

## What Are Electronic Cigarettes?

Adapted from [http://www.xomba.com/what\\_are\\_electronic\\_cigarettes](http://www.xomba.com/what_are_electronic_cigarettes)

The electronic cigarette was developed in China in 2004 and designed to replace the smoking of tobacco cigarettes and cigars. In spite of indoor smoking bans sweeping across the globe, many smokers are finding it difficult to quit. There are a variety of nicotine replacement products but these drug delivery systems in no way replicate the smoking experience. The e-cigarette is different in that it aims to both deliver nicotine and also simulate to some extent the experience of smoking a traditional cigarette.

### Using an E-cigarette

The e-cigarette, or e-cig, consists of a mouthpiece containing a cartridge with a nicotine solution, a heating element or atomizer, a lithium-ion battery holder and finally an LED at the tip of the e-cig. The way e-cigarettes function means they also contain some electronic circuitry and an airflow meter. They come in different designs, often made to look like a fountain pen so can be discreetly kept in one's pocket but also available as a replica cigarette.

Using an electronic cigarette is pretty much like one of those nicotine inhalers one can buy in the pharmacy. There is no need to switch it on but rather just inhale through the mouthpiece. The airflow sensor then becomes activated and switches on the heating element. A short burst of heat vaporizes a small amount of nicotine solution which is then inhaled. At the same time, the LED at the tip of the e-cig lights up showing that the battery is functional and the device operational but also simulating the burning tip of a tobacco cigarette. The nicotine vapor is largely absorbed through the lungs, just like tobacco smoke. Exhaling actually creates a "smoke" vapor even though, obviously, the e-cig doesn't emit smoke. After an e-cig puff the device switches itself off automatically.

### The Smoking Experience

One question that arises is why develop an electronic device, with the possibility of it breaking one day, when there are already cheaper nicotine inhalers on the market? The motivation here is that the experience of using an inhaler is just not particularly enjoyable. It may be an effective nicotine delivery method, but it tastes like... well, like nicotine! On the other hand, e-cigarettes come in different flavors depending on the cartridge used, some of them even trying to duplicate traditional brands such as Marlboro and Camel. As has already been stated, the real aim of the electronic cigarette is to replicate the smoking experience, not just to deliver nicotine. The distinction now needs to be made between quitting smoking and quitting nicotine. The two are different and the e-cig brings this into sharp relief.

### Are E-cigarettes Safe?

The nicotine solutions are available in different strengths and flavors with the main solvent being propylene glycol. Different recipes exist, sometimes with tobacco essence added or flavorings such as menthol. Rather like some pipe tobaccos e-cigs also come in exotic flavors such as strawberry, vanilla or coffee. Although tobacco smoke contains a huge cocktail of dangerous chemicals the novelty of the liquid nicotine ingredients has raised concerns about their safety. According to the US Food and Drug Administration, propylene glycol is considered safe for human consumption in foods and medicines, but there are indications that inhaling the chemical can cause irritation to some individuals.

### Are E-cigarettes Legal?

The profile of electronic cigarettes has suddenly increased when they were exhibited at the Consumer Electronics Show in Las Vegas in January 2009. There are many online stores selling them but do check on their legality to avoid the possibility of confiscation by customs. Confusion reigns at the moment as they are perfectly legal in the USA and the UK but classed as a poison in Australia. The arguments as to their safety and their legality have just started to heat up.