various” water ionisers for many companies.*
2. Enagic is the only water ioniser certified as medical equipment in Japan. Enagic has Japanese Ministry of Health and Welfare certification as a medical device.
3. Enagic machines are endorsed by the Japanese Association of Preventive Medicine for Adult Disease, and are endorsed by the largest Japanese Medical Association for Geriatric and Anti-Aging Medicine (Over 7000 doctors)
4. Enagic is an ISO (International Organization for Standardization) The World’s largest and most respected developer of International Manufacturing Standards. Enagic is certified as follows:
  1. ISO 9001 Certification for Quality Compliance
  2. ISO 13485 Certification for Medical Device Compliance (No other water ioniser has this certification)
  3. ISO 14001 Certification for Environment Compliance

You must ensure that the certification is Norwegian and not from other countries i.e. India.

5. Enagic received the Environmental Grand Prize for “Outstanding Achievement in Environmental Sciences”
6. WQA (Water Quality Association) Gold Seal Certification: Oldest Third Party Testing and Certification Program. The SD501 is only water ioniser to receive this award.

*Alkaway and their Kangen 7 machine do not have any of the above certifications, obviously because of the lower quality of the machine.*

## Life Expectancy and Warranty

Enagic began business in 1974 and has been in operation for 40 years, therefore they can justify the life expectancy of their machines. The SD501 has a life expectancy of 20 to 25 years, and comes with a full 5-year warranty. *Alkaway has been operating in Australia for about 11 years and say that their Alkaway “Kangen 7” machine has been in existence and in the market for about 3 years, and claim that the life span is between 12 to 15yrs.* This is rather confusing....if the product has only been in the market for 3 years, how do they know that the life expectancy is between 12 to 15 years?

It is imperative that one considers the fine print in the various warranties. Enagic SD501 comes with a five years unlimited warranty. *With Alkaway the warrant is 1Year with certain conditions which include the clause that the warranty is dependent upon regular water filter changes. Other conditions are not stipulated.*

## Filtration

*Quote from the Alkaway website, “While the filter in the Kangen 7 appears better than competitor's units due to its carbon block design, we have found the filter to be less effective than our other water ionizers”.* This is obvious that the filters used are not good quality.

Enagic uses a granulated carbon filter. Also remember that since Enagic Water Ionisers SD501 is licensed as a medical device, all the components of the machine have to meet very strict guidelines.

## Number of plates in Cell

The quality of water produced by the water ioniser is dependent upon three very crucial elements:

- a) The surface area of the plates - the larger the surface area the better the quality of water produced.
  - b) The surface area will also depend upon the construction of the plates. Solid plates are the best.
  - c) The amount of power the machine uses - the higher the amount of power the better the quality of water produced.
1. The most important aspect of a water ioniser is the water cell. It really is the heart of the machine. The size of the plates is of significance importance. The plates of the ioniser can be compared to the engine of a car. They are directly responsible for the quality of the resulting water. Just as the size and number of cylinders determine the efficiency of an engine, electrode plate size and surface area determine the effectiveness and efficiency of a water ioniser. **Alkaway, when asked what the surface area of the Alkaway "Kangen" 7 didn't know or refused to reveal the actual surface area. However on the presumption that the size is the same as that of their earlier five plate machines, then the total surface area would be 496.77 cm sq., whilst the Enagic SD501 has 7 plates, each plate is 12.7cm x 17.78cm thus total area of 1,580.64cm sq.**
  2. On the website of Alkaway they do not give the size of the plates rather they give the size of the machine. What is important is the surface area of the plates.

## Water Cell Material

Platinum is universally accepted as the best material for water electrolysis because it is non-reactive, and because it is an excellent conductor. However due to its expense (the price of platinum US\$1,640.00 per ounce {28.35grams} as at Feb 2012) platinum coated titanium is the industry standard for water electrolysis. Titanium is a dense, durable metal but **it is very reactive and should not be directly exposed to water during electrolysis**. While some manufacturers use stainless steel or other alloys, the most reputable companies use titanium and platinum.

The surface area will determine the amount of these metals used on the water cell, hence the larger the surface area the more of these metals used and proportionately the higher the manufacturing costs. The plates can be covered with platinum in one of two ways. Either the plates get covered by a spraying technique which results in platinum that's only a few microns thick, or when done correctly the company will actually dip the plates in platinum resulting in a much thicker layer of this precious metal coating. Enagic dips the plates in **medical grade platinum**. This is important and essential for correct ionisation and extends the life span of the machine and this is an area that Enagic is most proud of.

## Solid Plates or Mesh?

Competing companies argue that their Mesh Plating is better, that it is "newer technology". While it is true that "mesh plating" can produce greater surface area in a smaller plate and thus a denser surface electrical current on a smaller plate, there is good reason why Enagic sticks with Solid Large Plating.

The idea of "mesh" is to create many pores, therefore multiplying the surface area. An example of this is activated carbon with its tremendous amount and depth of pores, which has an incredible surface area even for a small piece.

Activated carbon is often used to freshen the air and does a far better job than baking soda merely due to its pores / mesh like surface. Now, while "mesh" is good for increasing surface area so that the plate can be smaller, it has various drawbacks and it is VERY BAD for machine longevity. These devices "self-clean" by reversing the polarity of each plate, causing any build-up to repel off the plate. On mesh plates, this process is very ineffective. All of the pores in the mesh plates cause mineral build-up to get stuck despite plate polarity. So over a short period of time, you actually start losing the mesh altogether as it becomes filled with mineral build-up.

**Any machine using "mesh" may perform well right out of the box, but will rapidly degrade in performance with usage.** Mesh plates tend to break down due to expansion and contraction caused by the heat of electrolysis.

Cracks expose titanium to the water and require more frequent cleaning and one runs the danger of possibly having water that is contaminated with titanium. In areas of hard water, an ioniser with mesh plates will have a much shorter life span. While "mesh" is good for some things, it is certainly a bad thing for water ionizers.

The nice, smooth, large, solid plating that Enagic uses are EASILY cleansed of deposits and build-up as there are no pores for the minerals to latch on to. While it is more expensive to produce large solid plates vs. the cheaper mesh route, the machine will last far longer than any mesh plated machine and most importantly ensure that the water is not contaminated.

Alkaway machines including the Kangen 7 manufactured by Emco Tech are mesh plates sprayed with platinum.

## Production Capacity

The output capacity for the Alkaway "Kangen 7" is 2 litres per minute, and Enagic's SD501 is 7.6 Litres per minute. The inferior machines on the market do not have adequate surface area and enough power for consistent high quality water production, and they **have a slow flow rate. This is not an advantage as they would want us to believe.** Note that the Alkaway Kangen 7 uses an inlet pipe of ¼" rather larger pipe like Enagic's. They do this in order to reduce the flow so that you get some form of ionisation, because the plates construction and the amount of power is not adequate to produce good quality water.

## Power

Power output is also a very important factor of the electrolysis process. A higher wattage machine is more effective in the same way a higher wattage light bulb produces more light. For example power wattage of the Alkaway "Kangen 7" is 5 watts-150 watts (they give you a range...why? Because they use SMPS) compared to Enagic's SD501 at 230 watts.

Enagic is the only machine on the market that uses a transformer. On the Alkaway website they say, "**Power input to plates (higher power is used in the old Enagic system. However this tends to cause excessive build-up of calcium on plates)**" This is not possible...if there was massive build-up on the plates there is no way you can produce good quality water, not to mention that the Enagic SD 501 has both an automated cleaning system and a manual one.

The thing to note here is that the smaller the plates the quicker they heat up and fatigue. The best analogy to understand this concept is to consider when we are cooking using a small pot we usually use a small element on the stove, because that's all that is required. Conversely when we use a larger pot to cook then we need to use the larger element. We do not waste any power by doing this because we are using the right element for the right job. However trying to heat up the large pot on a tiny element it takes a lot longer and actually wastes power.

Since we are dealing with water running into a cell and flowing over electrolysed plates, the larger the plates and the more voltage being applied to them means stronger electrolysis, therefore producing superior water. Most of the competition will make you think that they are saving you money by having lower power consumption, however the

truth is that their machines would not sustain operating at high power and thus consistently shut down in the pretext of protecting the user.

For instance, the Power wattage for the Alkaway “Kangen 7” machines is 5 watts to 150 watts. The instructions on their machine state, *“When the machine is running longer than 15 minutes it will shut down automatically to protect the electrolytic cell. If you need to use the machine again, turn the machine on”*... Automatic Shut Off Heat Sensor: The assertion is... *“employs a thermal switch in the water cell to shut down the ionisation process if the temperature in the cells gets too hot...”* This is yet another spin off...the reality is a machine with this feature has a very poor constructed electrode and is prone to overheating. The cell could literally melt without this feature.

Having the understanding of what and how ionisation takes place, you can clearly see through this misinformation. Alkaway further clearly state on their website: *“We do not favour machines that use high wattage to promote faster flow rates; ionized water is much more effectively filtered and created with lower wattages and slower flow rate”*. This is contrary to the science behind ionisation of water, the quality of which is dependent upon the surface area and the amount of electricity power. Obviously Alkaway do not meet the requirements and want you to believe that is an *“advantage”*. Its features like these that dramatically extend the life expectancy of the ioniser.

The Alkaway “Kangen 7” uses the SMPS (Switch Mode Power Supply) which regulates voltage by turning the flow of electricity on and off at extremely high rates of speed. The SMPS regulator switches the flow of electricity between “full on” and “full off”. The power supply is at full off approximately half the time during ionisation to protect the mesh plates from overheating and melting. So if an ionizer with SMPS runs for 4 minutes, approximately 2 mins of that time would be no electric current being sent to the plates...So how much of the water is actually ionized? Enagic uses a standard transformer so the power is constantly flowing providing consistent, steady electrical charge.

Alkaway say on their website, *“avoid multi socket and household extension cords. Do not overwork outlet with numerous plugs and cords, can create risk of fire by heating”* One wonders the quality of construction of such a machine.

The Alkaway “Kangen 7” uses an Auto Flow Control Valve. The assertion by competitors is.... *“a flow control valve that allows you to fine tune the performance and gives you true functional control of the water pressure through your ionizer...”* This is a great spin from the fact that they are controlling the flow to produce alkaline water. The valve restricts the physical flow of the water so that less water passes over the electrodes at one time, allowing water to actually be ionized. If they had the right surface area and amount of electric power you wouldn’t require the valve.

Alkaway talk of adding calcium to the water. And then they say you don’t have to but you can choose to. What they are not telling you is that the machine is not able to properly ionise water. You already have the minerals in the water and if the machine is well constructed you do not need to add any calcium.

According to the Alkaway website, most amazing is their claims regarding the range of alkalinity that their machine can produce - 2.5pH to 11.7pH. Scientifically this is impossible. The sum total of the pH scale is 14...that’s science and you cannot change that, yet what they are alluding to is that the pH scale is of 14.2 i.e.  $2.5 + 11.7 = 14.20\text{pH}$ . This is complete ignorance of the highest order for one who promotes themselves as experts in the industry of water ionisation.

## Marketing Strategy and Costs

It’s interesting to note that Alkaway say that Enagic has an MLM marketing structure and that is the reason Enagic machines are over-priced, yet they have a similar structure. They confirm that as a distributor of their product, when you get to the level of Master Distributor you could get the machines at least 65% of the retail price and this is subject to negotiation.

Note that whilst Enagic use the Direct Selling strategy with an element of MLM, that in itself makes the product cheaper. Enagic’s products are straight from the manufacturer to the distributor and to the end consumer, meaning that there are no profit mark ups by wholesalers or retailers, and there are no marketing or distribution costs, no fixed overheads etc., therefore making the product cheaper to the end consumer. For example if the SD501 was sold

through the normal chain from the manufacturer to the wholesaler and then the retailer, the pricing would have to be higher by a minimum of 64%.

Understanding the pricing of the product is paramount because the competitors at times will insinuate that our products are expensive because of our marketing strategy. In truth, our products are very competitively priced and when one understands the pricing methodologies then it clear for one to see that the competition is actually highly marked up and rather expensive.

Understanding how typical retail pricing model works (normal 2.5/3/3.5 times mark up during each stage of the product movement is important.

- **Manufacturer:** Establishes “factory direct” or “bulk wholesale” pricing based on the total cost to produce a product. This will include the materials, labour and overheads.
- **Wholesaler:** Established “wholesale” pricing based on their cost to obtain the product. There can sometimes be multiple wholesalers involved in a product getting to the market.
- **Retailer:** Establishes “retail” pricing based on their cost to obtain the product, as well as associated costs in selling/ promoting /distributing the product i.e. advertising, employees, retail location etc. Retailer typically has the highest amount of expenses associated with selling the product, which is why they typically have the largest most substantial mark up.

**Manufacturer Bulk Selling Price**= Manufacturing Costs x 2 (\$250x2=\$500)

**Wholesale Distribution Selling Price**=Wholesale Cost x2 (\$500x2=\$1000)

**Retail Selling Price**= Wholesale cost x2 (\$1000x2=\$2000)

Let’s “reverse the concept” with an Alkaway “Kangen 7” ioniser in the market retailing at \$2,000

Retail Price would equal  $\$2000/2 = \$1000$

Wholesale Price would equal  $\$1000/2 = \$500$

Manufacturers Price would equal  $\$500/2 = \$250$


\$250  \$2000= Mark up of 8 TIMES

#### **“OVER PRICED” Enagic SD 501 Using the Above Pricing Formula**

Let’s “Reverse Engineer” the SD 501 retail price of \$4150

Retail Price \$4150- 8 Point Payout + Bonuses=\$1,670

Manufacturers Price would be  $\$1,670/2 = \$835$

\$835  \$4150=Mark up of 4.9 TIMES

So which ionizer is overpriced???

If we followed the traditional retail pricing model, the Enagic SD 501 would retail for a price of approximately \$6,680, which translates to 37.87% higher than the actual price of SD 501.

Please note that everyone on the internet compares themselves with Enagic. And there is a reason for that - they know that Enagic Machines do provide people with amazing results. Only inferior products have the marketing strategy of equating themselves with industry leaders.

*Compiled by John Ngatia, Adelaide.*