

*The Use of Catalysts for Environmentally Sound Conversion  
of Explosives and Propellants*

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Abstract

Surplus explosives, propellants, and chemical warfare agents traditionally have been disposed of by open burning, open detonation, and incineration. In recent years, however, increasing concern over potential adverse environmental impact of these approaches has led to the development of alternative demilitarization technologies. Industry has developed several catalytic processes that can be used to demilitarize and dispose of these materials in a safe and environmentally sound manner. The conversion of highly energetic materials requires special safety and handling procedures. In some cases, processes that employ catalysts can be used to recover valuable chemicals from propellants and explosives. For example, recovery of chemicals from unsymmetrical dimethyl hydrazine and Explosive D using the Honeywell Energet-X™ process will be discussed. Chemical warfare agents, in bulk or mixed with energetic materials in assembled weapons, present a particularly difficult challenge. Catalysts can help to dispose of these materials in an environmentally responsible manner.