

Understanding Pollution: What We Should Know about Methane

Methane is a colorless, and odorless gas that is commonly used, but is dangerous to both man and the environment.ⁱ It is used commonly as a source of fuel, or to power lights.ⁱⁱ Additionally, methane is used in the manufacture of organic chemicals.ⁱⁱⁱ So, needless to say, methane is a well-known, and well used substance in our world today. But, with the sweet there must be the bitter. Methane can have severe effects on human health, and its impact on the environment cannot be ignored. Also, the sources of methane might surprise you; they did me.



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Since it is a naturally occurring gas methane comes from a number of sources both manmade and natural. The main man made sources of methane include fossil fuel production and livestock farming.^{iv} Fossil fuel production creates 110 million tons of methane a year, and accounts for 1/3 of all manmade methane emissions.^v In fact, natural gas, which many people use to heat their homes, is mostly made up of methane.^{vi} The other big manmade source is livestock farming. Animals like cows, sheep, and pigs fart, and fart a lot. When they fart they release methane.^{vii} Now, you may be laughing, but understand that the methane from livestock also accounts for about 1/3 of manmade methane emissions.^{viii} That's a lot of gas. Moving on, let's look at some of the natural sources. Natural sources of methane include wetlands, termites, and the volcanoes of our world.^{ix} Every day, a termite produces 1 microgram of methane, which isn't much, but if you add up all the methane produced by every termite on the planet you are looking at 20 million tons of

methane annually.^x That's a fairly large amount of methane, and a huge number of termites! We then move onto wetlands where chemical reactions occur naturally, and account for roughly 1/3 of all methane release worldwide.^{xi}

As mentioned previously, methane is a colorless and odorless gas, or a liquid if put under pressure.^{xii} Because of this, it is very difficult to know if you are being exposed to methane, until you are already suffering from its effects. Methane replaces oxygen in the air, and the body inhales it just like oxygen.^{xiii} This can cause an increased breathing rate, an increased heart rate, loss of coordination, and can have an effect on what emotions we experience.^{xiv} These are just the early effects of methane exposure, and if you experience them you need to leave wherever you are and find fresh air as quickly as possible. If your exposure continues for too long you will begin to experience nausea, vomiting, the possibility of collapsing, convulsions, falling into a coma, and finally death.^{xv} Needless to say methane is no joke. Another issue with methane is that it is highly, highly flammable. Leaking methane gas can cover a fair distance, and if exposed to any heat source or open flame will ignite all the way back to where it is leaking.^{xvi} That's methane in its more common gas form, but its liquid form has its own hazards. Liquid methane is also highly flammable, and if your skin is exposed to liquid methane it will cause frostbite, and even has the potential to completely freeze your eyeballs if somehow your eyes come into contact with it.^{xvii}



Like carbon dioxide with which it shares so many traits, methane is a greenhouse gas.^{xviii} What does that mean? Well, it means that methane that is released into the air travels into the atmosphere, and once there it traps the heat coming from the sun.^{xix} Methane does not remain in the atmosphere for as long as other greenhouse gases, but it is much more effective at trapping the sun's heat than other gases. Compared to carbon dioxide, which is the gas that most people mention when talking about greenhouse gases, methane is 84% better at trapping heat from the sun in the atmosphere, and it is estimated that methane accounts for 25% of manmade global warming.^{xx} That is methane's effect on a global scale. Locally, as mentioned earlier, methane is highly flammable. Methane fires can occur in mines, over landfills, and wetlands if exposed to even a single spark.^{xxi} In fact, in September of 2013, 37 families were forced to evacuate their homes due to a leak from a methane gas line, and fire companies were forced to be on standby for days, such is the danger of a methane fire.^{xxii}

So, we've discussed some of the sources of methane, its health hazards, and its effects on the environment, but you may be asking yourself what you should take away from all of this. I mean, methane is used by 61% of all household in the United States for heat.^{xxiii} That's a lot of people who are not going to want to give up their heat just because they read an article that explains a little about methane. Still, knowledge is power. By learning about what you are using you are aware that what you do has benefits and consequences. Ultimately, it is up to every individual to decide for themselves if the benefits out way the consequences, and vice versa. That's what life is. Making well informed choices with the understanding that what you do will echo down in some way shape or form throughout history. Should we stop using methane gas all together, and get rid of every cow, sheep, and pig farm in the world? Probably not, but you could think twice before ordering that steak at dinner. By being aware that a problem exists a solution can be found.

About the Author



Dominick Principe is a graduate of Rowan University with dual Bachelor Degrees in Elementary Education and Writing Arts. He is a prolific reader who devours any book put before him, and feels that life is one great long book without an end. He fills his hours constantly exploring new information, and seeking to educate himself in the ways of the world. He puts all of that knowledge and his passion for learning to good use teaching English as a second

language to students of all ages. When his nose isn't buried in a book, or in class teaching, then he can generally be found typing away at his computer working on some random piece of writing that he was inspired to do.

ⁱ "Hazardous Substance Fact Sheet: Methane." *New Jersey Health Department*. New Jersey Health Department. Web. 1 Dec. 2014. <<http://nj.gov/health/eoh/rtkweb/documents/fs/1202.pdf>>.

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