International Journal of Advance Research in Science and Engineering
Volume No.07, Issue No.02, February 2018
www.ijarse.com
IJARSE
ISSN: 2319-8354

Preparation of Napalm

Rohan Chaudhari[1], Vedali Chandane[2], Yashasvini Dhakade[3],

Ashutosh Anand[4], Rohit Narwade[5], Asawari Shirale[6],

Prof. Mansi Ghamande[7]

[1,2,3,4,5,6,7] *Department of Engineering Sciences and Humanities,*

Vishwakarma Institute of Technology, (India)

ABSTRACT

This research paper is about sizing down the Napalm to something which is more convenient to be produced while at the same time its incendiary properties are retained as much as possible.
Using common day-to-day available materials like soap and petrol. We are able to make the sized-down version of the dreadful napalm which was first used in World War II, followed by its usage in the Korean War and also the Vietnam War.
We would be looking at the various chemical reactions and mixture required to craft the sized-down napalm. If used in great quantities it would still be disaster causing because at the end of the day, it is a chemical weapon.

Keywords: Incendiary Properties, Petrol, soap

I.INTRODUCTION

Napalm is a flammable liquid that was used in warfare. It is a mixture of a gelling agent and either gasoline (petrol) or a similar fuel. It was initially used as an incendiary device against buildings and later primarily as an anti-personnel weapon, as it sticks to skin and causes severe burns when set on fire.

Harvard University Professor Louis Fieser and his associates invented Napalm on 14th Feb '1942 in a top secret university war research laboratory in the basement of Converse Chemistry Laboratory on Oxford Street in Cambridge. Napalm bomb was first tested on the Harvard college Soccer Field, between the Business School and the Football Stadium, 4th July '1942. It was used extensively by the US in incendiary attacks on Japanese cities in World War II as well as during the Korean War and Vietnam War.

"Napalm" is a portmanteau of the names of two of the constituents of the thickening and gelling agent: co-precipitated aluminium salts of **na**phthenic and **palm**itic acids. Napalm B is the more modern version of napalm and, although distinctly different in its chemical composition, is often referred to simply as "napalm".
It has been used by many countries in greater quantities and over the longest period of time by the United States, Cuba, Brazil, India, Egypt, Israel, Turkey, Iraq, Thailand, and Argentina. The most recent use was by U.S. forces during the 2003 invasion of Iraq.

II.RESOURCES

- Soap
- Petrol or Gasoline
- Stove
- A double boiler

III.PROCEDURE

Napalm can be prepared in two ways. The first technique involves the use of Styrofoam and petrol or gasoline and the second method involves the use of soap and gasoline.

We use second method for preparation

Step I: Shear the soap and add it in petrol or gasoline in 1:1 ratio.

Step II: Heat some water in the lower compartment of the boiler and then take it off the gas.

Step III: Pour the gasoline and the soap mixture in the top compartment of the boiler and keep stirring till the soap is completely dissolved. Do not keep gasoline directly on the stove as it may blow up entire house. The resulting fluid will be the thick and vicious napalm.

IV.EQUATION

Hence it being an incendiary, Napalm has a combustion reaction.
Napalm containing gasoline reacts with oxygen in air when ignited which give rise to water and carbon-dioxide. As the reaction is exothermic, water is converted into vapour.

$$2C_8H_{18} + 25O_2 \xrightarrow{\Delta} 18H_2O + 16\ CO_2 + \text{heat}$$

V.CONCLUSION

When used as a part of an incendiary weapon, napalm can cause severe burns (ranging from superficial to subdermal), asphyxiation, unconsciousness, and death. In this implementation, napalm fires can create an atmosphere of greater than 20% carbon monoxide and firestorms with self-perpetuating winds of up to 70 miles per hour (110 km/h). One of the main anti-personnel features of napalm is that it sticks to human skin, with no practical method for removal of the burning substance.

Napalm is jellied gasoline, so no water won't put it out unless you have massive amount. When handling and storing Napalm, there is less risk of accidental ignition than liquid petroleum. Napalm can be sprayed to cover a large area and its adherence increases its burning power.

Napalm is legal to use on the battlefield under international law. Its use against "concentration of civilians" is a war crime.

VI.ACKNOWLEDGEMENTS

We wish to take this opportunity to thank our Honorable Director Dr. Rajesh Jalnekar,
and Dr. C.M Mahajan, HOD DESH for their steady commitment and support for our project.
We are pleased to recognize Professor Mansi Ghamande for her invaluable guidance during the course of this project work. This project would have been an uphill without Prof. Ghamande continuous direction. We are also grateful to other members of the department who co-operated with us, gave us access to instruments and materials and assisted us in getting past every hurdle smoothly.

REFERENCES

The reference for preparing napalm was taken from the book name is
"U.S.ARMY SPECIAL FORCES GUIDE TO UNCONVENTIONAL WARFARE"
Chapter 4: Incendiary Materials.
0301. Napalm.