

Cotton Dust FactSheet

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Employees in the cotton industry need to be aware that cotton dust is dust present in the air during the handling or processing of cotton. This dust may contain a mixture of many substances including ground up plant matter, fiber, bacteria, fungi, soil, pesticides, non-cotton matter, and other contaminants. Breathing these substances can result in serious health problems, such as chronic bronchitis and emphysema. Therefore, employees who may be exposed to cotton dust need to practice safety.

The first symptoms of a serious health problem an employee may display can include: difficulty breathing; tightness in the chest, which is particularly noticeable on the first day back at work after being off for a few days; and coughing up phlegm or mucous. Employees who are continually exposed to cotton dust above limits set by the Occupational Safety and Health Administration (OSHA) may develop byssinosis, also known as “brown lung” disease. This disease can cause permanent and disabling damage to the respiratory system. Therefore, to insure that employees are aware of the hazards of cotton dust, employers are required to conduct a training program at least annually.

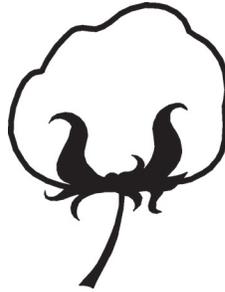
Employees Protection

To protect employees from disabling respiratory diseases, employers are required to limit their employees’ exposure to the amount of respirable cotton dust in the air. The employee exposure limits, known as permissible exposure limits (PEL), are average exposures as measured over an eight-hour workday.

For employees who are covered by OSHA’s Cotton Standard (29 CFR 1910.1043), the exposure limits are as follows:

- 200 micrograms of cotton dust per cubic meter for air yarn manufacturing;
- 500 micrograms of cotton dust per cubic meter for textile waste houses;
- 750 micrograms of cotton dust per cubic meter for slashing and weaving operations; and
- 1000 micrograms of cotton dust per cubic meter for waste recycling and garneting.

Operations such as cotton gins and non-textile



processing operations are covered by OSHA’s Air Contaminants Standard, (29 CFR 1910.1000). In this standard the PEL is 1mg/cubic meter measured over an eight-hour workday.

Dust Measurement

Employers are required to measure the workplace cotton dust level at least every six months, or whenever there are any changes in equipment or work practices, which might increase the amount of cotton dust in the air.

- A vertical elutriator or an equivalent instrument must be used to measure cotton dust.
- Measurements must be representative of an eight-hour period.
- Measurements must be performed for each shift and in each work area.
- Employers must explain the procedure to their employees and permit them to observe the monitoring.
- They must notify employees in writing of the findings within five days after measurement.
- If the levels are above OSHA standards, employers must list in a notice to employees the steps they will take to correct problems.
- Warning signs must be posted in work areas where the cotton dust level is higher than the OSHA limit.

The dust measurement/sampling protocols for employers vary according to which OSHA standard covers their particular operation. Some employers may have a qualified industrial hygienist to perform the dust sampling, because it is a highly technical and complicated process.

Dust Controls

Often employers can reduce dust levels by adjusting dust control equipment, such as ventilation systems, and by cleaning and repairing the equipment regularly. An employer’s dust control program must include, at a minimum, the following:

- (1) cleaning floors with a vacuum or another method that cuts down the spreading of dust;
- (2) disposing of dust in such a way that as little dust scatters as possible;
- (2) using mechanical methods to stack, dump or otherwise handle cotton or cotton waste, when possible;
- (3) checking, cleaning, and repairing dust control equipment and ventilation systems.

Employees involved in cleaning must wear respirators. Compressed air may not be used to clean clothing and floors and may only be used to clean equipment if no other methods are possible. If these measures fail to reduce the cotton dust levels below the OSHA limits, employers must try additional engineering controls and work practices.

Personal Protective Equipment

OSHA requires employers to check their workplace for inhalation hazards that may require the use of personal protective equipment (PPE). If other measures are not sufficient to reduce airborne hazard exposure to levels lower than or equal to the PEL, the employer must select suitable PPE to protect their employees. Employees are to be fitted for them and OSHA requires that employees receive training before using PPE. The

training will include instructions in using, cleaning, and maintaining the equipment.

An employee who cannot wear a respirator for medical reasons must have the opportunity to transfer to another job where the level of cotton dust is within the OSHA limits, at no loss in pay, seniority, or other rights and benefits, if another position is available.

Medical Examinations

In addition to reducing the dust in the air, employers must provide free annual medical exams, including breathing tests, to employees in dust areas. If employees show significant physical changes, more frequent exams must be made available to them. Results are to be provided to workers, and workers may copy exam and test results if they wish. Employers are to maintain these records for 20 years and make them available upon request to OSHA, National Institute for Occupational Safety and Health (NIOSH), an employee, or to an employee's designated representatives with the consent of the employee.

This fact sheet was published with information from the Occupational Safety and Health Administration and the Texas Department of Insurance, Division of Workers' Compensation.