

Electrostatic hazards and Class I Flammable Liquids

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ABSTRACT

Appropriate packaging and storage practices for certain Class I flammable liquids are a major concern for the chemical industry. When flammable liquids are processed, precautions to prevent sources of ignition must be taken. Customers generally request polyethylene containers for Class I flammable liquids. However, it is believed that this practice is unsafe and is against the intent of OSHA, DOT, and NFPA standards. Plastic containers can generate electrostatic discharges either by filling with a charged material or by handling.

Because there are insufficient data to support this idea, electrostatic measurements are underway. The objective of this research is to develop filling methods that quantifiably indicate that electrostatic charges are adequately dissipated. Variables that will be studied include: air humidity, minimum voltages needed for ignition of flammable liquids, liquid velocities, and relaxation times.