

## AN EXPLANATION OF SILICA IN SPORTS FIELD SAND

Many of us have seen material labels warning us that dust inhalation from free silica, asbestos, paint fumes or other toxins may cause serious respiratory disease. Recently, with the raised awareness of health hazards in the workplace, “free silica” has become synonymous with respirable free quartz, or crystalline silica, used in the occupational health and hygiene fields.

Silica dioxide, the main constituent of quartz based silica sand, represents approximately 80% of the earth’s surface. Silica sand is not toxic in its natural state and is recognized as one of the most inert substances on earth. Because it cannot be altered or replaced through natural processes, it is also one of the most widely used and valuable minerals in existence.

Dust particle sizes are expressed in microns (one millionth of a meter). The smallest size of particle that the unaided eye can see is 50 microns. However, respirable dust particles, 10 microns and smaller, occur from mechanical fracturing and are the only dust particles small enough to reach the deep inner regions of the lung where they may be a concern. Particle sizes coarser than 10 microns are more likely to impinge on the moist mucus membrane linings of the upper respiratory system. They are then either swallowed or expelled, through coughing, thus removing them as a concern to the respiratory system.

Whether or not any of the airborne dust particles, from any material, are a potential health hazard depends not only on the size of the dust particle, but also on the type of materials in the dust and the amount of dust you breathe into your lungs. Airborne dust consisting of mechanically broken down or pulverized sand particles may be potentially toxic only if they fall within in the finer size ranges. Every day, other potential toxic materials including heavy metals and chemicals occur in dust from natural surfaces or other manufactured materials which can affect the respiratory system and be absorbed internally. These present a far greater hazard to a person’s health than natural silica sand products.

Merv Rogan, P. Geol, P. Mgr  
Marketing Manager

**Call 1.888.887.7373 or 604.421.3620**  
**or email us at [sales@TTIOnline.com](mailto:sales@TTIOnline.com) with any questions**  
**or for a quotation direct to your project.**  
**With over 60 years of combined experience and an in-house geologist,**  
**we *are* your sand experts.**