Vaping Ohms Explained

15th December 2015 | by Dave Allan

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Since the introduction of the electronic cigarette a few years ago, the vaping industry has been continuously shifting towards newer products and vaping styles and one very important aspect of this transition is the ohms we're vaping on today.

If you're familiar with the online communities you're probably hearing a lot about sub ohm vaping, twisted coils, direct lung hits and massive clouds but for a beginner these terms might be confusing and could give you the wrong impression about the general aspects of vaping.

Every week I answer to several email and dozens of chat requests where people ask me what ohms should they choose, if sub ohm vaping is better than regular vaping and why is the vapor coming off their newly bought mod so hot. For this reason I decided to take some time and write this article about vaping ohms explained, so that any e-smoker, regardless of his or her experience with e-cigarettes could understand the differences between coils.

What is an Ohm

First of all, ohms represent a unit of measurement for resistance, and when it comes to vaping they translate to how difficult is for the electrical current from the battery to pass through the heating coil. The lower the resistance, the faster a coil heats up to a certain temperature and controlling this value is key in delivering a satisfying experience.

Vaping Ohms

The link between Ohms and vapor

Back when electronic cigarettes were first introduced on the market there was no such thing as sub ohm vaping. Many of the initial atomizers and cartomizers had resistances between 2 – 3 ohms and they were designed to replicate the feeling of tobacco cigarettes to the last detail.

These devices were called cig-a-likes and they were able to produce a decent amount of vapor from those resistances. However, because they weren't powerful enough and couldn't deliver a consistent amount of nicotine (despite some flavor cartridges topping a maximum of 3.6mg) manufacturers started developing improved versions of the same products with more powerful batteries and lower resistance atomizers.

There's a direct link between resistance and the amount of vapor a device can produce, and it's usually the lower the ohms the bigger the clouds. This simple rule slowly transformed into a hobby for vaping enthusiasts a couple of years ago, and they started developing vaping mods and atomizers in an effort to push the limits of their devices for the biggest clouds ever puffed.

People noticed that by lowering the resistance the amount of vapor was getting bigger and bigger, however the only limit was the continuous discharge rate of batteries.

But, what started out more as a hobby, quickly developed into a separate niche with numerous small companies starting to manufacture mechanical mods and rebuildable atomizers to appeal to those vapers who wanted a lot more than a standard cig-a-like or your standard Ego style Vaporizer pen.

Above Ohm Vaping

Nobody knew back then that this small part of the industry would surpass the traditional electronic cigarette in only a few years and this is why nowadays we have so many mods and rebuildable atomizers instead of cig-a-likes and other 'cigarette' shaped devices.

But this transition of the industry had a positive effect on the millions of people who are using e-cigarettes today and this is mainly due to the wider choice of devices suited for each style of vaping.

The two main styles of vaping

And speaking about the different styles of vaping, we have two main categories of e-smokers – the ones who prefer mouth to lung hits and the ones who prefer lung hits. Mouth to lung vaping is just like puffing on an actual cigarette, with the vapor going first into the user's mouth and then lungs; while direct lung vaping means inhaling the vapor straight into the lungs.

People who prefer mouth to lung vaping are usually the ones who use standard resistances (above the 1 Ohm limit) and those who prefer direct lung inhale use sub-ohm resistances (below the 1 Ohm limit).

If you are still a smoker, want to make the transition from smoking or are a vaping beginner, then probably mouth to lung is the best option for you, as it comes as a reflex from puffing on combustible cigarettes. Inhaling vapor straight into your lungs is something that you can't do with a tobacco cigarette and this style of vaping might seem a big weird and uncomfortable at first.

The reason for which above ohm resistances remain popular with mouth to lung vaping is due to the restrictive draw these devices can offer and the similarities with actual cigarettes.

Some people prefer higher Ohm resistances

There are still people out there who prefer vaping on above ohm resistances, and their number is probably greater than that of e-smokers using sub ohm devices. While the amount of vapor produced is not as massive as with a sub ohm resistance, some people are more than satisfied with the whole experience and wouldn't trade it for something else.

Low Ohm Vaping

The vapor is cooler, smoother and the draw is tighter, however the battery can last a lot longer and the amount of e-liquid used is way less than with a sub ohm device. We call above ohm (or standard / regular) resistances anything above the 1.0 ohm limit and today you can usually find coils rated for 1.0 Ohms, 1.2 Ohms, 1.5 Ohms, 1.6 Ohms, 1.8 Ohms and 2.0 Ohms, depending on the device and manufacturing company. Of course the vapor tends to get warmer and warmer as you go from 2.0 Ohms to 1.0 Ohms, however not as warm as with sub ohm coils.

So, if you are a smoker trying to make the switch or a vaping beginner then a device with 1.5 – 1.8 Ohm coils would be advisable, however, in the end everything depends on personal preference. Not as a general rule, but numerous vapers start out with above ohm coils and slowly make the transition to sub ohming because they like warmer vapor or bigger clouds. And given the fact that many of today's products are highly customizable, to go from standard ohm coils to sub ohm coils could just mean purchasing a new clearomizer or changing to a different type of atomizer heads.

If you want to give vaping a try and want an experience that's relatively close to smoking then you have two options – buy a starter kit that comes with everything you need inside the box or buy a mod and atomizer separately. The second option gives you more versatility and it's very easy to upgrade to a different vaping style afterwards.

Our recommendations for above Ohm vaping

The V2 Pro Series 3, the Vaporfi Vice, and the Joyetech eVic VTC Mini are all excellent options of starter kits which come with standard coils inside the box. On some of these devices you can also experiment with sub ohm coils, which are either included in the box as spares or can be bought separately.

The tanks or clearomizers also come with adjustable airflow and the user can easily switch between a tight draw for mouth to lung hits and an airy draw, perfect for direct lung inhale.

On the other hand, if you prefer to buy your mod and tank separately then my suggestion would be to go for an iStick 40W, a Tesla Two, the Vaporfi Vox Mini or the iStick 100W if you're best guess is that you'll need more power in the future.

In terms of tanks, the Aspire Nautilus has always been one of the best devices for mouth to lung hits, but you can also go for any product that offers spare resistances above 1 Ohm. On the other hand, if you like to experiment and want to build your own coils, then a Kayfun Lite Plus RTA would be an amazing performer from this category.

High Ohm vape recommendations

However, a quick browse on the internet, a visit to a local vape shop or lounge or some time on YouTube checking out your favorite reviewers might give the impression that everything even closely related to vaping has to do with sub ohm resistances, rebuildable coils and puffing out huge clouds. And yes, I have to admit, this is the latest trend in the vaping industry – but if you're not into this sort of thing, it doesn't make you less of a vaper.

As I mentioned before, everything should be based on personal preference and one should buy products based on the experience he or she enjoys, not by being bullied by vaping friends, the media or the idea of puffing out massive clouds just for fun.

What is sub ohming

But what is sub ohm vaping, and why is this such a popular thing at the moment? Well, it probably all started with the RDAs or rebuildable dripping atomizers, which allowed the user to build coils of any resistance and the trend slowly transitioned to tanks and clearomizers.

Sub Ohm Vaping

Sub ohm vaping implies using a resistance lower than 1.0 Ohms on your mod, but mainly it refers to resistances ranging from 0.5 Ohms and below. These are capable of creating higher temperatures and allow for a bigger quantity of e-liquid to get evaporated, thus the massive clouds we all see.

The increased quantity of e-juice combined with the higher temperature can produce a warmer and more flavorsome vapor than in the case of standard resistances, offering a superior experience when it comes to e-smoking in general.

The coils today can go as low as 0.15 Ohms (in the case of Kanthal) and there are mods out there that can fire even lower so technology is no longer a problem. Also vapers have discovered that by twisting two or more types of wire together they can create complex coils like 'twisted', 'claptons', 'fused claptons' and 'alien claptons' which in terms give an even better flavor.

Downsides of sub Ohm vaping

Sub ohm vaping can be very rewarding, but at the same time it has a few downsides. The first is that it's mostly suitable for direct lung inhales, which is a style of vaping not that familiar to smokers or beginners. In order to fully enjoy the big clouds you need to draw the vapor straight into the lungs, which requires a very airy draw on the tank or atomizer.

Secondly, the vapor delivered by sub ohm coils is much warmer than in the case of standard coils, and this – while a pleasure to some – might not appeal to the wider majority. Thirdly, a sub ohm coil goes through e-liquid a lot faster so you need to increase your monthly supply (and expenses).

And since we're talking about e-liquids, there are some things you need to know. In the case of regular coils, you can use any type of VG / PG ratios you want and any concentration of nicotine available, but when it comes to sub ohm vaping there are a few rules you need to be aware of.

Because it vaporizes a lot more e-liquid, together with the big clouds, it also delivers a bigger quantity of nicotine. This is why, in most cases, if you're used to vaping on 12mg for instance, switching to a sub ohm coil directly implies lowering the concentration to 6mg or even 3mg. Taking a 12mg puff on a 0.3 Ohm RDA could make you feel very light headed so if it doesn't feel right, go for a lower concentration.

Also, you need to watch out for the amount of Propylene Glycol in your juice, and always go for a higher Vegetable Glycerin concentration. PG is an irritant and because you're inhaling so much of it with these sub ohm coils it might enhance the 'throat hit' feeling that nicotine gives to an unpleasant experience.

However, with higher VG e-liquids, in the case of sub ohm coils there's always the risk of under saturation of the wicking material, and the occurrence of dry hits (burnt taste). If this happens repeatedly you will need to lower your wattage, change the type of atomizer or go for a lower VG concentration.

Sub Ohm vape recommendations

If you decide that sub ohm vaping is right for you, then I have a list of products that are just perfect for this sort of thing. From starter kits like the iStick 60W TC, the Kanger Nebox, the Vaporfi VOX 2, Eleaf iJust 2, eVic VTC Mini (with sub ohm coils), the Subox Nano (with the sub ohm coils), the Smok X 2, or the Subox Mini to individual mods like the Tesla Nano 100, the iStick 100W, the Lost Vape Esquare, or the Tesla One (and the Tesla Two) paired with matching sub ohm tanks like the Smok TFV4, Joyetech Delta 2, or Innokin iSub are all fantastic for delivering clouds like locomotives.

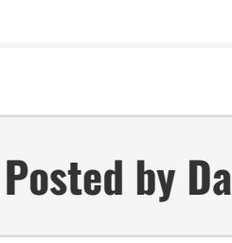
Sub Ohmning recommendations

On the other hand if you enjoy building your own coils, want to experiment with different types of wire and are particularly skilled with your hands, then an RDA like the Vaporfi vBit, or the Atty Cubed by Wotofo would be great products to purchase.

Many of the newer generation mods offer a feature called 'temperature control', which works with Nickel or Titanium coils and gives the user the option to set a desired valued between 200 – 600F. These coils generally have a sub ohm resistances and fire as low as 0.05 Ohms. Because the user can set a desired vape temperature, it has total control on how cool or warm he or she wants the vapor to be, and the feature also prevents dry hits.

When using sub-ohm coils you need to make sure you have a regulated mod that fires to the desired value, and if you are using a mechanical mod, make sure you read the article about general e-cigarette safety tips.

Posted by Dave Allan



Former pack-a-day smoker, I discovered electronic cigarettes back in 2011. Since then vaping has slowly turned into my hobby and my full time job. I've tested hundreds of e-cigarettes and mods across the years and constantly used my knowledge and experience to help others make the switch. I'm passionate about technology, I enjoy reading and I love big flavorful clouds.

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Best Herb Vaporizers
Best Vape Pens
Best Pod Vapes
Best CBD Vape Liquids
Best RDA Vapes
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Best Vape Battery Chargers
Best Squonk Mods

RECOMMENDED

Lost Vape Orion Plus

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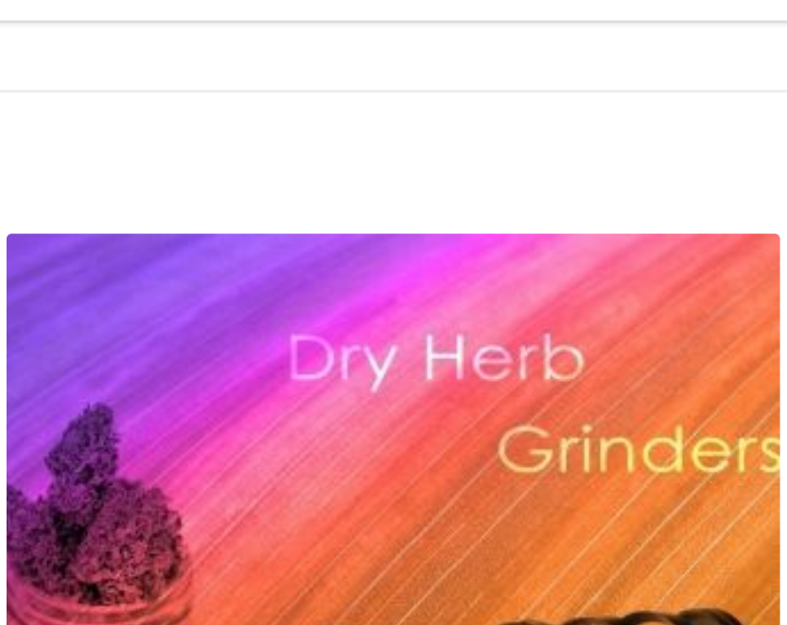

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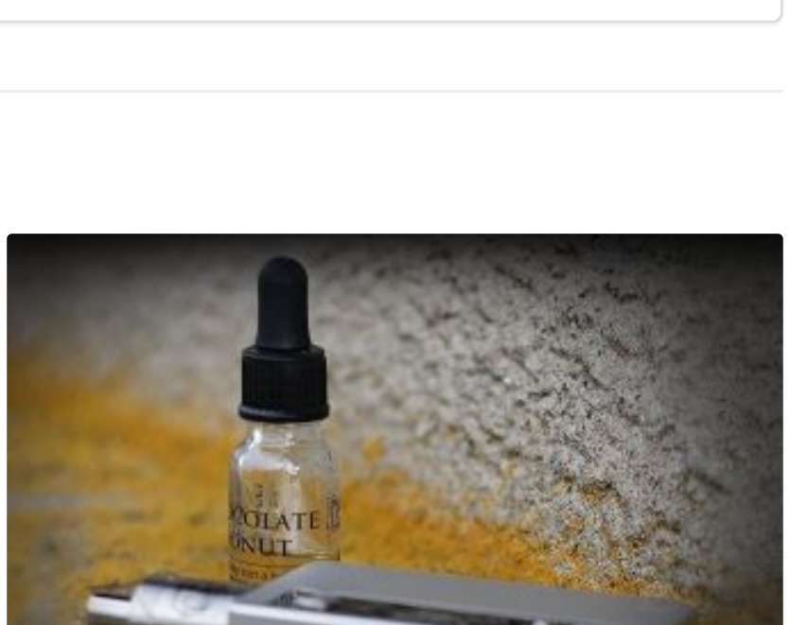

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