

BASIC INFORMATION

ABOUT CRYSTALLINE SILICA

Currently, there is growing alarm in different Autonomous Regions on the materials that contain crystalline silica and the dust-laden environment that is generated during its production.

The appearance of accelerated cases of silicosis in certain establishments has alerted the authorities who have initiated various inspection campaigns in mechanized workshops of materials that contain crystalline silica.

With the objective of informing and clarifying certain concepts with our clients, we have drafted this brief document for your consultation. This information may be expanded on by a technician of the Office for the Prevention of Labor Risks of Levantina y Asociados de Minerales, S.A.U. an expert on the legal and technical current state related with the exposition of crystalline silica.

1.- CRYSTALLINE SILICA

Silica is a basic component of soil, sand, granite, marble and many other minerals. Silica exists in different forms, crystalline and amorphous. Quartz is the most common form of crystalline silica. We can also find it in the form of cristobalite and tridymite, which are two of the most harmful. However, amorphous silica is considered to have a low toxicity.

When materials are produced, the internal composition of which, contains crystalline silica, dust is produced in the labor environment that can be

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inhaled by workers. This inhalable fraction can penetrate deep in the lungs and after prolonged exposure to high levels of this agent, irreversible effects on the health may arise, including pneumoconiosis such as silicosis, as well as a worsening of other pulmonary illnesses.

2.- FREQUENTLY PRODUCED MATERIALS

Below we list the different materials used in the workshops that produce stone and their percentages (approximately) of the crystalline silica content.

- **Granite:** 15-35%
- **Marble:** 0-5%
- **Quartzite:** Greater than 95%
- **Slate:** Up to 40%
- **Compacts of quartz:** 85-100%; with the presence of crystallite in numerous cases.
- **TECHLAM®:** 10-15%

3.- SAFETY SHEET ON NATURAL STONE

Royal decree 255/2003 for which the Regulation on the classification, packaging and labeling of dangerous preparations has been approved, establishes the requisites and contents of a **SAFETY DATA SHEET**.

Article 1 of said rule cites its exclusive application to “preparations”, thereby being understood as meaning such **mixtures and solutions composed of two or more substances**.

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Natural Stone is not a preparation nor a mixture, it deals with the only construction material that is used just as it is found in nature and therefore it is not subject to the production of safety files.

4.- GOOD PRACTICES

It is recommended that suppliers, who sell materials that contain crystalline silica in its composition, inform their clients of the risks to workers who are exposed to crystalline silica.

One way of warning and informing about these risks and measures to adopt is to provide a **manual or guide on Good Practices**. Suppliers shall be able to choose to produce their own guides with a desired format or provide the European NEPSI guide available at www.nepsi.eu, recommended by the **Work Inspectorate**.

5.- EVALUATION AND CONTROL

Establishments, in which due to their productive process and raw materials, produce silica dust should fulfill that established in **RD 374/2001 of April 6 on the protection of the health and safety of workers against the risks arising from the exposure to chemical substances**. In accordance with the values obtained, periodical measurements shall be taken in conformity with rule UNE EN 689 (Exhibits D and F).

Prevention Companies shall advise and coordinate the **performance of evaluations and hygienic**

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measurements of the dust with the prevention delegates or the person who carries out their duties.

6.- ENVIRONMENTAL VALUE LIMITS

The environmental value limits to daily Exposure (EVL-DE) that are used currently and published by the INSHT are:

- Breathable Fraction 3 mg/m³
- Breathable quartz fraction: 0.1 mg/m³
- Breathable cristobalite fraction: 0.05 mg/m³

7.- TECHNIQUES FOR THE MINIMIZATION OF DUST

Some preventive techniques for the minimization of dust are:

- Adaptation of manual tools to a damp mode
- Nebullization Systems
- Localized Extraction Systems
- Isolation of Work Environments

8.- INDIVIDUAL PROTECTION EQUIPMENT

- FFP3 Masks
- Semi-autonomous respiration equipment

9.- TRAINING

Workers who occupy job positions in environments in which silica dust exists in suspension shall receive specific information on the risks and preventive procedures that they must adapt to their tasks.

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10.- SIGNS

Workplaces in which there is a dust-laden environment that contains crystalline silica shall indicate the risks and precautions by mean of information posters. Below, we present a model of such a poster that includes pictograms that must include:

DANGER



H372
Specific Toxicity in certain organs (lungs) Repeated exposures, category 1. Causes injuries to organs (lungs) after prolonged or repeated exposures.

RECOMMENDATIONS



P501
Eliminates the residues in conformity with the rule in effect.
P314
Consult a doctor in case of discomfort.

PRECAUTION



P260
Avoid breathing the dust produced in the cutting and working of material.
P284
Use respiratory protection equipment for particles (P3)



P280
Wear gloves, adequate working clothes and protective goggles. Change into clean clothing at the end of the workday.



P270
Do not eat, drink or smoke in areas contaminated with crystalline silica.



P264
Thoroughly wash hands after handling and shower if necessary.