



EMPIRE
PACIFIC

Risk Management, Inc.

ELECTRICAL SAFETY STATIC ELECTRICITY

Company Name _____ Job Name _____

Most of us are familiar with static electricity. We all have walked across the rug and reached for the doorknob, only to have a spark jump from our hand to the knob. We have also seen the effects of "static cling," when our clothes cling together in the dryer.

Static electricity, as a source of ignition for flammable vapors, gases, and dusts, is a hazard common to a wide variety of industries in Alaska. A static spark can occur when an electrical charge accumulates on the surfaces of two materials that have been brought together and then separated (between two solids, between a solid and a liquid, or between two immiscible liquids, i.e., incapable of mixing). One surface becomes charged positively and the other surface becomes charged negatively. If the materials are not bonded or grounded, they eventually will accumulate a sufficient electrical charge capable of producing a static spark that could ignite flammable vapors, gases, and dusts. Some common processes capable of producing a static ignition are as follows:

- The flow of liquids (petroleum or mixtures of petroleum and water) through pipes or fine filters.
- The settling of a solid or an immiscible liquid through a liquid (e.g., rust or water through petroleum).
- The ejection of particles or droplets from a nozzle (e.g. water washing operations or the initial stages of filling a tank with oil).
- The vigorous rubbing together and subsequent separation of certain synthetic polymers (e.g. the sliding of a polypropylene rope through PVC gloved hands).

Preventing static electricity as an ignition source can be accomplished through bonding, grounding, or possibly substitution. Bonding is the process of connecting two or more conductive objects together by means of a conductor. Grounding (earthing) is the process of connecting one or more conductive objects to the ground. If grounding or bonding is not possible, substituting may be an alternative. For example: some absorbent pads used in shops can produce a static spark when separated. If the conditions are right a static spark could be a

5300 SW Meadows Road - Suite 300 - Lake Oswego, Oregon 97035
Phone 503 968-6300 www.empirepac.com Fax 503 968-6305

ELECTRICAL SAFETY - STATIC ELECTRICITY (Continued)

source of ignition for flammable vapors. By substituting a non-conductive pad (3M - HP556) as an alternative, the risk of static spark can be eliminated.

Remember, taking the time to bond or ground when working around flammable vapors, gases, and dusts will help prevent a serious accident.

Safety Recommendations: _____

Job Specific Topics: _____

M.S.D.S Reviewed: _____

List of Attendees

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____