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Minutes of the 6th ICdA H&S Committee

October 15th, 2010
DIAMANT - CONFERENCE & BUSINESS CENTER
Meeting room NEWTON BC
Boulevard A. Reyers 80
B-1030 BRUSSELS

1- Introduction

Christian Canoo welcomes the participants. Seventeen people representing Floridienne Chimie, Hoppecke, IZA, James M. Brown, Nyrstar, Portovesme, Saft, Snam, UK Enersys, 5NPlus and ICdA attend the meeting, and introduce themselves (cf. file 1 Attendance list). Each participant signs a statement of compliance.

The provisional agenda proposed by ICdA is adopted (cf. file 2 Agenda).

2- Approval of the minutes of the 5th H&S committee (June 8th, 2010)

The minutes of the fifth H&S committee (June 8th, 2010) are approved unanimously.

3- Objectives of the meeting: Status of the REACH process for Cd-substances and corresponding "Risk Management measures" (Christian Canoo)

In his presentation (cf. file 3 ICdA 6th H&S Committee) Christian Canoo reminds the objective of the ICdA Health & Safety committee which is to disseminate the ICdA Guidance document to ICdA member companies and their key personnel.

The Cd/CdO risk assessment having initially showed that there were in Europe risks for workers under current management methodologies, the decision was taken, some 3 years ago, to assist ICdA members with the implementation of the ICdA Guidance document "ICdA Guidance on the management of the risk related to chronic occupational exposure to cadmium and its compounds".

Christian Canoo explains this session is a bit an outlier in the general framework of H&S committee meetings. The program of this 6th H&S committee has to be reformatted due to a lack of time in preparation of the foreseen topic "Choosing and maintaining the right Personal Protective Equipments (PPE)". The choice of the topic 'status of the REACH process for Cd-substances and corresponding 'Risk Management measures' was chosen in order to give an



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overview of the finalized 1st registrations for Cd-substances (deadline REACH 1st registration 30/11/2010).

4- Review of the registered files so far (*Christian Canoo*)

Christian Canoo informs on the 7 Cadmium substances (cadmium metal, cadmium oxide, cadmium hydroxide, cadmium nitrate, cadmium chloride, cadmium carbonate, cadmium sulphide) and 1 intermediate (cadmium sulphate) registered so far with the respective lead registrants for the 1st registration deadline. Cadmium telluride, Cadmium sulphoselenide and Cadmium zinc sulphide are planned to be registered by 2013 (2nd Reach registration deadline May 2013). (cf. file 3 ICdA 6th H&S Committee)

5- Survey of a Iuclid-dataset and CSR: case of Cadmium metal (*Noomi Lombaert*)

Noömi Lombaert gives a demo of the IUCLID-dataset and CSR (chemical safety report) for the case of Cadmium metal. IUCLID which stands for International Uniform Chemical information database, is the key software application essential for chemicals industry in which data on intrinsic and hazard properties of chemical substances has to be stored, maintained and exchanged in order to comply with the new Reach legislation.

The several endpoints of IUCLID like

- classification and labelling
- manufacture, use and exposure
- physical and chemical properties
- environmental fate and pathways
- ecotoxicological information
- toxicological information
- guidance on safe use
- assessment reports

are shown and shortly discussed. N. Lombaert explains the principle of creating the CSR which is in first instance automatically created starting from the IUCLID data and secondly scientifically elaborated to justify and make the reasoning's.

6- Restitution of OCdBIO-2 (Occupational Cadmium Bio Indicators Observations) 2009 Data (*Professor Bernard*)

Patrick de Metz, the H&S committee chairman, introduces the invited speaker: Pr Alfred Bernard in charge of the Unit of Toxicology and Applied Pharmacology of the Catholic University of Louvain.

In his presentation Pr Bernard comments the results of the occupational cadmium Bio indicators observations:

- 1) The program is based on 3 fundamental observations:
 - a. Cd is a cumulative poison, the kidney being the critical organ
 - b. Critical renal effects are also observed



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- c. It is unique to Cd that the Cd body burden can be estimated based on urinary Cd
- 2) Some years ago the target regarding risks was to diagnose the disease, and therefore to maintain Cd-U (Cd in urine) under the critical value. Now, risks being less and less accepted, the new objective is to get closer to primary risk and to prevent the accumulation of Cd, the main indicator being Cd-B (Cd in blood).
 - 3) Pr Bernard comments a tentative scale to evaluate risks, based on his publication (1996) establishing 4 zones, the red one ($>10 \mu\text{g Cd/g cr}$) being the zone we should avoid, considering that above this value there is a linear increase of the risk.
 - 4) The distribution of Cd-U has been established using the data of 15 EU sites, representing a large population of 2.626 people:
 - 84.5% of the people, under $2 \mu\text{g Cd/g cr}$, have in theory no risk (data 2008: 80.6%)
 - 1.3%, above $10 \mu\text{g Cd/g cr}$, are probably people under risk, but we may guess that most of these people have nowadays been removed from exposed areas (data 2008: 2.3%)
 - 5) The distribution of Cd-B is based on the data of 16 EU sites, representing a population of 1.883 people:
 - 73.1% of the people are in the green area ($<2 \mu\text{g/L Cd in blood}$), and 1.1% in the red area ($>10 \mu\text{g/L Cd in blood}$) (data 2008: 72.9% and 1.4%)

Summary of the discussion on the presentation

In his presentation Pr. Bernard compares the biomonitoring data between 2008 and 2009 showing a decrease in the proportions of workers with CdU above the OEL of $5 \mu\text{g/g creatinine}$ and conversely an increase in the proportion of workers with CdU below $2 \mu\text{g/g creatinine}$. This reduction in exposure levels suggested by these data is however not reflected by the CdB values. CdU levels higher than $10 \mu\text{g/g creatinine}$ and even of $5 \mu\text{g/g creatinine}$ are usually found in workers with a long duration of employment. The decreasing trend observed with CdU is most probably the consequence of the removal from the database of workers who had reached the retirement age.

Unanimously everybody agrees that efforts should be pursued to further reduce the exposure levels in some sites in order to maintain the CdB values at a level (below $5 \mu\text{g/l}$), which is unlikely to result in an excessive accumulation of Cd.

Renal effects of low environmental exposure to cadmium: evidence of reverse causation.

Pr. Bernard presents in his second presentation some new scientific data (confidential and not yet published), in the framework of the European PHIME project, related to low environmental exposure to Cd.

In this project several groups of children, adolescents and adults with low environmental exposure to Cd are examined for CdU, retinol-binding protein (RBP) and albumin.

The main outcome of these data are that the most logical explanation for the findings of renal effects after low environmental exposure to cadmium is a reverse causality due to the co-excretion of metallothionein (main Cd binding protein) with other low molecular proteins. Pr.



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Bernard suggests that at low environmental exposures, Cd-U would be more a reflection of the tubular reabsorption capacity of LMW proteins than of the past or current exposure to Cd.

7- Review of the “Risk management measures” developed in each Cd-Reach dossier, i.e. exposure scenarios and assessment (Frank Van Assche)

Frank Van Assche presents in his presentation (cf. file 3 ICdA 6th H&S Committee) the Risk management measures (RRM) for Cd and Cd substances under REACH. Starting from the basics of the SCOEL SUM doc defining iOEL at 4 µg cadmium per cubic meter of air (respirable fraction), RRM are explained as a stepwise approach in Cadmium REACH dossiers. Risk management of occupationally exposed workers will be based on medical monitoring and individual medical follow-up. The medical monitoring includes cadmium in urine, measured as micrograms of cadmium per gram creatinine, and/or cadmium in blood, measured as micrograms of cadmium per liter of whole blood. Early (sub-clinical) indicators of renal tubular dysfunction (kidney failure) may be established by biological indicators such as β-2 Microglobulin (β-2 MG) or Retinol Binding Protein (RBT). Thus, the safe area in which no action is required involves a combination of a cadmium-in-urine level below 2 µg cadmium / gram creatinine, a respirable cadmium-in-air concentration below 4 µg/m³, and levels of biological indicators of kidney function, such as β-2 microglobulin or retinal binding protein, to be below 300 µg/g creatinine. For cadmium-in-urine levels above 2 µg/g creatinine, but below 5 µg/g creatinine, medical follow-up is required. Cadmium occupational exposure is not allowed if cadmium-in-air levels exceed 4 µg/m³ or cadmium-in-urine measurements exceed 5 µg cadmium / g creatinine or β-2 microglobulin levels exceed 300 µg/g creatinine.

8-Setting of 7th H&S committee and long term planning

The date for the 7th H&S committee with as theme: Choosing and maintaining the right Personal Protective Equipments (PPE) is fixed on June 7th. A questionnaire will be prepared and circulated by Rolf Rodermund (Xstrata)

Regarding the long term planning, the next meeting has to be fixed with as theme: “Implementing a prevention culture in our facilities”

It is again agreed that the key activities of the H&S Committee will remain:

- To generate a revision of the ICdA Guidance
- To make a follow up of the new regulation requirements
- To keep updated the OCdBio Observatory
