

Carbon-Monoxide (CO): A Poisonous Gas Emitted from Automobiles, Its Effect on Human Health

Ohwojero Chamberlain

Abstract

The emission of carbon monoxide CO from automobiles has caused hazard to human health. Human beings are faced with health challenges as they breathe air in their living environment. The breathing in of carbon monoxide has caused reduction of oxygen in take by man; because when carbon monoxide is breathed into the lungs, it sticks to the hemoglobin thereby preventing oxygen flow. This affects the transportation of oxygen by the blood which causes suffocation in man. The cluster of automobiles on roads and streets globally has posed health challenge. Hence this research is focused on finding solution to the effect of carbon monoxide CO on human health. To carry out this study the researcher used two automobiles that have different type of exhaust system. The researcher exposed four English rabbits to the two different exhaust systems in different rooms together with white fabrics in each of the rooms for one week to check for level of carbon deposits on the white fabrics after one week of the experiment.

Keywords:

Carbon monoxide; Automobile and Carbon monoxide emission; Catalytic converter; Environmental pollution

Introduction

Carbon monoxide (CO) a poisonous gas that is emitted from the exhaust system of a combustible engine of an automobile that uses petrol or diesel as a fuel is odorless, colorless, tasteless and non-irritating. The incomplete combustion process that occurs in an engine; result to the emission of carbon monoxide (CO) as a waste product from the exhaust system of vehicles. Environmental carbon monoxide is produced by incomplete combustion process from any carbon containing fuel. The US department of labor occupation safety and health administration, in 2003 described carbon monoxide as an industrial hazard that result from the incomplete burning of

natural gas and any other material that contains carbon, such as gasoline, kerosene, oil, propane, and coal, burning of wood, forges, and blast furnace and

coke ovens. States that amount of carbon monoxide present in the human environment naturally is about (40%) and artificially (60%) due to human activities. A great amount of carbon monoxide (CO) is released into the atmosphere by burning fossil, fuels, car exhaust emission and burning of natural gas. Carbon monoxide as a poisonous gas is a major cause of illness and deaths in the USA, most cases result from exposure to the internal combustion engines and to stove burning fossil fuels.

Literature Review

Carbon monoxide (CO) is an intermediate product of the combustion of all carbon species and cause of environmental pollutant. By a way of comparison from the characteristics of carbon monoxide of being colorless, odorless, tasteless and non-irritating, made an assertion that carbon monoxide is slightly lighter when compared to air.

Carbon monoxide has a noxious sound effect that is caused by reversible displacement of oxygen from haemoglobin in human lungs to form carboxyl-haemoglobin [10]. Based on this fact in 1926, it became clear and well established that hypoxia was caused by poor tissue in the body and not by the deficiency of oxygen transportation. To support this statement, states that carbon monoxide has 200 times' greater affinity for haemoglobin than oxygen [11]. A little concentration of carbon monoxide in an environment can cause toxic levels of carboxyl-haemoglobin. This occurs after carbon monoxide has selectively bound to haemoglobin the oxygen haemoglobin dissociation curve of the remaining oxyhaemoglobin shifts to the left, which reduces the release of oxygen as demonstrated by as shown below

Experimental Method

Ohwojero Chamberlain

Delta State University Secondary School, Nigeria, West Africa, E-mail: cohwojero@gmail.com

The researcher placed the four English rabbits in two different rooms together with two yards of white clean fabrics hung and spread in the two different rooms. The purpose is to check the level of carbon deposits on the white fabric like it will be deposited in the lungs of the four rabbits used for the experiment. The exhaust pipes of the two functional vehicles were connected to the two different rooms and carbon monoxide was emitted at different interval period of time.

The researcher exposed the four rabbits to carbon monoxide that was emitted from the two different exhaust systems independently for 30 min having the two rooms closed for the first day. On the second day, the researcher exposed the four rabbits to carbon monoxide for 60 minutes in the two different rooms, having the two rooms closed. The researcher continued the experimental procedure for another four days

Conclusion

Based on the findings and recommendations made in this research, it can be concluded that carbon monoxide has a serious negative effect on human health like it was assumed. From the experiment carried out using four English rabbits and white fabrics. The color of the fabrics shows the level of carbon deposit that is being deposited in human lungs when carbon monoxide is emitted from the exhaust system. As the rabbits breathe in carbon monoxide when they were exposed to the poisonous gas in an enclosed two different rooms that made use of catalytic converter in one of the exhaust system. And in another exhaust system that did not make use of catalytic converter in the exhaust system.

By increasing the period of exposing the four rabbits

to carbon monoxide by 30 min each day

This made the total time period of exposing the rabbits to carbon monoxide to 210 min for the seven days that the experiment was carried out.

References

1. Bernard C (1857) *Cons surles effect of toxic and drugs*. Paris, Bailliere.
2. Ganong WF (1995) *Review of Medical Physiology* 17: 781.
3. Hampson NB, Weaver LK (2007) Carbon monoxide poisoning a new incidence of an old disease. *Undersea Hyperb Med* 34: 163-168.
4. Shochat GN (2015) Carbon monoxide toxicity. *Medscape*.
5. Farrel MRH (1999) British hyperbaric association carbon monoxide database. *J Accid Emerg Med* 16: 98-103.
6. Caiazzo (2013) Air pollution and early death in the United States. *Atmospheric Environmental (Elsevier)* 79: 198-208.
7. Pease R (2012) Traffic Pollution kills 5,000 a year in the UK, *Science and Environment BBC News*.
8. Moser FX, Sams W, Cartellier W (2001) the impact of future exhaust gas emission legislation on the heavy duty truck engine. *JSAE* 01:0186.
9. Ewing J, Bowley G (2015) VW reveals it misstated emissions of gas cars. *International Business. The New York Times*.