

Focus on IFA's work

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Exposure to quartz at the workplace

Problem

Quartz is used as a material in an abundance of work processes in various sectors of industry. Released as dust, it is a source of exposure to fine quartz dust. Despite technological advances and considerable efforts to reduce dust, exposure to respirable fine quartz dust today is still a significant problem. Silicosis still ranks among the occupational diseases with high annual numbers of reported suspected and recognized cases.

In view of these facts, there was a need for a general review of the quartz situation. The wealth of available exposure data was to be processed if possible according to work area and activity in order to reveal trends in exposure over the last few years and to support the health protection activities of the social accident insurance institutions. Companies can also refer to the available statistically evaluated measured data in order to compare it to their own data gained during risk assessment.

Activities

Health risks and occupational diseases; sampling and analysis methods; limit values and provisions; sampling and analysis methods; sources, use and occurrence of quartz; and measured values from over three decades in branches of industry and work areas were brought together in a working party of the social accident insurance institutions.



BGIA-Report 8/2006e

This information formed the basis for the BGIA Report 8/2006e "Exposure to quartz at the workplace". The 104,000 average shift values for quartz and fine dust listed in the exposure descriptions were obtained from about 8,900 firms according to branches and work area by resorting to the quality-assured measurement system for exposure assessment (MGU).

The statistical evaluation of the collected data from the MEGA (German acronym for “measured data on exposure to hazardous substances at the workplace”) exposure database was carried out with the MEGA^{Pro} software developed at IFA. On the basis of the results, it was then possible to describe the exposure situation over various periods.

Results and Application

This report, which is available for downloading, presents the exposure conditions based on measured values from the last three decades and describes the implementation of protective measures and the state of the art. At the same time, it also contains a list of work areas for the control of preventive action and measures for exposure monitoring with the opportunity for comparisons with a current in-plant state, e.g. during risk assessment.

This report can also be used to determine retrospective quartz dust exposure in connection with reported suspected cases of occupational diseases and as a contribution to discussions in expert bodies involved in the further development of the technical code on hazardous substances.

Area of Application

Everyone involved in occupational safety and health, the quartz-processing industry and its safety officers, supervisory services of public bodies and the social accident insurance institutions, case managers working for company health insurance schemes, occupational medical services, expert bodies and epidemiological researchers.

Additional Information

- Exposure to quartz at the workplace. BGIA Report 8/2006e. Ed.: Deutsche Gesetzliche Unfallversicherung (DGUV), Berlin 2008
www.dguv.de/ifa, Webcode e40513

Expert Assistance

IFA, Division 1: Information technology – Risk management

IFA, Division 2: Chemical and biological hazards

Literature Requests

IFA, Zentralbereich