



Grain dust



General information sheet

Exposure to grain dust can potentially cause eye, skin and upper respiratory tract irritation, bronchitis symptoms and chronic decrements in pulmonary function.

Control measures - Ways to reduce employee exposure to grain dust

When considering preventive measures for workplace hazards, the hierarchy of controls should be implemented. First, determine whether the hazard can be eliminated entirely from the workplace. If elimination is not feasible, consider substituting the hazardous substance, process, or equipment with less hazardous alternative. Next, implement engineering controls such as local exhaust ventilation or enclosure system to reduce employee exposure. Where residual risks remain, establish appropriate administrative controls, such as safe work procedures, training, and exposure monitoring. Finally, provide suitable personal protective equipment, including respiratory protection where required, to ensure the health and safety of employees.

1. Ventilation systems

Dust collection system is the most effective control measure to allow the least possible amount of dust to escape. Dust collectors can operate at high efficiencies. The collector's efficiency can be compromised due to a damaged filter, faulty seals or sheet metal leaks in

the ductwork or collector housing. Therefore, the equipment must be tested on a regular basis for mechanical leaks, and the system's maintenance schedule be developed, including cleaning procedures to ensure the dust collection system is operating at maximum efficiency.

It is important that the ventilation **exhaust stacks** are positioned such that contaminated exhausted air does not recirculate dust back into the building and contribute to the general airborne dust concentration.

Make-up air inlets should be located away from dust sources.

The current edition of the ACGIH® Industrial Ventilation: A Manual of Recommended Practice, referenced in paragraph 10.17(1)(b) of the Canada Occupational Health and Safety Regulations (COHSR), can be consulted as a guide in selecting the type of dust collector and air filtration systems to ensure the recirculated air does not introduce contaminants into the workplace environment.

2. Good work practices

Do not use compressed air cleaning. **Very high airborne dust concentrations can create an explosion hazard.**

The preferred method for cleaning dust settled on the floor is to use a vacuum system equipped with a proper filtration medium. The vacuum system must be appropriate for the task and maintained in accordance with the manufacturer's instructions.

Sweeping can be used where a vacuum system is not practical. Only **dust cloths** should be used to remove dust from equipment.

3. Personal protective equipment (PPE)

PPE should only be used when engineering controls are not reasonably practicable, e.g., during grain unloading operation, cleaning/maintenance procedures, equipment malfunctions, emergencies or other known high-exposure tasks where engineering controls cannot be applied.

The selection, fit testing, maintenance and inspection of **respiratory protection** should be based on the maximum dust concentrations encountered, as required by the current edition of the Canadian Standards Association (CSA) Standard CAN/CSA- Z94.4,

“Selection, care and use of respirators”. A respiratory protection program must be in place, which includes employee training and fit testing performed on a regular basis.

Protective clothing such as gloves and coveralls should be used to minimize dermal exposure.

Eye and face protection may also be necessary during dust generating operations and procedures, emergencies, or other situations involving excessive dust generation, as required by Part XII of the COHSR.

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PDF

Cat. No.: Em8-18/2018E-PDF

ISBN: 978-0-660-27008-1

ESDC

Cat. No. : LT-290-07-18E