

TESTING EXPLOSIVES: CONSIDERATIONS FOR AN INTRINSICALLY SAFE LABORATORY, Keith Butler, Chief Chemist at American Ordnance, Jackson, Tennessee

Certain materials are intrinsically hazardous -they are hazardous in and of themselves regardless of how they are handled. Examples include explosive powders such as black powder, or explosive gases such as propane, butane, and acetylene. Industries working with these materials are highly regulated and accidents are rare. In fact most accidents in these industries are normal industrial accidents such as slips, trips, falls, back strain, cuts and abrasions, etc. Laboratories working with these materials may not be subject to the same level of regulation because of the small quantities used for laboratory scale procedures and the controlled conditions in use such as ventilation fume hoods. Though it may be impossible for a laboratory to be safe "in and of itself", careful planning and preparation will produce a workplace that is compatible with these hazardous materials. Such planning includes giving consideration to building design, laboratory procedures, and personnel behavior as well as having contingencies in place should a catastrophic failure of these systems result in an explosion.