

Final project (first assignment)

Lubricants importance and concerns toward human lives and environment

Introduction

A chariot was once a machine used by the ancient Egyptians, early chariots were found at the tombs of Yuua and Thuiu back in 1400 B.C. Soon the wooden wheels hubs were becoming charred from frictional heat. That was the spark of many trials and experiments to reduce the cool down the generated heat as a result of friction using water and some olive oil. Eventually, they have noticed that some more viscous liquid didn't only prevent cool down the generated heat but even prevented the heat from being generated. furthermore, the wheels were moving more freely and smoother than before. (The History of Lubrication, [Jim Fitch](#), Noria Corporation)

Since then, lubricants have become very essential, they have developed enormously with time. Many forms like oil, grease, fluids. furthermore, characteristics are wide spreading, there are different viscosity grades, temperature endurance, pressure handling and so on. In addition, lubricants are becoming more critical and crucial with the big evolution of industries and factories, food and beverages machinery, oil & gas, textiles. Almost every machine used even at homes will require some type of lubricant to keep running efficiently without failures.

Petroleum-based lubricants are most popular form known in the modern form. It is derived from crude oil and being processed to be widely used in industries .([Bennett Fitch](#), Noria Corporation) Synthetic lubricants are another modern form is widely used and it is artificially fmade by chemical compounds rather the being derived from refined crude oil. ([Jonathan Trout](#), [Jim Fitch](#), Noria Corporation).

Moreover, another form of lubricants is the bio-based lubricants made of renewable energies like vegetable oil and animal fats .([Bennett Fitch](#), Noria Corporation)

Research problem

The current research aims to draw your attention to the negative impact of every form of lubricants mentioned, mainly health related issues and environmental pollution. lubricants are being used widely as mentioned in the introduction, and after certain time, those lubricants are being disposed which means there are concerns

regarding direct human beings contacts and the affect on both health and environment.

Lubricants might seem to be human friendly and the effect of their vapor inhalation and hand contact might seem mild as they don't cause immediate serious illness, unlike hydrocarbons such as benzene, a substance that is highly carcinogenic if inhaled or in direct contact through splashes or handling without applicable personal protective equipment. Although, the affect of being exposed to lubricants is not immediate, long term exposure could cause serious illness due to the nature of lubricants derived from crude oil. In addition, synthetic oil chemical formulation could also lead to serious illness due to some chemical additives. Many aspects and characteristics to be taken in considerations like, volatility, temperature, contaminations.

Environmental concern

The majority of lubricants in their nature are subject to change in their characteristics due to wear of parts, friction, heat and contaminations, so after some time, they will be disposed and replaced with new fresh lubricants. As a result of that, disposed or wasted lubricants are a serious concern. A research by Ramesh Chand & Binay Kumar says it is estimated approximately 50 % of all lubricants sold worldwide end up in the environment via total loss applications, volatility, spills or accidents (IJISSET - International Journal of Innovative Science, Engineering & Technology, Vol. 4 Issue 4, April 2017)

Lubricants are very important for industries, manufacturers and even at home appliances. So, it is worth to question. What are the possible remedies to control lubricants spill? Are there additional safety measures to be taken in consideration? Can we count on bio-based lubricants that are highly biodegradable and more environment friendly to replace crude based lubricants?

Research Significance

The significance of this research strengthens the need of balanced, reasonable and strict solutions for saving human lives and raise the responsibility senses and the awareness level of keeping our environment clean unharmed as well as keeping

industries running efficiently without disturbing by figuring out better solutions, better ways of lubricants handling, usage and disposing.

Reference list

1. (The History of Lubrication, Jim Fitch, Noria Corporation)
2. .(Bennett Fitch, Noria Corporation)
3. (Jonathan Trout, Jim Fitch, Noria Corporation)
4. .(Bennett Fitch, Noria Corporation)
5. (Ramesh Chand & Binay Kumar, IJSET - International Journal of Innovative Science, Engineering & Technology, Vol. 4 Issue 4, April 2017)