

# Nuvo and Propylene Glycol

## What is Propylene Glycol?

Propylene glycol (PG) is a delivery agent derived from glycerin. It is commonly used in a variety of pharmaceutical, personal care and consumable products. These include items that are injected, applied topically, ingested and inhaled. Propylene Glycol can be found in many common items, including: deodorant, toothpaste, beauty products, moisturizing lotions, baby wipes, Asthma inhalers, even ice cream.

## Propylene Glycol in Nuvo Cig

Nuvo's cartomizers contain Propylene Glycol. It is the primary ingredient in most electronic cigarette liquids (e-liquids) available on the market today. Vegetable Glycol is sometimes used as a substitute, but most consider it vastly inferior to PG. PG is what produces the smoke like vapor you see exhaled from a Nuvo Cig.

## Is Propylene Glycol Safe?

Propylene glycol is considered a safe ingredient for cosmetics, food and pharmaceuticals. It is on the US Food and Drug Administration's list of Generally Recognized As Safe (GRAS) ingredients.<sup>i</sup> The FDA also considers it safe in vapor form.<sup>ii</sup> The World Health Organization,<sup>iii</sup> <sup>iv</sup> as well as Health Canada<sup>v</sup> recognize it as safe for use.

## Propylene Glycol Studies

Many scientific studies have been done on the safety of PG as an ingredient in consumable products, proving its safety. Since PG is inhaled as a vapor in ecigs, we are specifically concerned with the safety of inhalation of Propylene Glycol in vapor form. In long term vapor

studies, administered doses were hundreds of times higher than would normally occur. No serious side effects were found. The results showed that air containing PG vapors in amounts up to saturation are completely harmless, with no essential differences between test and control groups.<sup>vi</sup>

## **The Controversy Around Propylene Glycol**

There is a lot of misinformation concerning propylene glycol. It is not the sinister and dangerous chemical some claim.<sup>vii</sup>

### **Propylene Glycol vs. Ethylene Glycol**

Propylene Glycol is often mistaken for a dangerous chemical called Ethylene Glycol. The body metabolizes PG naturally, while ethylene glycol is highly toxic.

### **Propylene Glycol in Antifreeze**

Claims have been made that propylene glycol is unsafe for human consumption because it is also an ingredient in non consumable products, such as antifreeze. These claims are misleading. Ethylene Glycol, is the normal ingredient used in antifreeze and is highly toxic. PG is substituted specifically to make it safer in case of accidental ingestion by animals or children. The American Society for the Prevention of Cruelty to Animals (ASPCA) actually recommends the use of propylene glycol-based antifreeze because it is much safer than ethylene glycol should pets accidentally ingest it.<sup>viii</sup>

## **Allergies & Side effects**

### **Allergies**

The risk of being allergic to propylene glycol is very low. Since so many products used on a daily basis contain PG, most people that are allergic are already aware. For those few, Vegetable Glycerin can be used as an alternate to PG.

### **Side Effects**

The most common side effects of Propylene Glycol inhalation are: Dry mouth, sore throat, and increased thirst. These symptoms typically last a

few days to a few weeks as the body gets used to PG. Drinking more fluids can help alleviate these symptoms.

If you are using Nuvo Cig as a complete replacement for smoking, your body will also go through tobacco withdrawal. It is very easy to mistake these withdrawal symptoms as side effects caused by using a Nuvo ecig, but that is not the case. These annoying but harmless side effects of quitting smoking may include: Nausea, constipation, increased appetite, increased coughing, gas, bad breath, stomach pain, insomnia, depression, loss of concentration, irritability, dry throat, runny nose, dizziness, and vertigo.<sup>ix</sup>

These symptoms can last several weeks. Your body has grown accustomed to tobacco smoke and all of the other harmful chemicals packed into cigarettes. Be patient as your body heals. And keep in mind any temporary negative effects are greatly outweighed by all of the positive effects from cutting out smoking!

Further Reading - If you'd like to do more research on propylene glycol, Wikipedia is a great place to start.

[http://en.wikipedia.org/wiki/Propylene\\_glycol](http://en.wikipedia.org/wiki/Propylene_glycol)

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#### References

- i [http://en.wikipedia.org/wiki/Generally\\_recognized\\_as\\_safe](http://en.wikipedia.org/wiki/Generally_recognized_as_safe)
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- vii <http://blog.myskin.com/insights/propylene-glycol-the-truth-revealed/>
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