

Keeping Powder and Pellets Out of the Environment



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Gleicher Formula for Change

aka Beckhard-Harris change equation

For change to occur

$$D \times V \times F > R$$

D = Dissatisfaction with the current state

V = Clear vision for the future state

F = Knowledge of the first steps

R = Resistance

Why Does it Matter?

Employee Safety

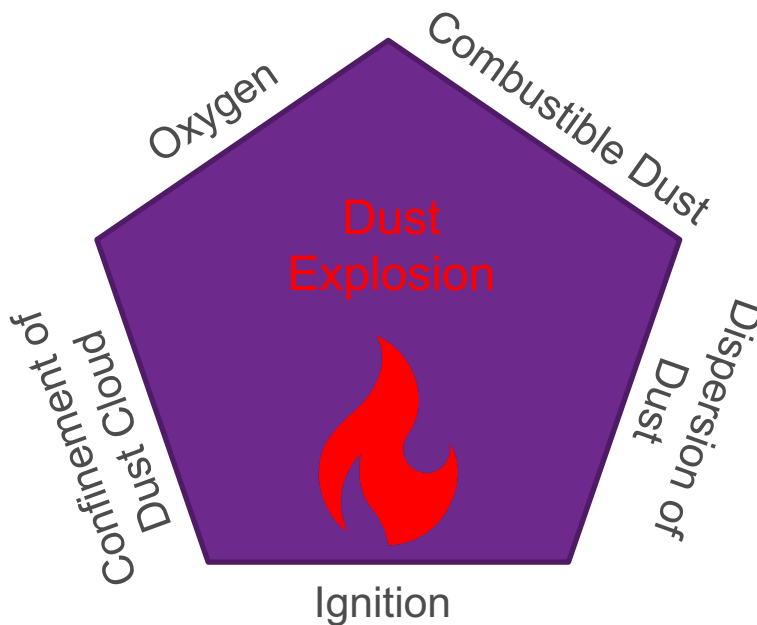
Compliance with Federal and State Regulations

Preservation of Water Quality

Reputation

Polyethylene Dust Can Pose a Hazard

Dust Explosion Pentagon



NFPA considers a dust to be any particle of 500 microns or smaller in size.

500 microns = 35 mesh

Resources

OSHA Safety and Health Information Bulletin – Combustible Dusts in Industry: Preventing and Mitigating the Effects of Fire and Explosions updated 11/14

NFPA 652 – Standard on the Fundamentals of Combustible Dust 2019

NFPA 654 – Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids 2020

Slips and Falls Can Be Deadly

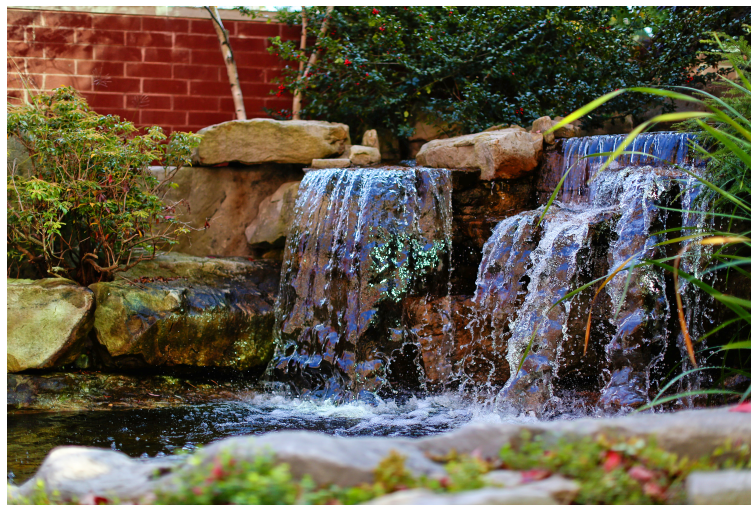
OSHA Workplace Fatalities

<https://www.osha.gov/fatalities>

Date of Incident	City	State	Hazard Description	OSHA Inspection Number
3/31/2019	Gallipolis	OH	Worker died after slipping and falling on floor	1393078
3/23/2019	Antioch	IL	Worker died from injuries after tripping on store display	1391189
2/26/2019	Sandston	VA	Worker fatally injured after tripping on pallet	1382294
1/31/2019	East Moline	IL	Worker died due to a fall	1375264
1/30/2019	Salt Lake City	UT	Worker died from injuries after slipping and falling on ice	1375408

US Federal Regulations

The Clean Water Act prohibits anybody from discharging "pollutants" through a "point source" into a "water of the United States" unless they have a National Pollution Discharge Elimination System (NPDES) permit.



The Clean Water Act citizen-suit provision allows any individual or organization that can establish standing to sue an alleged polluter.

The penalty for a first-time conviction for negligent violation of an NPDES permit or discharge without a permit can be 1 year and \$2,500 to \$25,000 per day of violation

Our Reputation Depends on It

Little Plastic 'Nurdles' Are Flooding Beaches and Waterways

Virgin plastic pellets are the biggest pollution disaster you've never heard of

NURDLE FREE OCEANS
REDUCING PLASTIC POLLUTION IN OUR SEAS

Tiny pellets called 'nurdles' are leeching into the ocean

Our Oceans Are Full of Nurdles, And They're Not as Cute as They Sound

Nurdles are the Environmental Calamity of 2019

Formosa to pay \$50M in pellet pollution settlement

Knowledge of the First Step

A Well-Established Program



opcleansweep.org

Operation Clean Sweep (OCS), is a voluntary stewardship program for facilities that handle plastic materials. It is administered by the American Chemistry Council's (ACC) Plastics Division and Plastics Industry Association (PLASTICS) in the US, and the Chemistry Industry Association of Canada in Canada



Goal: To help every plastic resin handling operation implement good housekeeping and pellet, flake, and powder containment practices to work towards achieving zero pellet, flake, and powder loss.

The Five Steps of Implementation

- 1) **Commit to making zero pellet and powder loss a priority**
 - Sign the company pledge
- 2) **Assess your plant's situation and needs**
 - Comply with all environmental laws and regulations that address pellet and powder containment.
 - Conduct a site audit – OCS provides checklists to use as a starting point
 - Ensure your worksite is properly set up to prevent loss and assist cleanup
 - Identify potential spill areas and causes, and brainstorm solutions. Storm drain screens are the #1 priority.
- 3) **Implement simplest effective solution and follow up to measure success**

The Five Steps of Implementation (cont.)

4) **Raise employee awareness and create accountability**

- Establish written procedures (See the OCS manual for assistance)
- Conduct regular employee training and awareness campaigns on OCS.
- Assign employees the responsibility to monitor and manage pellet and powder containment.
- Solicit employee feedback on your program.

5) **Follow up and enforce procedures**

- Conduct routine inspections of the facility grounds - production areas and parking lots, drainage areas, driveways, etc.
- Continuously look for ways to improve the program



opcleansweep.org



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