

# Chapter 1

## Silica Substitutes

### ⇒ ⇒ ⇒ **IF YOUR SHOP USES SILICA SAND, YOU SHOULD:**

#### **Make a control plan.**

You may make a plan yourself or get help from an industrial hygienist. See Chapter 5, Cutting Airborne Silica.

#### **Substitute Non-Silica Abrasive Media**

The best way to eliminate airborne crystalline silica is to not use it as an abrasive media. There are several alternative non-silica abrasive media options available.

#### **Develop a Health and Safety Program**

According to OSHA, an effective health and safety program makes all the difference in preventing injuries and illnesses in the workplace. The best health and safety program will involve every level of the organization and instill a safety culture that will reduce accidents for workers and improve the bottom line for managers. When health and safety are part of the organization and a way of life, everyone wins. An effective program includes provisions for the systematic identification, evaluation, and prevention or control of general workplace hazards, specific job hazards, and potential hazards, which may arise from foreseeable conditions.

### ⇒ ⇒ ⇒ **WHY ARE THESE STEPS IMPORTANT?**

Eliminating the amount of airborne, respirable silica is the most important part of any silica control program. If you blast with silica, you and other employees are at risk of developing silicosis. Silica dusts can be minimized or eliminated by substituting non-silica medias.

#### ***Please Refer to:***

***Appendix I – Silica Substitutes for Abrasive Blasting***

***Appendix II – Evaluation of Substitute Materials for Silica Sand in Abrasive Blasting***

The best way to ensure that your efforts are successful is to develop a control plan. In making the control plan, you identify the main areas of airborne silica dusts in your shop and decide how to eliminate the exposures.

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### ⇒ ⇒ ⇒ NON-SILICA MEDIA SUBSTITUTES - A NEW OPTION?

**No.** Non-silica substitutes have been around for decades. Forty years ago, European nations banned the use of silica sand as an abrasive media and those nations have been using non-silica abrasives successfully ever since.

All the steps necessary to develop a complete silica health and safety program overwhelm many abrasive blasting shop owners. Have you ever wished that you could just skip the whole problem by using a non-silica substitute blast media?

Good news - You can. There are many non-silica abrasive blasting substitutes you can use. They provide excellent results with a kick - the majority can be recycled and reused many times. Switching to non-silica abrasive blasting substitutes can completely eliminate the major source of silica in your shop. You will still need general safety programs, and getting silica dusts below the MIOSHA limits will be much easier even if you still blast on a silica-containing material.

### **Substituting a non-silica abrasive.**

<u>PROS</u>	<u>CONS</u>
➔ Gets silica out of the workplace before it can hurt you.	➔ Greater “up-front” cost when purchasing raw material.
➔ You can recycle and reuse the material several times.	➔ Equipment for recovery may have a substantial initial investment.
➔ Often more effective and faster than silica sand.	➔ Possibly too aggressive for some materials.
➔ Non-silica abrasives provide excellent profile results.	➔ Can’t use one media on all material. (i.e., steel shot on fiberglass boat hulls.)
➔ Can help you pass other MIOSHA rules.	

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### **Notes**