

Hazardous properties of chemical substances

[Science](#), [Chemistry](#)



Polyacrylonitrile (PAN) is a member of acrylic resins. The products of combustion of materials made from polyacrylonitrile (PAN) include Hydrogen Cyanide (HCN), Carbon monoxide (CO), carbon dioxide (CO₂), acrolein and formaldehyde among others (Patnaik, 2007).

Trinitrotoluene (TNT) is the most preferred explosive by the military because it is insensitive to shock and friction thereby minimizing the possibilities of unintentional detonation, unlike other explosives like nitroglycerine, which are more sensitive and prone to accidental blast. It is also more stable than other high explosives.

The first property is that polymeric materials are stiff because they are constituted of very high mechanical features to their density. They are also exceptional thermal insulators. Polymeric compounds or materials are inflammable. This is because they are organic materials and further, cellular materials constructed of the flammable matrix such as polymeric foams, are more susceptible to fire than their equivalent concrete materials as a result of the insulating effect of their cellular structure, which amplifies the temperature at the heating exterior. Consequently, this leads to pyrolysis of materials worsening fire behavior than would have been with solid materials. The gas used in the cells may also stimulate combustion when it is combustible.