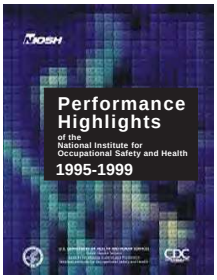
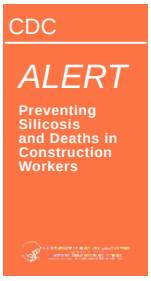
The Hidden Danger in Your New Home

FRESH AIR CORP

A Note from Barry McCoy
President of Fresh Air Corp





Dear Friends,

For years now, I've talked to builders about the mess they leave in their new homes. I'm referring to the debris lining the air duct system.

If you've ever watched drywall being sanded, you've seen the dust cloud that fills the building. You may have also noticed the workers were wearing masks.

What you probably didn't know was the drywall dust may have contained an element listed by OSHA as a hazardous material - Crystalline Silica.

This booklet is about the potential danger of this material being left in a home, office or school building. There's an overview on the next page and highlights from several government publications following.

If you are purchasing a new-build, ask your contractor to have a certified NADCA air duct specialist thoroughly clean the furnace and duct system and get this dangerous material out of your new home.

Best Regards,

Barry McCoy
President - Fresh Air Corp

The problem's in the mud!

These pictures are typical of the drywall stage of a home under construction. The interior walls are wrapped in gypsum board. (drywall)

Nail heads & seams are filled with joint compound (mud) which is made up of the following:

- **Gypsum**
- **Calcium Carbonate**
- **Perlite**
- **Mica**
- **Crystalline Silica**

Crystalline Silica makes up only 2-5% of the material but is listed by two of the world's largest gypsum board manufacturers as a serious hazard.




CGC
A USG Company

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Chicago, Illinois 60606

SECTION 3 - HAZARD IDENTIFICATION

MSDS #06120E Premium Drywall Compound

Dust created from this product may cause eye, skin, nose or upper respiratory irritation. Avoid inhalation of dust. Avoid eye contact. Do not ingest.

Section 3: Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e.silicosis and/or lung cancer)

LAFARGE NORTH AMERICA

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Herndon, VA 20170

SECTION 3 - HAZARD IDENTIFICATION

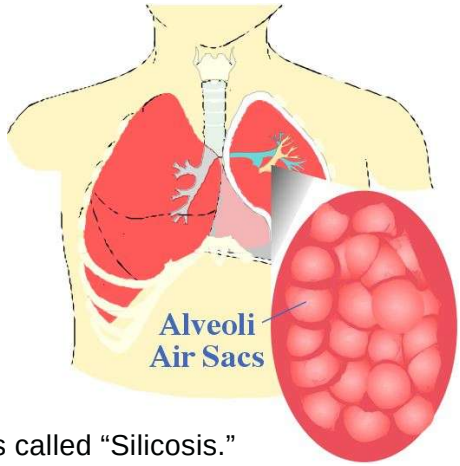
Setting Type Drywall Compound

This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease.

Cyrstalline silica is classified by IARC and NTP as a known human carcinogen.

When the dried mud is sanded, respirable dust is released into the air. This means the particles are a size that can be drawn into the lungs through the normal breathing process.

When Crystalline Silica is inhaled, the particles can work into the lung's Alveoli Sacs. These small chambers are where oxygen and carbon dioxide are exchanged.



If the particles lodge in the tissue, the lung reacts by developing fibrotic nodules around them.

This condition is called "Silicosis."

WARNING

Toxic - Harmful by inhalation.
(Contains crystalline silica)

Use proper engineering controls, work practices, and Personal Protective Equipment (PPE) to prevent exposure to dust.

Respiratory Protection
Eye Protection
Gloves

Bottom Line!

This residue should be removed from the air ducts. The dust invades both the supply and return systems during construction.

Each time the blower fan comes on, the particles of Crystalline Silica blow back into the air and into your family's lungs.

Compared to the cost of the construction, and the potential danger to the occupants, the expense of a complete air duct cleaning is trivial.

Fresh Air Corp
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Dangerous Compound Report:
Crystalline Silica!

NIOSH Finds:

Dusts From Drywall-Joint-Compound Mud May Be a Serious Lung Hazard
(Taken from Impact Volume XVI, No. 1 May 1998)

A study by the National Institute for Occupational Safety and Health (NIOSH) has shown that "nuisance dust" from joint-compound mud used in drywall work can contain toxic materials. And, there can be dangerously high amounts of dust from sanding and other drywall work.

NIOSH conducted a Health Hazard Evaluation of dust and toxic exposures to 10 renovation workers at 2 sites doing drywall finishing. Measuring the air the workers were breathing, NIOSH found 9 of 10 total-dust samples at higher levels than limits set by the Occupational Safety and Health Administration (OSHA). More important, 2 of 13 samples of respirable (breathable) dust were above the limits OSHA says are safe. Two samples contained respirable silica. Silica can cause crippling and fatal lung diseases.

"The health effects associated with long-term chronic airborne exposure to the dust or particulates generated during drywall sanding are not known," the report said, adding that even when the dust amounts are within recommended limits, they may not be safe. This is especially true, when parts of the dust are known to have a "biologic effect."

Besides silica, another material in the dusts that may be unsafe is kaolin. Found in clay, kaolin causes pneumoconiosis, or permanent lung damage.

For the study, NIOSH also bought drywall-joint compound at stores in Ohio, to test for minerals and examined 8 of the workers for health problems. The researchers found the workers' main complaints related to the dust were eye irritation and nasal congestion.

The report recommends engineering controls (such as local-exhaust ventilation), wet-finishing techniques, and personal protective equipment to limit exposures to dusts during drywall.

The study was done at sites in Washington, D.C., and Buffalo, New York, in 1993 but only published in October 1997. CPWR had requested the work. For a free copy of the report, HETA 94-0078-2660, call 1-800-35NIOSH.

The NIOSH researchers and other members of the Controls Work Group, have produced a 7-minute video, Drywall Dust Engineering Controls. The video shows how to use the controls to protect workers. It is available from the Center to Protect Workers' Rights for $7 postpaid.

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Health Effects of Exposure:
Three Types of the Disease

Description of Silicosis

When workers inhale crystalline silica, the lung tissue reacts by developing fibrotic nodules and scarring around the trapped silica particles [Silicosis and Silicate Disease Committee 1988]. This fibrotic condition of the lung is called silicosis.

If the nodules grow too large, breathing becomes difficult and death may result. Silicosis victims are also at high risk of developing active tuberculosis [Myers et al. 1973; Sherson and Lander 1990; Bailey et al. 1974].

A worker's lungs may react more severely to silica sand that has been freshly fractured (sawed, hammered, or treated in a way that produces airborne dust) [Vallyathan et al. 1988]. This factor may contribute to the development of acute and accelerated forms of silicosis.

Types of Silicosis

A worker may develop any of three types of silicosis, depending on the airborne concentration of crystalline silica:

1. Chronic silicosis, which usually occurs after 10 or more years of exposure to crystalline silica at relatively low concentrations

2. Accelerated silicosis, which results from exposure to high concentrations of crystalline silica and develops 5 to 10 years after the initial exposure

3. Acute silicosis, occurring when exposures are the highest and can cause symptoms to develop within a few weeks to 4 or 5 years after the initial exposure [Peters 1986; Ziskind et al. 1976]

Complications:

Initially, workers with silicosis may have no symptoms. As silicosis progresses, there may be difficulty in breathing. Complications may cause fever, weight loss, and night sweats.

Severe mycobacterial or fungal infections can complicate silicosis and may be fatal [Ziskind et al. 1976; Owens et al. 1988; Bailey et al. 1974]. Fungal or mycobacterial infections are believed to result when the lung cells (macrophages) that fight these infections are overwhelmed with silica dust and are unable to kill mycobacteria and other organisms [Allison and Hart 1968; Ng and Chan 1991].

CURRENT EXPOSURE LIMITS

Occupational Safety and Health Administration (OSHA)
The current OSHA permissible exposure limit (PEL) for respirable dust containing crystalline silica (quartz) for the industry is measured by millions of particles per cubic foot (mppcf)

NIOSH
The NIOSH recommended exposure limit (REL) for respirable crystalline silica is 0.05 mg/m3 (50 µg/m3) as a TWA for up to 10 hours/day during a 40-hour workweek [NIOSH 1974].

NIOSHA's Request For Help - Nationwide!

Trade Journals, Health Officials, Construction Companies and Workers!

Request for Assistance in...

Preventing Silicosis and Deaths in Construction Workers

NIOSH ALERT: 1996
DHHS (NIOSH) Publication No. 96-112

Control of Drywall Sanding Dust Exposures

Construction workers who sand drywall joint compound are often exposed to high concentrations of dusts and, in some cases, respirable silica. Drywall joint compounds are made from many ingredients (i.e., talc, calcite, mica, gypsum, silica). Some of these have been associated with varying degrees of eye, nose, throat, and respiratory tract irritation.

Over time, breathing the dust from drywall joint compounds may cause persistent throat and airway irritation, coughing, phlegm production, and breathing difficulties similar to asthma. Smokers or workers with sinus or respiratory conditions may risk even worse health problems. When silica is present, workers may also face an increased risk of silicosis and lung cancer.

Exposure to respirable crystalline silica dust during construction activities can cause serious or fatal respiratory disease.

The National Institute for Occupational Safety and Health (NIOSH) requests assistance in preventing silicosis and deaths in construction workers exposed to respirable crystalline silica. Construction workers, coworkers, managers, and equipment manufacturers urgently need information about the hazards of breathing respirable crystalline silica.

This Alert describes six case reports of construction workers who have died or are suffering from silicosis. In addition, the Alert cites examples of five construction operations that used poor dust controls and two operations that used good dust controls.

NIOSH requests that editors of trade journals, safety and health officials, owners, and employers bring the recommendations in this Alert to the attention of all workers who are at risk.

BACKGROUND

Types of Silica:
Crystalline silica may be of several distinct types. Quartz, a form of silica and the most common mineral in the earth's crust, is associated with many types of rock. Other types of silica include cristobalite and tridymite.

Potential for Exposure During Construction:
Concrete, drywall and masonry products contain silica sand and rock containing silica. Since these products are primary materials for construction, construction workers may be easily exposed to respirable crystalline silica during activities.

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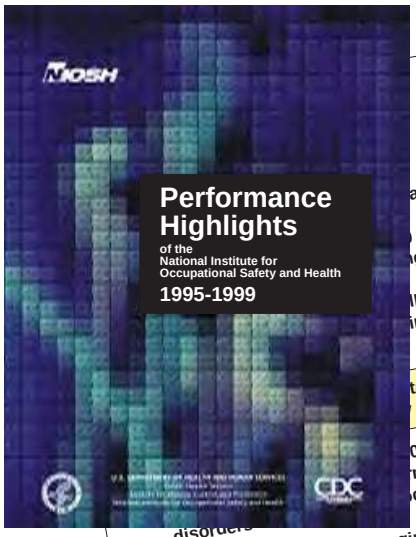
United States OSHA Occupational Safety & Health Administration U.S. Department of Labor

NIOSH Research Findings from Published Report

Four of Twenty Items Address Problems of Drywall Dust or Silicosis!



Examples of NIOSH Research Findings

as possibly carcinogenic, through toxicological research.

workers, identified effective control technology to prevent hazardous paint
g processes in the autobody repair industry.

lion workers, confirmed through toxicologic research the potential for
ng loss comparable to damage caused by hazardous levels and types of

tantially elevated risk of silicosis and autoimmune diseases among workers
the current OSHA exposure limit.

0,000 employees of the Internal Revenue Service and millions of workers in
mined the use of a regimen of hourly, brief rest breaks reduced musculoskeletal
ductivity.

Developed engineering controls that reduce biomechanical stressors among beverage delivery workers, who have twice the rate of lost workdays as manufacturing overall.

Of relevance to almost 2 million nursing home workers, as well as hospital and home healthcare workers, identified mechanical lifting technology effective in reducing ergonomic hazards, responsible for an escalating rate of back injuries.

Documented a 90 percent reduction in drywall dust emissions (a silicosis risk to construction workers) with the use of commercially available ventilated dry-wall sanders.

Documented elevated blood lead levels (exceeding CDC recommendations) among children of
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exposures by 90 percent.

Determined that water mist systems are effective
underground mines, eliminating a potentially toxic exposure.

Determined that water mist systems are effective as chemical systems for fire suppression in underground mines, eliminating a potentially toxic exposure.

* Documented substantially elevated risk of silicosis and autoimmune diseases among workers exposed to levels permitted by the current OSHA exposure limit.

* Documented a 90 percent reduction in drywall dust emissions (a silicosis risk to construction workers) with the use of commercially available ventilated dry-wall sanders.

* Documented elevated blood lead levels (exceeding CDC recommendations) among children of construction workers, resulting from contamination of workers and their work clothes.

* Documented an unrecognized high prevalence of silica exposures among surface miners, leading to preventive measures in industry and by MSHA.