

MILITARY EXPLOSIVES, Keith Butler, Chief Chemist at American Ordnance, Jackson, Tennessee

Many different explosive compounds exist but not all have practical applications. To be suitable for military use the explosive material must meet certain characteristics. These characteristics and the historical development from primitive weapons to modern non-nuclear military explosive weapons will be discussed. The study of military explosives is very broad, over 110 explosives are available to the ordnance engineer and the list is growing. Information will be presented about the chemistry and physics of the detonation process and the characteristics that make an explosive suitable for military use. Examples of explosive compounds from a variety of chemical classes will be given. The military classifies explosives based on their power and sensitivity. Functional ordnance utilizes this variation in properties to form an "explosive train". This process uses multiple explosive charges of differing sensitivities and powers to meet the needs of specific applications.