



## Static Electricity and Chemical Safety

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### ***Presenter biography***

**Vahid Ebadat** Ph.D., M.Inst.P, MIET, C.Phys. is CEO of Stonehouse Process Safety, Inc. He has worked extensively as a process safety consultant for the chemical, pharmaceutical, food, paper/wood, and other process industries globally for over 30 years. Dr. Ebadat has published many technical articles and papers and is a regular speaker on process safety topics, including dust explosion, static electricity, gas & vapor flammability, and thermal decomposition/self-heating hazard assessment and control. Dr. Ebadat is a member of NFPA 77 Technical Committee on Static Electricity.



### ***Presentation abstract***

A key concern in facilities working with flammable liquids and powders is the initiation of a flash fire or explosion by electrostatic discharges. An electrostatic ignition source is a discharge resulting from the generation and accumulation of electrostatic charges. Charge generation most frequently occurs when any two materials - liquids and/or solids - make contact with each other and then separate. For example, when liquids are atomized or flow relative to pipe walls - or when powder particles come into contact with the surfaces of the processing and conveying equipment. Accumulation of electrostatic charge on an object can result in electrostatic discharges. A flash fire or an explosion hazard therefore exists during the transfer, handling, processing (including spraying), and packaging of many flammable liquids and powders. Precautions must therefore be taken to prevent inadvertent ignition of flammable atmospheres and to protect people and/or the facility against the effects of explosions.

This presentation discusses the nature of electrostatic ignition hazards and the practical measures that can be considered to prevent/control them based on the requirements of NFPA 77, *Recommended Practice on Static Electricity*.