

Spontaneous Combustible Substances, a Database Update

Dr. M. Sam Mannan, Dr. Harry H. West, and T. Michael O'Connor,
Mary Kay O'Connor Process Safety Center
Texas A&M University
College Station, TX 77843-3122

ABSTRACT

A database of spontaneous combustible substances has been developed. Over 100 substances commonly found in the chemical processing industry have been included. Spontaneous combustion includes the several related phenomena such as spontaneous heating/ignition, spontaneous oxidation, pyrophoric gases, pyrophoric liquids, pyrophoric nonmetals, pyrophoric metals, and moisture reactive metals.

Among the information included in the database are:

- range of conditions for spontaneous combustion
- avoidance techniques
- mitigation procedures
- references to detail studies

Several case histories covering various industries which have experienced these spontaneously combustible materials are detailed.

This database will be made publically available on the Mary Kay O'Connor Process safety Center web : encouragement for others to add their experiences in the spirit of sharing safety information.