Overview

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- Uses of WP in War
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- Controversy over Use of WP
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White Phosphorus

- Made from elemental phosphorus
  - Elemental phosphorus is prepared in electric furnaces in which phosphate rock (phosphorite), coke, and silica pebble are continually charged and heated. [4]
  - 10 forms of phosphorus that occur in 3 major categories: [1]
    - White – poisonous
      - Red – made by subjecting white phosphorus to sunlight; does not spontaneously burn in air
      - Black – flaky; made by subjecting white phosphorus to very high pressure
  - In larger quantities, ignites when exposed to oxygen
Non-militant use of WP

- Used in almost every product today – from toothpaste to soft drinks \(^4\)

- White Phosphorus is used to produce phosphoric acid and other chemicals \(^4\)
  
  - These chemicals are used further in production of fertilizers, food additives, and cleaning compounds.

- Calcium Phosphate, a.k.a. Bone-Ash, is used to create fine Chinaware \(^4\)

- Also important in the production of steels, phosphor bronze, baking powder, and many other products \(^4\)
Military Use of WP

- Two main uses of WP by US military:
  - Incendiary
    - Colorless to yellow, wax-like material
    - Garlic Odor
    - Ignites when exposed to $O_2$
      - Bursts into a yellow flame and produces smoke screen
    - Luminous in the dark
    - If it comes in contact with skin, can cause severe chemical burns
      - Continues to burn until deprived of oxygen
  - Smoke
    - As WP burns, a smoke screen is created
      - The smoke is composed of phosphorus pentoxide particles, which are converted into phosphoric acid
    - Distributed through a variety of different munitions
    - Not usually hazardous
      - Can be toxic if concentration is large enough or if exposure time is long enough
Use of WP in War

- WP was used in the Vietnam war to flush North Vietnamese soldiers out of their positions.

- In the December 1994, during the battle for Grozny in Chechnya, every fourth or fifth Russian artillery or mortar round fired was a smoke or white phosphorus round. [4]
Use of WP in Fallujah

- In reference to the events that occurred at Fallujah in 2004, the US claimed that “the US forces did not use napalm or white phosphorus as weapons”
  - Claimed to only use WP as a means of illuminating the battlefield and as a means for providing smoke for camouflage.

- In the US Army’s Field Artillery Magazine, from March/April 2005, there was an article that reviewed the attack on Fallujah in November 2004.
  - “WP proved to be an effective and versatile munition. We used it for screening missions at two breeches and, later in the fight, as a potent psychological weapon against the insurgents in trench lines and spider holes where we could not get effects on them with HE [High Explosive]. We fired ‘shake and bake’ missions at the insurgents, using WP to flush them out and HE to take them out” [3]

- In another passage of the same article, the authors noted that they could have used other smoke munitions and "saved our WP for lethal missions" [3]
Use of WP in Fallujah

- Questions were raised about whether or not the US used WP as a chemical weapon.

- An article from Darrin Mortenson of the North County Times in California, who was embedded with the US marines in Fallujah, provides evidence that WP was used as a weapon:
  
  - “The boom kicked the dust around the pit as they ran through the drill again and again, sending a mixture of burning white phosphorus and high explosives they call 'shake 'n bake' into a cluster of buildings where insurgents have been spotted all week”[3]

- From this report, it seems WP was used more as a weapon.
Controversy Over Use of WP - CWC

- The monitoring authority over the CWC, the Organization for the Prohibition of Chemical Weapons, had Peter Kaiser, their spokesman, issue a statement on the topic of WP usage:
  
  "No, it's not forbidden by the CWC if it is used within the context of a military application which does not require or does not intend to use the toxic properties of white phosphorus. White phosphorus is normally used to produce smoke, to camouflage movement. If that is the purpose for which the white phosphorus is used, then that is considered under the Convention legitimate use. If on the other hand the toxic properties of white phosphorus, the caustic properties, are specifically intended to be used as a weapon, that of course is prohibited, because the way the Convention is structured or the way it is in fact applied, any chemicals used against humans or animals that cause harm or death through the toxic properties of the chemical are considered chemical weapons."

- The US continues to argue that WP is not a chemical weapon, rather it is classified as an incendiary, and therefore not prohibited by the CWC.

- A US Army Document from 1991 contradicts the argument that WP is not a chemical weapon.
Other controversy is over WP as a weapon in general

US has not signed up to convention covering incendiary weapons

- Convention on Certain Conventional Weapons
  - Protocol III
  - “Prohibitions or Restrictions on Use of Incendiary Weapons”
    - “This prohibits WP or other incendiaries (like flamethrowers) against civilians or civilian objects and its use by air strikes against military targets located in a concentration of civilians. It also limits WP use by other means (such as mortars or direct fire from tanks) against military targets in a civilian area. Such targets have to be separated from civilian concentrations and "all feasible precautions" taken to avoid civilian casualties.”[3]
# References


