Horse Riding Arena Silica Dust Danger

PRESENTED BY :

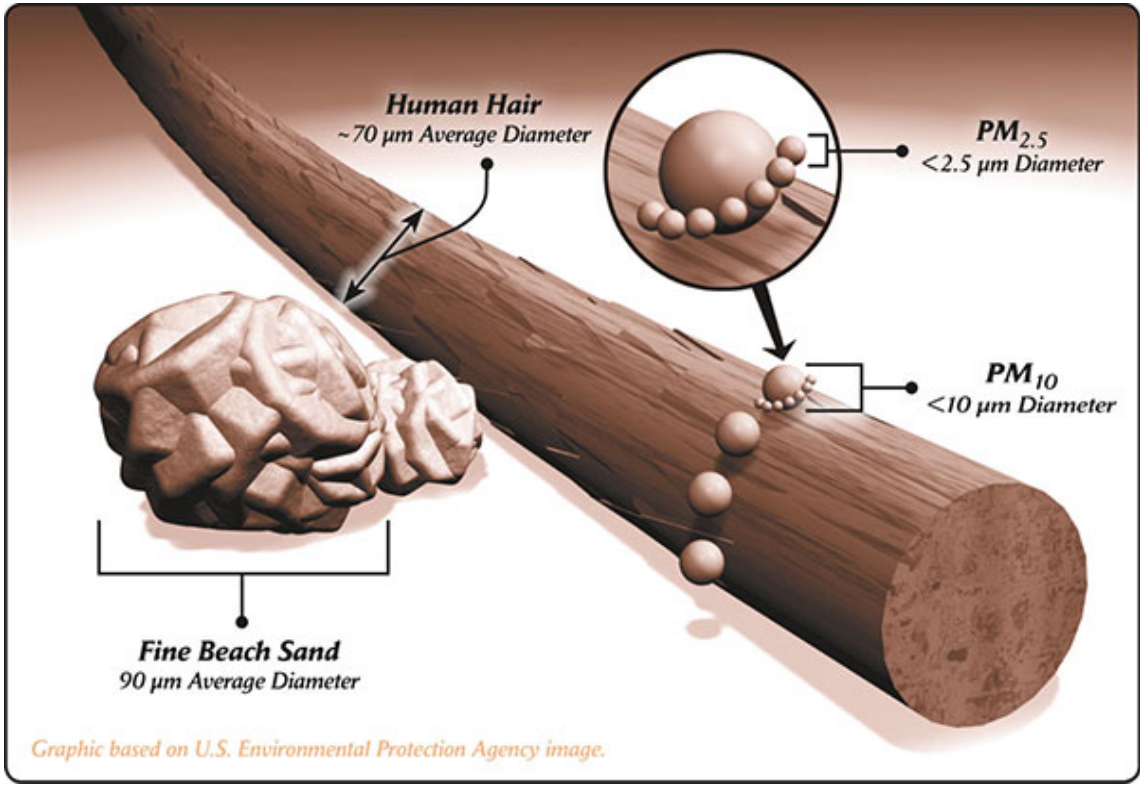
www.stopdustnow.com

Definition: Crystalline Silica particle size PM10 PM2.5

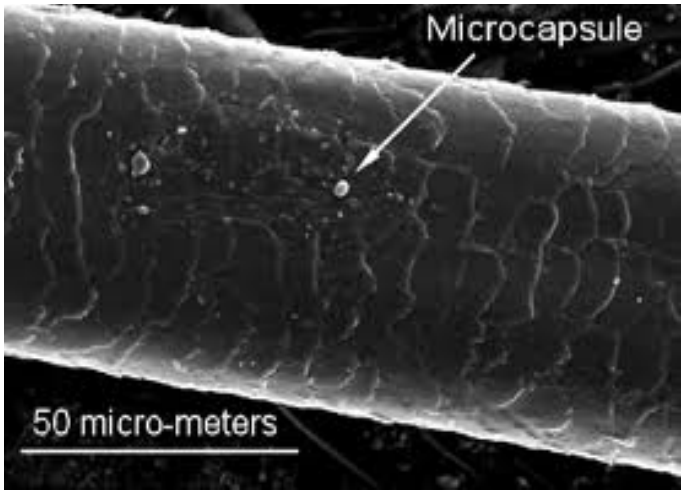
- **Crystalline silica is a basic component of soil, sand, granite, and many other minerals. Quartz is the most common form of crystalline silica. Crystalline silica has been classified as a human lung carcinogen. Additionally, breathing crystalline silica dust can cause silicosis, which in severe cases can be disabling, or even fatal. The respirable silica dust enters the lungs and causes the formation of scar tissue, thus reducing the lung's ability to take in oxygen.[1]**

[1]OSHA: "Crystalline Silica Exposure" Health Hazard Information for Construction Employees http://www.osha.gov/Publications/osha3177.html

PM10 and PM2.5 particle size can remain airborne for up to 24 hours and when inhaled these particles lodge deep into lung tissue and are a true health hazard. Shown below are size comparisons of human hair to PM10 and PM2.5 particles.

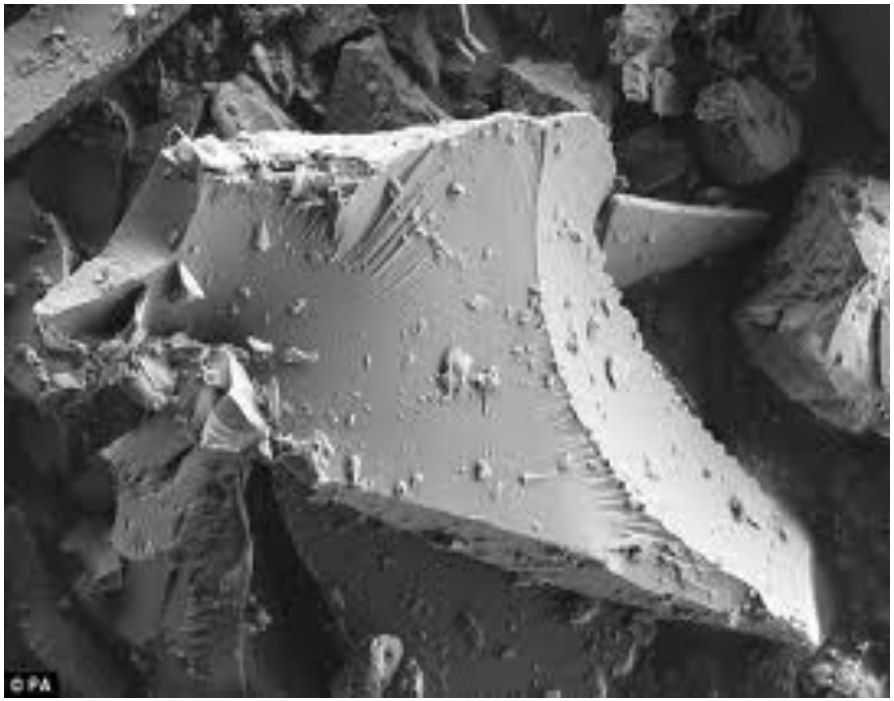


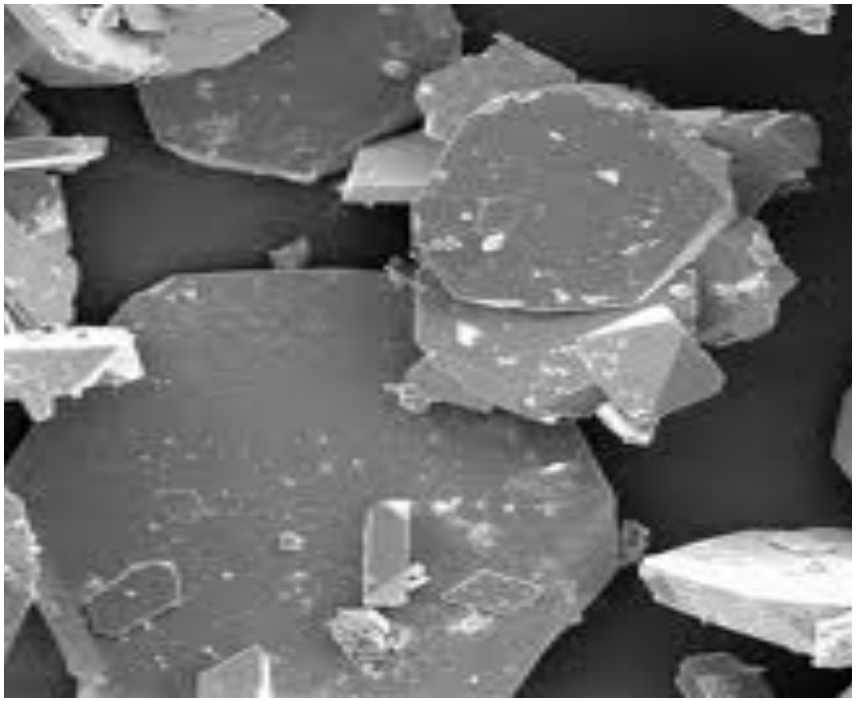
Microscopic view of a hair and a PM2.5 particle



Silica dust and all PM10 and PM2.5 particles are well documented health hazards. Although the harmful effects of other hazards such as tobacco products, lead paint and asbestos are generally known, the public is generally not aware of the severe health effects of dust.

Shown below are electron microscope images of PM10 and PM2.5 particles. Left is silica sand and right is clay.





Through a beam of sunlight PM10 and PM2.5 silica particles can easily be seen floating in the air. In the absence of the sunlight beam, these hazardous particles remain invisible.

Dust Hazard Effects on Horses

- **Horses breath up to 75 liters of oxygen per minute (4500 liters per hour) and when the air is filled with dust the horse's lungs become filters to clean the air. Unlike filters the horses lungs cannot be cleaned or replaced and long-term exposure to dust hazard creates irreversible damage resulting in health problems.**

- **Long-term exposure to silica dust is related to Chronic Obstructive Pulmonary Disease (COPA) also known as "heaves" similar to asthma in humans. Over time silica dust builds up in the lung tissue and causes fibrous scar tissue to form on the lung walls creating difficulty for adequate oxygen supply during exercise. This adds pressure to the horse's capillaries when the horse breaths deeper and harder than normal during exercise. This forces the oxygen into the air sacs thereby creating a negative pressure which may cause rupturing of the small capillaries also called Exercise Induced Pulmonary Hemorrhage (EIPH) , or "bleeders" .**

Would you let your child play in this dust?

Would you want be near this type of work without a dust mask ?

If you answered no to these questions then you understand the dangers of dust.

- **Dust is a danger in any amount and that is why there are laws to enforce workplace dust hazards. Environmental laws to prevent fugitive hazards dust have been used and enforced for many years.**
- **The major organizations confirming and warning the public about the dangers of PM10 and PM2.5, especially crystalline silica, are: Centers for Disease Control (CDC) , World Health Organization (WHO) , American Lung Association (ALA) , Occupational Safety and Health Administration (OSHA) , Environmental Protection Agency (EPA) and**

  United States Department of Agriculture (USDA)

Less effective methods of dust control

- **Watering is the easiest way to control dust. Watering must be done at the right time in order to be effective while riding. Water surrounds the sand particles and creates a loose footing until the water has evaporated. During winter months water freezes and makes the footing to hard.**
- **Chlorides, such as Magnesium and Calcium, are basically industrial salts used as a dust control agent by drawing moisture from the air as a way to keep the dirt moist.**
- **These chloride methods are not very effective and are more hazardous than silica when inhaled. Rain washes the chloride away and kills vegetation as well as polluting wetlands from runoff. Chlorides are also corrosive to metal horseshoes, leather and equipment.**

Silica dust hazard affects the health of people who ride and work in arenas as well as the horses.

Finally there is a safe long lasting solution

Ian Miller Endorses ArenaKleen

Ian Millar Makes The Jump to ArenaKleen

Once, eight time Canadian Show jumping Champion Ian Millar tried ArenaKleen, he knew ArenaKleen was different! Ian competed on an ArenaKleen treated surface at the prestigious Royal Horse Show in Toronto, Canada. "ArenaKleen delivers more then just a healthy dust free environment. The footing at the show was firm and consistent allowing both horse and rider to compete and ride in the moment." Right after the Royal, Ian had ArenaKleen applied to all the arenas at his facility, Millar Brook Farm.

ArenaKleen-No More Dust!

ArenaKleen is the all natural, environmentally safe dust control solution that eliminates unhealthy levels of dust. With ArenaKleen dust suppressant, horses, riders and trainers can work safely and comfortably in the arena, stables or anywhere dust is a problem.

ArenaKleen-Rides Like Dry!

Most dust treatments just coat the dust particles. Arenakleen works differently. ArenaKleen is formulated to absorb into each individual soil particle. This means that soil particles remain in direct contact with each other insuring firm footing, excellent traction with no stickiness, thus no tracking.

If you're looking for better air quality, a healthier environment and the added benefit of improved footing, call our message line at **1-800-879-5051** or email us at **info@dirtglue.com**

Another compelling product by DirtGlue Enterprises

ArenaKleen™ The Rider's Choice

Best Dust Control Method

- **For arenas with no access to water there is ArenaKleen. Invented in 2002 for the US military and used in Iraq and Afghanistan this same formula is known as ArenaKleen for equestrian use and is now available to the public. ArenaKleen is a long lasting, non-toxic, non-hazardous liquid that coats particles and prevents them from becoming airborne. Sun does not dry it out and rain cannot wash it from the dirt. The only causes for needing to be re-applied are if it is covered over with new material or buried deep by tilling the dirt.**
- **A single application of ArenaKleen can last up to 4 years at 100% effectiveness. The ArenaKleen treated dirt looks wet but feels dry and does not stick or clump up. Like Ian Miller says "this stuff is amazing".**
- **Works best on arena footings free of rubber , wood, and fiber. Can be used along with ottosport footings.**
- **Used at The Royal and endorsed by Ian Miller :**

Knowing dust is a danger, why would we let our children and horses be exposed to dust danger knowing there is a solution?

ASTHMA & AIR POLLUTION

PARTICLES IN THE AIR LIKE DUST, DIRT, SOOT, AND SMOKE ARE CALLED

PARTICULATE MATTER & CAN CAUSE

- Increased hospital visits
- Worsened asthma symptoms
- Adverse birth outcomes
- Breathing problems
- Decreased lung growth in kids
- Lung cancer
- Early death

GROUND-LEVEL OZONE

Forms when pollutants from cars and trucks, power plants, factories, and other sources come in contact with each other in heat and sunlight. Factors such as weather conditions and intensity of sunlight also play a part in how ozone is formed. Ground-level ozone is one of the biggest parts of smog, and it is usually worse in the summer months.

WHO'S AT RISK?

People with heart or lung disease, infants, children with asthma or who spend a lot of time outdoors, older adults, and active people of all ages who exercise or work hard outdoors

WHAT CAN YOU DO?

- Check the daily air quality forecast via newspaper, TV, radio, or online at http://airnow.gov to learn when particle levels are unhealthy
- Reduce the amount of time outside when pollution is high
- Plan outdoor activities when ozone levels are lower, usually in the morning and evening
- Exercise away from roads and highways. Particle pollution is usually worse near these areas
- Do easier outdoor activities, such as walking instead of running or using a riding lawn mower instead of a push mower

LEARN MORE

www.cdc.gov/ephtracking

For more information about the danger of PM10 & PM2.5 :

www.osha.gov

www.epa.gov

www.cdc.gov

www.who.int

des.nh.gov

For more information about ArenaKleen:

info@stopdustnow.com