COMBUSTIBLE DUST ROADMAP

This Roadmap is a high-level summary of steps for a process owner to consider if combustible dust may be produced or handled in their facility. The process owner's final selection of dust collectors and risk mitigation strategies should be based on the outcome of a Dust Hazard Process Hazard Analysis performed by the facility owner. Early engagement of a dust collector supplier provides helpful insights on the availability and features of various products, facility owners should consult with a combustible dust expert and/or a process safety expert before making actual product and mitigation strategy selections.

Examination Testing: Since this is a high-level Roadmap, the following tests are not included in detail:
- Explosivity Sensitivity (Xα and Xμα)
- Minimum Explosible Concentration (MEC)
- Minimum Ignition Energy (MIE)
- Minimum Autoignition Temperature (MAT) – avoidance off outer surfaces or hot environments

Additional Testing

Dust Hazard Analysis [DNA]: A Dust Hazard Analysis allows a process owner to determine potential combustion risks for dusts produced or handled in their facility.

Dust and Process Hazard Analysis [DNA & PHA]: A Dust and Process Hazard Analysis allows the process owner to review combustion risks in their processes, and assists the process owner in determining if additional testing and/or mitigation activities are needed to reduce their combustion risks.

Dust Additives to “Inert” Combustible Dust
- Consider passive (Spark Cooler®) or active (Detect & Extinguish) strategies on a dust collector.

Consider Explosion Prevention
- Consider explosion protection and explosion isolation from other deflagrations.

Consider Explosion Protection
- Active Explosion Suppression Systems

Dust Combustibility Tests and/or Tests
- If Dust is confirmed not Combustible, additional testing or mitigation may not be required.

Completing and Maintaining by the Process Owner

Important Information: This is the process owner’s responsibility to understand and evaluate the risks in their process and mitigate those risks in accordance with all applicable laws, regulations, and standards, including consideration of those published by the NFPA. Process owners may not identify all potential mitigation steps and do not cover the commissioning and on-going testing and maintenance required for various mitigation strategies. This Roadmap is a high-level summary of steps for a process owner to consider and is not intended as a replacement for a detailed review of applicable laws, regulations, and standards. Equipment suppliers can assist a process owner in understanding what products are available to help mitigate their risks but they are not regulatory experts. If you need assistance identifying steps in the field, please contact us and we will assist you in finding resources online. Please note that various strategies can help mitigate, but not eliminate the risks of fire and explosion.

EXAMPLES OF MITIGATION SELECTIONS

Prevention: Ignition Source Mitigation Strategy Considerations

- The DHA/PHA likely indicates an active (i.e., spark or flame) ignition source. A recognized fire control expert may be able to identify and develop unique mitigating approaches outside of those listed.

The DHA/PHA likely indicates an ignition source that requires active fire suppression equipment.

Embarks How to Extinguish

The DHA/PHA likely indicates an active (i.e., spark or flame) ignition source. A recognized fire control expert may be able to identify and develop unique mitigating approaches outside of those listed.

Sparks Quiz to Extinguish

The DHA/PHA likely indicates an active (i.e., spark or flame) ignition source. A recognized fire control expert may be able to identify and develop unique mitigating approaches outside of those listed.

Fire Protection: Expansion Suppression & explosion isolation Considerations

The DHA/PHA likely indicates an active (i.e., spark or flame) ignition source. A recognized fire control expert may be able to identify and develop unique mitigating approaches outside of those listed.