Pre Knowledge Survey – 2 Hour

1. Which of the following is not an element needed for a grain dust explosion:
   a. Oxygen
   b. Saturation
   c. Ignition Source
   d. Dispersion
   e. Confinement

2. T/F Dust is considered explosive if flame propagation occurs in combination with a rise in pressure.

3. Good housekeeping includes:
   a. Vacuuming with proper equipment
   b. Paying attention to “hidden areas”
   c. Training all employees
   d. Maintaining dust aspiration systems
   e. All of the above

4. T/F Open facilities are more likely to result in explosions than are closed facilities.

5. Which of the following are ways to reduce grain dust during unloading:
   a. Use cyclones and fabric filters
   b. There is no good way to reduce dust during unloading
   c. A closed receiving area so the wind can’t disturb the dust
   d. Unload the grain slowly

6. T/F Chute baffles reduce dust emissions by approximately 70%.

7. To reduce dust while conveying and handling grain:
   a. Locating the bucket elevator inside the main structure
   b. Increase the angle of spouting
   c. Adjust speed of handling equipment
   d. Explosion venting secured tightly to the leg

8. Warning signs that a dust collection system is malfunctioning include:
   a. Dust filters are full
   b. Limited dust emissions
   c. Blast gate locked into position
   d. Duct work with extra flexible hose

9. T/F Dust rarely accumulates in hidden areas.

10. A primary explosion ________.
    a. Setstle dust on surfaces
    b. Ignites the dust cloud
    c. Disturbs the settled dust
    d. None of the above

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Pre Knowledge Survey – 2 Hour Key

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2. T/F Dust is considered explosive if flame propagation occurs in combination with a rise in pressure. (True)

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Post Knowledge Survey – 2 Hour

1. T/F The five elements of the explosion pentagon are confinement, saturation, oxygen, dust, and ignition.

2. Good housekeeping practices include all but the following:
   a. Auditing of employee behavior
   b. Addressing hidden areas
   c. Taking appropriate measures to control dust
   d. Training employees on the importance of mitigating dust

3. T/F: Dust serves as the ignition source in an explosion.

4. Which types of equipment can reduce grain dust during unloading?
   a. Cyclones, dead boxes, and fabric filters
   b. A slope of more than 30 degrees for free flowing grain
   c. Closed receiving areas so the wind cannot disturb the dust
   d. A narrow diameter to increase speed

5. Avoid grain turbulence at grain transfer points by:
   a. Unloading grain very slowly
   b. Using a baffle or other strategy to direct the grain flow
   c. Unloading grain inside a closed building
   d. Turning off any dust collection system to not lose any material

6. T/F: Bucket elevators should be placed as close to outside walls as possible.

7. Effective dust collection systems include which of the following:
   a. Low suction system pressures
   b. Limited maintenance
   c. Extensive duct work
   d. Dust aspiration or ventilation systems at grain transfer points

8. T/F: Controlling ignition is the only way to avoid dust explosions.

9. T/F: Sweeping dust is one way to prevent dust accumulation.

10. T/F: Dust control systems can run indefinitely with little maintenance needed.
Post Knowledge Survey – 2 Hour

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10. T/F: Dust control systems can run indefinitely with little maintenance needed. (False)