

# Shortage of helium essay sample



**ASSIGN  
BUSTER**

The second element on the periodic table; He, also known as helium, is a gaseous element that is located somewhere in the sun's atmosphere and deep underground in some natural gasses (Helium 2012.) Helium can be refined and later stored in tanks to be sold to the market. But where exactly does the helium go after it has been refined? And in what state of matter does Helium sell at the most? It is unknown to many, but helium is actually used for more than just blowing up balloons for birthday parties.

Helium is rare because there are no biosynthetic ways of making it, and all the helium that we currently have in the world is a result of the decaying uranium and thorium (Helium 2012.) It is also the most stable element in the world (Global 2007) and when its temperature hits below 4.2 Kelvins or four degrees higher than absolute zero, helium reaches its liquid state and it reaches one of the coldest points an element can ever reach. This is why helium is mostly used as a coolant. When liquid helium is put next to another object, the other object's energy is rapidly being extracted which cools the object down.

This technique is applied when cooling the magnets of MRI machines as well as cooling the magnets of nuclear magnetic resonance, NMR, machines which are used to map the chemical structure of molecules (Campoy 2007.) Clearly helium plays an important role in the science industry as it can be used in research to find cures to deadly diseases, create new sources of energy and answer questions about how the universe was formed, because when it is depressurized and at its liquid state it is the coldest liquid on earth and it can resemble conditions in outer space (Campoy 2007.) Not only that but it is also important in mass spectroscopy welding, production of

computer microchips, fiber optics, liquid-fuel tanks of rockets and missiles as well as many other technological means. Helium is used in large amounts every year to pressurize space shuttle fuel tanks (Helium 2012.) As noted, the use of helium exceeds that of raising hot air balloons, party decorative balloons and people's voices, it is very important to science and this limited resource is in high demand.

The US government began regulating and running the helium industry in the early 1920s and had continued to run it for about 70 years, but since the mid-90s the reign was passed over to the oil and natural gas industries (Helium 2012.) In the 1925 when blimps and other airships seems like promising and useful military necessities, the US government set up a national helium program to ensure that the government had enough supply for their defense's demand and called this storage facility the Bush Dome. This reserve had become the world's largest supplier of helium; however that was in no means the government's intention (Global 2007.) In the 1960s the government opened the Federal Helium Reserve in the Hugoton-Panhandle Gas Field that spans over 11, 000 acres of land across Texas, Oklahoma and Kansas (Plumer 2012.) As soon as private demand exceeded that of the federal government's, in 1996 the Republican-led congress passed the 1996 Helium Privatization Act, which intended the reserve to supplement the production of helium for private sectors (Global 2007.) Another initiative that the Act called for was the Bush Dome's sell off by the year 2014.

According to a report done by the National Research Council, the Federal Helium Reserve provides about- one third of the world's helium each year. At a slow rate this helium is soon going to be gone and by law, the reserve

could potentially run out of money and then the helium could stay locked up in the reservoir, and no one will have access to it. Although it is not noticed much, the price of helium is slowly rising every year in fact it seems to be rising faster than inflation (Figure 1). People are being limited on the amount of tanks of helium that they can buy. For example Leon Sorin from Balloons by Sorin used to get 10 tanks of helium delivered to him every week, and now he is only getting 1 to 2. Clearly this is a problem for him because his store literally runs on helium (Global 2007). Some party balloon stores are filling balloons with mixtures that contain less helium; this is causing the price in balloons to increase.

I even encountered a problem with this helium shortage, when last week I was refused my weekly allocated 6 balloons for my street team meeting by the Titan Pride Center because they hadn't received their helium delivery. Countries in Asia are quickly expanding their electronics industries and developing welding techniques, which call for a higher demand in helium. The demand for helium in the United States has risen over 80% in the past two decades, and due to its growing industries, at more than 20% in areas such as Asia (Campoy 2007.) One laboratory in New York experienced huge prices increase, from \$4 a liquid liter to almost \$8 in the span of a summer. As we see in Figure 3, the demand for helium increase and the supply remains inelastic because there is no production of helium and there is only a fixed amount. At this point, the supply and demand curves have to meet at a new point of equilibrium to give the new equilibrium price. Because like I mentioned before, there is no way of producing helium biosynthetically,

there are no close substitutes which makes helium almost a necessity and very inelastic (Helium 2012).

If there was a tax to be imposed on helium for any given reason, a tax on suppliers would cause a reduction in supply, which would essentially cause the supply curve to shift to the left. In this case, the consumers are not benefitting as much as they would if helium had close substitutes and was able to be biosynthesized. Also the producers are not making as much money as they would have made in other circumstances. Ultimately consumer surplus, producer surplus and total surplus in the helium market has decreased altogether. As a result of the leftward shift in the supply curve, we have resulted with a dead weight loss. This DWL is the certain area in the market in which no one benefits from production, and is a loss to consumers because they are not consuming and a loss to producers because they are not selling. At this region on the graph, producers are not selling the product because not too many people are willing to pay the more expensive price.

In the case of helium, some labs are not receiving enough funds to keep their research going and those who are receiving grants are being left with little to no money after they have purchased the helium that is necessary for their research. This leaves them with no money for marginal costs and now they really have to consider the tradeoffs of purchasing helium or not having other resources that they need. The price increase is making running scientific equipment unaffordable for these labs that are putting time and effort into finding cures and studying important diseases and syndromes like Alzheimer's (Campoy 2007.) It is clearly imperative that the remaining

helium be used wisely and properly. The government has to prioritize who gets the supply and they are currently placing agencies such as NASA and other medical companies at the top of the supply chain. Experts and politicians are working on a bill that would revamp the Federal Reserve, but that is still in the process and needs time we might not be able to afford with these high prices of helium.

#### Works Cited

18, September. "Global Helium Shortage Expands." Los Angeles Times. Los Angeles Times, 18 Sept. 2007. Web. 30 Oct. 2012. < <http://articles.latimes.com/2007/sep/18/business/fi-helium18> >.

Compoy, Ana. "As Balloons Demand, Helium Is in Short Supply." The Wall Street Journal. N. p., 5 Dec. 2007. Web. 29 Oct. 2012. .

"Helium Supplies Endangered, Threatening Science and Technology | Newsroom | Washington University in St. Louis." Helium Supplies Endangered, Threatening Science and Technology | Newsroom | Washington University in St. Louis. N. p., n. d. Web. 30 Oct. 2012. .

Plumer, Brad. "Congress Turns Its Attention To... America's Helium Crisis." Washington Post. The Washington Post, 14 May 2012. Web. 30 Oct. 2012. .

Washington University in St. Louis. "Helium Supplies Endangered, Threatening Science And Technology." ScienceDaily, 5 Jan. 2008. Web. 20 Oct. 2012.