

Effective instruments for safety in the use of dangerous substances

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1. Introduction

Today almost in each company in Europe people work with a large variety of chemical products. There exist numerous regulations in order to prevent damage from the employees handling these products. The transformation of these duties into the operational practice is a difficult and demanding task.

The construction industry is such an economic sector in which small and medium-size enterprises dominate. We know that these companies only have a very restricted knowledge about the dangers while working with hazardous materials. At the same time, the possibilities to take up the necessary technical protective measures on the variable and temporary workplaces on construction sites are only low.

In order to enable the companies at all to comply with their duties and by this to protect the employees' health, the professional associations of the construction industry built up the hazardous materials information system GISBAU already in 1989. Within the last years we have intensively dealt with the improvement of the information about hazardous materials and its distribution. We have won numerous experiences and knowledge in this time. On this basis we developed a simple and effective way to inform the companies and also we established this way in the construction industry.

From our experiences today we can say, that the way to inform the companies about the risks related to chemical agents at work must be a very, very simple one. The information must be obtained extremely easily and orientate itself at the state of knowledge of the users. Only then it will achieve, that the companies seriously take up measures for protection of the employees' health. .

Modern construction industry

The modern construction industry uses chemicals on large scale and the trend is increasing at the most different activities. Only some examples of these hazardous materials are high solid paints, strippers, adhesives, thinner, wood protection and cleaning agents. Certain activities are just not

possible without the use of hazardous materials at all. Therefore, hazardous materials require a careful handling so that dangers are excluded for the health and the environment.

Regulations on dangerous substances

For the protection of these dangers numerous regulations exist - not only those of the European Community but also German national regulations. These legal regulations establish a variety of duties for the companies working with chemical agents. Implementing these duties into their daily operational practice is a difficult and demanding task.

At the same time, we know, that small and medium-size enterprises of all economic sectors and trades are obviously not able to cope with this. There is a lack of base qualification in the hazardous substances domain for most employers from small and medium-size enterprises. Essential duties are unknown to them and the basic knowledge necessary for the fulfilment of their obligations is missing as well as the required action knowledge. To train hazardous substances experts in all companies is just as inappropriate as an approach to be satisfied with a low level of protection.

These difficulties which in principle exist in all small and medium-size enterprises of all economic sectors and trades are extended by some aspects coming out of the special framework conditions in the construction industry.

The environmental conditions of the workplaces are traditionally subject to a steady change in this line of business. Work-processes frequently last for only a few days, hours or even minutes. The variety of working conditions, almost incalculable possibilities of variations (climatic influences etc.) and an inexhaustible choice of construction chemicals make it more difficult to make statements concerning the endangering of the employees.

It is therefore almost impossible for the companies to recognize the dangers which occur from the processing of certain substances and they are also not able to protect themselves appropriately even if they are motivated to do so. Without out-of-house support the companies are overtaxed with coping these difficulties. Therefore other ways of solutions must be consulted and new strategies developed to only demand from the companies what they even can convert.

GISBAU – the solution

In front of this background, the "Berufsgenossenschaften" of the construction industry (the 7 Bau-

Berufsgenossenschaften and the Tiefbau-Berufsgenossenschaft, a kind of legal accident insurance companies for the construction industry) have decided already 1989 to give a support to the companies concerned. Together they built up the hazardous materials information system GISBAU as an industry-specific solution for the construction industry.

GISBAU as an out-of-house support wants to be a service facility for the companies in the hazardous materials management and at the same time primarily promotes the safe handling of hazardous materials. Very different ways and solution strategies were elected the mastering of this complex task for the individual areas of the construction industry. The way chosen by GISBAU at first was the distribution of hazardous materials information in form of leaflets for the individual construction chemical.

The question very often was and still is whether this task hasn't lost meaning in face of the numerous databases on dangerous substances as well as the material's safety data sheets. This question can obviously be answered, also in the year 2003, for the following reasons with no:

Today indeed numerous really good databases provide data on single dangerous substances. But one must make himself clear again and again, that the data saved in these data bases, however, becomes some usable information only by the application of knowledge. Without chemical or even toxicological knowledge - which really is not available at least in companies of the construction industry - these data won't become meaningful information.

But even if for chemically pure substances sufficiently understandable information would be available, this only would give little help for the practice. One must always take into account that only very few small and medium-size enterprises use chemicals as pure substances in their activities. The predominant number of all companies nearly exclusively uses chemical products which are usually sold by the manufacturers as mixed preparations of substances, more or less in a condition ready for use.

Besides the labelling, in most cases the material's safety data sheets for these dangerous preparations are the only available information sources for the employers. But even in 2003 especially statements in safety data sheets concerning protective measures are not as detailed as they should be in order to support the SMEs sufficiently.

In this situation, for the first time, GISBAU has gone the laborious way to produce understandable

information for handling with hazardous materials. The specifically new feature in this procedure is, that the information about the preparation is available under its trade name like it also is present in the companies. Understandable, simple formulated indications for the safety at work and protection of health are given for all hazardous materials in about 20 information chapters.

GISBAU-Information

However, this GISBAU information is simply not only a better formulated safety data sheet how it may perhaps seem at first sight. The information shall enable the employer to receive all relevant information and notes which he needs for a reliable protection of his employees.

This includes information or data which neither today, nor probably in the future will be available from the manufacturer: On the one hand because the manufacturer does not have this data (for example concrete exposure data for different work places) - on the other hand because he has no comprehensible interest to pass this information to his customers (for example notes about substitute substances or substitute methods). Besides the safety data sheets and technical leaflets provided from the manufacturers, knowledge about the ingredients and background knowledge of the GISBAU experts flow into the preparation of GISBAU product-information. The information is extended by specific details of the application methods. Additionally the results of own workplace measurements are taken into account.

It is therefore for the first time possible to make concrete statements about the necessity of specific protective measures and behaviour rules in the field of miscellaneous applications. For example a certain adhesive for floor coverings may be used without any protective measures, another adhesive may, however, be processed only with exhaust ventilation or with respiratory protection.

This way, GISBAU has made some thousand product information. But, even if the information was easily understandable, the large number of single product-information claimed for an on-going solution.

Product groups

For the same application purpose usually numerous hazardous materials which are very similar in their composition are offered by different manufacturers. The risks to health and necessary protective measures for these products are also very similar.

The obvious thing to do would be to combine comparable products to product groups. These groups bring together products which are comparable with regard to the safety at work and the protection of health; a judgement of each individual product can therefore be omitted.

Through this way GISBAU succeeded to inform about the large variety of the chemical products in the construction industry using a limited number of comprehensible product group information. The assignment of the product used on the construction site to the right product group information is carried out by a code of characters and numbers (e.g. GISCODE or product code), which is printed in the price lists, safety data sheets and on the containers by the manufacturers.

Information for the employees

One important demand for the use of hazardous materials must be the sufficient information of the employees. The employee must become conscious about the dangers and risks of health at his work. The essential dangers and protective measures have to be explained in a written operating instruction in the language of the employee.

In the construction industry we are in the difficult situation, that the number of workers who speak German is strongly decreasing. On construction sites you will find many employees from Turkey, Portugal, Poland etc. To be able to give a support also in this difficult situation, GISBAU has translated all operating instructions into (at the moment) 13 languages. This special service enjoys a high demand.

Software - WINGIS

In the context of the work of GISBAU, it has fastly become evident, that not only a verbal and written advice is wished by the companies. Many companies desired an EDP supported application for their work. The PC software WINGIS therefore was already early developed. This software provides among others information about chemical pure substances but primarily about the hazardous preparations used at the workplace.

Besides this, the software contains numerous functions for a complete hazardous materials management in the companies. Due to the contained product information about thousands of products and the helpful additional functions the software enjoys the greatest popularity with the companies. Every year several ten thousands of the CD-ROMs are given by the "Berufsgenossenschaften der Bauwirtschaft" to their members, the construction companies. Other

firms may buy this CD-ROM for the low price of about 15 €

Increasing importance for the distribution of the GISBAU information wins the internet. Needed up-to date documents and information about products and materials can fastly and specifically be "transported" into the firms through this way. The product group information, booklets and much more is available under the address www.GISBAU.de.

Conclusion

Just like in most other industrial sectors in which small and medium-size enterprises dominate, the implementation of the numerous hazardous materials regulations is hardly possible in the construction industry. Difficulties which arise from the permanently changing working conditions on place-variable construction sites are added to these fundamental problems.

Without an out-of-house support these companies are not able to effectively implement the aims of industrial health and safety standards into practice and with that, to operate an independent hazardous materials management. With GISBAU the "Berufsgenossenschaften der Bauwirtschaft" have established a sector-wide support concept for their member companies.

Product group information - as one part of GISBAU's work - have proven as a particularly effective instrument for the information about the safe handling of chemical products in the construction industry. This way may easily be adopted for other sectors which are in a comparable situation.