Silica Exposure Limits

Comparing Your Exposure to OSHA's Limit

Finding and comparing the actual exposure and the permissible limit will let you know if you need to take action to protect against a silica hazard.

There is not one crystalline silica exposure limit for all cases. Rather, the limit is derived from a calculation that takes into account the percentage of quartz, cristobalite, tridymite, and respirable dust specific to your particular work-site.

To determine the limit and compare it to the actual amount, you can:

Follow a written example to make the calculations yourself
or
Let the Advisor Genius do the calculations for you

You will supply certain data and the Genius will make some calculations to produce **three different number:**

PEL This number is the calculated permissible exposure limit for dust to which the worker may be exposed. It uses the data you supplied and is based on the percent crystalline silica in the sample. For example: 1.6 mg/m^3

Exposure This number is the actual amount of dust that is in your work environment, for example: 4.8 mg/m^3

Severity This number is derived by dividing the exposure by the PEL, for example: 4.8 / 1.6 = 3.0

If the severity number is higher than 1.0 you are above the limit. If the severity number is less than 1.0 you are below the limit.

The Genius performs calculations for a respirable dust sample. If your sample is collected as a total dust sample, you will need to make adjustments to the PEL and Severity the Genius calculates.

Apply Your Knowledge

Permissible Exposure Limit for Crystalline Silica
OSHA regulation 1910.1000 Table Z-3 is used to determine the exposure limits for crystalline silica. Though this regulation is under the General Industry Standard, crystalline silica exposures in the Construction and Maritime Industries are subject to this same limit. Regulating these industries under the General Industry Standard is specifically addressed in Appendix F of the OSHA Special Emphasis Program (SEP) for Silicosis.

There are also limits on coal dust and amorphous silica