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Focus on IFA's work

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GESTIS-Stoffenmanager®: Information source for risk assessments according to TRGS 400

Problem

According to Art. 6 of the German Hazardous Substances Ordinance, the employer is obliged to take all necessary measures to protect employees from health hazards during activities with hazardous substances. The central tool of the Hazardous Substances Ordinance is the risk assessment. Its purpose is to identify and assess risks relating to hazardous substances, e.g. due to inhalation or dermal exposure, and to define and check protective measures.

The Technical Rule for Hazardous Substances (TRGS) 400 defines the procedure for risk assessment in detail. Product hazardousness is to be determined with the aid of its labelling and information in the safety data sheet (SDS). In addition, hazards resulting from activities with these products are also to be taken into account. The employer must document the results of the risk assessment.

Activities

In cooperation with the Dutch company Cosanta BV, IFA provides GESTIS-Stoffenmanager®, an online tool to assist with the risk assessment for handling hazardous substances. GESTIS-Stoffenmanager® is mentioned in the TRGS 400 Section 4.1 „Information sources“ as “information on the properties of hazardous substances and task specific risks and protection measures, accessible without problem to the employer.” GESTIS-Stoffenmanager® is provided on the Internet at http://www.dguv.de/ifa/gestis-stoffenmanager.

Hazard category / Exposure category	n.a.* not applicable	A low	B med.	C high	D very high	E extem high
1 low	III	III	III	III	II	I
2 medium	III	III	III	II	II	I
3 high	III	III	II	II	I	I
4 very high	III	II	I	I	I	I

*Only for highly deluted or harmless liquids

Figure 1: The Control banding of GESTIS-Stoffenmanager® to determine the risk categories I, II and III for prioritization of the application of protective measures at work places

With Version 8 of the application, GESTIS-Stoffenmanager® is also assessable via mobile devices.

After creating a personal account, a secured access to the software is granted. GESTIS-Stoffenmanager® can be an aid for establishing an action hierarchy for the reduction of risks from handling chemicals. It provides advice on the selection of protective measures and helps to verify their effectiveness. In addition, GESTIS-Stoffenmanager® is a valid tool for the non-measuring exposure assessment as recommended in the TRGS 402.

Results and Application

The Control Banding of GESTIS-Stoffenmanager® provides support for risk assessment for inhalation and dermal exposure during activities with hazardous substances. GESTIS-Stoffenmanager® classifies the risks arising from an activity with a hazardous substance on the control banding principle. A product's hazard category bases on the H statements, which can be found in the SDS of the product. The hazard categories are determined

exposure path specific for inhalation exposure, possible hazards after skin contact (direct damages or, hazards after skin resorption) and possible eye contact. This makes it possible to determine exposure path-specific protective measures as well as direct information on eye protection measures, directly derived from the danger of the product. The exposure category is composed of the product's exposure potential (dustiness or vapour pressure) and the degree of exposure during an activity. GESTIS-Stoffenmanager® determines the latter from responses to questions on the workplace situation. Important here are such factors as the type, duration and frequency of the activity but also influence of room size, room ventilation and local exposure reduction measures such as dust extraction or encapsulation. By combining the hazard and exposure categories, GESTIS-Stoffenmanager® establishes a priority hierarchy (risk category or priority level) for the reduction of hazards (see figure 1). Risk category I designates high-risk workplaces (priority level one), and exposure reduction measures must be taken at these workplaces with the highest priority.

If a risk for the employees has been determined, exposure reduction measures can be selected with the aid of GESTIS-Stoffenmanager® and their effect on the risk can be checked. Protective measures are available for selection on the hierarchical STOP principle (**S**ubstitution, **T**echnical measures, **O**rganisational Measures and **P**ersonal protective measures), combined with the possibility of estimating their conceivable effects. If an exposure reduction measure is chosen for a work situation, this can be documented in a catalogue of measures. It is left to the user's discretion to decide which protective measures are included in the catalogue.

For documentation purposes, GESTIS-Stoffenmanager® additionally offers the possibility of saving or printing out the results of risk assessments, the catalogue of measures and a list of all detected hazardous substances (list according Art. 6 GefStoffV). In addition to this, also working place instruction cards according to TRGS 555, to inform the employees, can be generated with the aid of the information entered in GESTIS-Stoffenmanager® and the result from the risk assessments. The documentation thus complies with the duties for risk assessment under the Hazardous Substance Ordinance.

Area of Application

GESTIS-Stoffenmanager® is targeted at all those (business owners, safety officers etc.) who have to conduct risk assessments in accordance with Art. 6 of the Hazardous Substances Ordinance for activities with hazardous substances.

Additional Information

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- Arnone et. al: Hazard banding in compliance with the new Globally Harmonised System (GHS) for use in control banding tools. Regul. Toxicol. Pharmacol. 73 (2015) pp. 287-95

Expert Assistance

IFA, Division 1: Information technology – Risk management

Literature Requests

IFA, Central Division

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