Safety
TOOLBOX TALKS
A ready-to-use training lesson to drive home the essentials of safety.
July 2011

Preventing static electricity

Instructions:
Use Toolbox Talks to spark safety discussions. On the flip side is a quiz to make sure participants retain the valuable information.

Session Date _____

Supervisor/Instructor _____

Attendee List:

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QUIZ ANSWER KEY
(Quiz on other side)

1. **True.**
2. **False.** A single spark can ignite propane vapors or flammable materials.
3. **True.**
4. **False.** Bonding equalizes the potential charge between two conductors, but doesn't eliminate the static charge.
5. **True.**
6. **D.** All of the above.
7. **True.**

▶ Meeting Goals

You will learn four common ways static electricity is produced in the workplace and three methods to reduce the hazards associated with it.

▶ Meeting Starter Questions

Have you ever received a shock from static electricity while at work? What job tasks were you performing? What do you think caused the shock? What hazards could static shock pose?

▶ Critical Safety Points

We've all walked across a carpeted floor, touched a doorknob and zap – got a shock.

Static shocks are painful and annoying, but you may not realize they can be deadly if they occur in an explosive or flammable atmosphere. A single spark produced by static electricity can ignite propane vapors, powdered aluminum, flour, paint or wood dust causing an explosion or fire.

Static electricity in the work environment is commonly produced by:

- moving vehicles or equipment such as forklifts or conveyor belts
- transferring liquids from tanks, drums and cans – or moving liquids through pipes or hoses
- spraying or coating operations, and
- passing materials through chutes or conveyors.

To reduce the hazards of static electricity, follow these guidelines.

1. **Bonding and grounding** are the most common ways to control the hazards of static electricity. Bond conductive objects by connecting them with conductors such as copper wires and clamps. This equalizes the potential charge between them, but doesn't eliminate the static charge, which is why grounding is important. Ground conductive objects directly to the earth using ground rods, copper pipes or building steel to drain the static charge away as it is produced.
2. **Substituting** is an alternative to grounding and bonding. Substitute conductive materials with non-conductive materials such as using plastic dispensing containers to reduce the possibility of sparking.
3. **Controlling** static electricity on people can help prevent or reduce static build up. Anti-static mats on floors or work surfaces, conductive clothing made of cotton or linen and conductive footwear allow the charge to be conducted away. Be sure to keep all conductive materials free from dirt, dust, or wax which can reduce their effectiveness.

▶ Quiz Time

Find out how much participants learned during this meeting. Distribute copies of the quiz on the other side of this page. Grade the quizzes using the answers to the right.

SAFETY MEETING QUIZ

Employee Name:	Signature:
Department:	Date:
Score: _____ / 7	❑ Pass ❑ Fail
Trainer:	Signature:

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Question 1: Static electricity can be deadly if it occurs in an explosive or flammable atmosphere.
❑True ❑False

Question 2: A single spark is not enough to ignite propane vapors or other flammable materials.
❑True ❑False

Question 3: Bonding and grounding are the most common ways to control the hazards of static electricity.
❑True ❑False

Question 4: Grounding equalizes the potential charge between two conductors, but doesn't eliminate the static charge.
❑True ❑False

Question 5: To bond conductive objects, you must connect them with conductors such as copper wires and clamps.
❑True ❑False

Question 6: Static electricity is often produced by:
- ❑ A. Moving vehicles or equipment such as a conveyor belt or forklift.
- ❑ B. Transferring liquids from tanks, drums, and cans.
- ❑ C. Spraying or coating operations.
- ❑ D. All of the above.

Question 7: Static electricity can be reduced by using anti-static mats on floors or work surfaces and wearing conductive clothing and footwear.
❑True ❑False

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453A Baltimore Pike • Springfield, PA 19064
Phone: 484-479-2700 • Fax: 610-543-2292
www.b21pubs.com