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Sessie 1C

DE EVOLUTIE VAN DE STOFFENMANAGER

Evaluation of the Stoffenmanager for various dust exposure scenarios

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Aims

The Dutch Ministry of Social Affairs and Employment initiated a program for improvement of the handling of chemicals, especially in SMEs (The VASt program: reinforcing the working conditions policy on hazardous substances). The Web-based tool called "Stoffenmanager" was developed to assist SMEs to prioritise risk of chemicals in their workplace. The aim of the present study is to:

- collate good quality exposure data obtained in SMEs in the Netherlands;
- explore the accuracy of the Stoffenmanager by comparing its estimates with dust exposure measurements in several occupational settings.

Methods

The exposure model of the Stoffenmanager is to a large extent based on a deterministic model developed by Cherrie and colleagues. Main determinants are the intrinsic emission properties (e.g., dustiness), type of handling of the substance, and control measures present at the workplace. In order to support and underpin the model, we use a relational exposure database in Access. The database contains all core information on exposure determinants and specific Stoffenmanager parameters. Exposure information is collected from occupational hygienists of Arbo Unie, TNO archives, other consultants, and branches that participate in the VASt program. Guidelines for data quality were applied to rank data into one of 3 categories: good, moderate or poor. Spearman correlation coefficients were used to evaluate the association between model estimates and measurements.

Results

This is an ongoing project. Our approach to enlist a number of active stakeholders to provide exposure measurements for inclusion in a publicly available database appears to be feasible. At present, the database contains about 2000 measurements with contextual information. Approximately 60 % of the dust measurements were assigned the quality score "good". Initial analyses show a reasonable correlation between model estimates and measurements (rs ~ 0.7). The association becomes considerably less when moderate and poor quality data are also included in the comparisons.

Conclusion

The exposure database will be expanded in the coming months. Currently, a proposal is under development to build a web-based version of this database. Analyses suggest that it is very important to take into account the quality of exposure measurements that are used as 'gold standard'. Although these are only preliminary results, it is suggested that associations between model estimates and measurements are good.

De Stoffenmanager voor de schoonmaakbranche: demonstratie van de software met gelijktijdige beoordeling van huid- en ademhalingsrisico

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Inleiding

De Stoffenmanager is als generieke tool voor prioritering van blootstellingrisico's gezamenlijk ontwikkeld door Arbo Unie, BECO en TNO in het kader van het programma VASt (Versterking Arbobeleid Stoffen) van het ministerie van SZW. De generieke Stoffenmanager combineert een kwalitatieve schatting van de inhalatoire blootstelling met de gevaren (R-zinnen) van chemische producten. Hierdoor ontstaat een prioritering in drie risicoklassen.

Het gebruik van de generieke Stoffenmanager vraagt relatief veel inspanning van de gebruiker. Denk hierbij aan het "vertalen" van de eigen werkzaamheden naar gestandaardiseerde omschrijvingen en het invoeren van de benodigde productgegevens. Tussen 2005 en 2007 worden diverse branchespecifieke "Stoffenmanagers" ontwikkeld om het gebruik binnen een branche makkelijker te maken en daarmee het aantal gebruikers te vergroten. Betrokken branches zijn onder meer die voor de bouw, textiel & tapijt, wonen, asbestverwijdering, scheep- en jachtbouw, oppervlaktebehandeling en de kunstenaars. Voor de schoonmaakbranche, die hier als voorbeeld wordt behandeld, en de tandtechnici wordt de evaluatie van huidblootstelling ingebouwd.

Presentatie Stoffenmanager Schoonmaak

In deze presentatie wordt het eindresultaat voor de schoonmaak- en glazenwasserbranche getoond: de Stoffenmanager Schoonmaak. De Stoffenmanager Schoonmaak onderscheidt zich op veel punten van de generieke Stoffenmanager, waaronder:

- De Stoffenmanager Schoonmaak kan huidrisico's beoorde-

len en waar nodig het effect van beheersmaatregelen doorrekenen.
- Alle werkzaamheden met schoonmaakmiddelen zijn in kaart gebracht. Dit maakt het uitvoeren van een risicobeoordeling veel eenvoudiger, want een gebruiker kan volstaan met de keuze van een voor hem/haar herkenbare schoonmaakmethode, de mate van verdunning en enkele blootstellingvragen.
- De branche heeft een eigen productendatabase ontwikkeld, waarmee gebruikers de benodigde productgegevens eenvoudig en snel kunnen binnenhalen.
- Tijdens het uitvoeren van een risicobeoordeling corrigeert de Stoffenmanager Schoonmaak voor de mate van verdunning. De berekening van de gevaarseigenschappen van het verdunde product verloopt via de rekenregels van de preparatenrichtlijn.

De demonstatie staat vooral stil bij de nieuwe mogelijkheid om tegelijkertijd de risico's door blootstelling via de huid en via de ademhaling te beoordelen.

Conclusie

De Stoffenmanager Schoonmaak laat zien dat het opnemen van branche-eigen handelingen en producten het voor de gebruiker eenvoudiger maakt om de Stoffenmanager toe te passen. De opname van het huidrisico maakt de risico-evaluatie completer, maar verhoogt de complexiteit.

ATEX manager: development of a web-based tool to support companies in controlling explosion risks (ATEX regulations)

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Introduction

ATEX is the name of the framework for controlling explosive atmospheres and the standards of equipment and protective systems used in them. It is based on the requirements of the European Directive 99/92/EC (also known as ATEX 137, regarding protection of workers potentially at risk from explosive atmospheres) and the European Directive 94/9/EC (also known as ATEX 95, concerning equipment and protective systems intended for use in potentially explosive atmospheres). Both guidelines have the objective to control the risk of potentially explosive atmospheres. Until now only a small part of the Dutch companies have taken measures to comply with the ATEX regulations. Especially in SME's management of explosion risks is observed to be poor.

To assist companies in controlling explosion risks a web-based tool (ATEX manager) is developed that will enable users to determine explosion risks and take preventive measures in a systematic approach. Development of this tool is part of a program initiated and funded by the Dutch Ministry of Social Affairs and Employability (the "VASt" programme). As part of this program the web-based tool called "Stoffenmanager" was developed, a tool for prioritisation of risks of chemicals in the workplace. The ATEX manager will be integrated with the Stoffenmanager.

Methods

In the Netherlands the animal fodder industry has already developed an instrument (on paper) for controlling explosion risks in the workplace. Based on this approach, an electronic version of this instrument will be built, to be used specifically in this sector. In a second step this tool will be transformed to a generic version for use by companies in other industry sectors.

Basically the tool will consist of the following parts:
- a module for data entry of flammable substances/products and classification of these substances/ products in categories on the basis of critical parameters like Minimal Ignition Temperature, Minimum Ignition Energy, smoldering temperature and flashpoint;
- a module to classify explosive atmospheres into zones en to determine the size of the zone, on the basis of source characteristics, location, ventilation and good housekeeping;
- a module for actual explosion risk assessment per defined explosive zone.

For each of the defined explosion zones risk assessments for chosen scenarios (operational conditions, ignition sources, presence of workers, equipment characteristics, location, etc.) will be made in a semi-quantitative way by combining a score for the likelyhood of an explosion and a score for the adverse effects of an explosion into a risk score.

Results

The version of the ATEX manager for the animal fodder industry will be available in January 2007 and shall be demonstrated during the Symposium. After finalizing the specific version of the animal fodder industry, a generic version will be built to service all industry sectors. This instrument will be available in April 2007.

Conclusions

Until now assessing explosion risks and giving guidance on control measures to be taken has been the field of experts. The ATEX manager incorporates part of the knowledge of experts and enables firms to perform an ATEX assessment at least partly by themselves. If this is a viable approach and will result in a larger percentage of companies taking the proper measures to control explosion risk, has to be evaluated after the tool has become operational as a web-based instrument.