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## Minutes of the 7<sup>th</sup> ICdA H&S Committee

June 7th, 2011  
**DIAMANT - CONFERENCE & BUSINESS CENTER**  
**Meeting room NEWTON BC**  
**Boulevard A. Reyers 80**  
**B-1030 BRUSSELS**

### **1- Introduction**

Christian Canoo welcomes the participants. Fifteen people representing First Solar, Floridienne Chimie, IZA, James M. Brown, Nyrstar, Portovesme, Saft, Xstrata Zink, 5N Plus 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 6th H&S committee (October 15th, 2010)**

The minutes of the sixth H&S committee (October 15<sup>th</sup>, 2010) are approved unanimously.

### **3- Objectives of the meeting: Scope of ICdA program, connection with the REACH process and corresponding “Risk Management measures” (Patrick de Metz)**

In his presentation (cf. file 3 ICdA 7<sup>th</sup> H&S Committee) Patrick de Metz 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”.

Patrick de Metz lists the past H&S committees with mentioning the topic of the current 7<sup>th</sup> H&S committee which is “Choosing and maintaining the right Personal Protective Equipments (PPE)”.

### **4- Regulatory framework**



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### Cadmium regulation framework in Germany (Rolf Rodermund)

Rolf Rodermund presents (cf. file 3 ICdA 7<sup>th</sup> H&S Committee) the working of the 'Committee on hazardous substances' which is represented by social partners (industry and unions). The Committee on hazardous substances is a tripartite committee advising Federal Ministry of Labour and Social Affairs. 3 subcommittees are assisted by working groups:

- Hazard management (I)
- Protection measures (II)
- Hazard risk assessment (III)

An overview of the previous and current OEL system is given:

Previous system (abandoned end of 2004)

- ▶ health-based OELs (MAK values) for non-carcinogens (& for carcinogens with threshold)
- ▶ technical-based OELs (TRK values) for about 70 carcinogens (without threshold)

Current system (introduced as part of the new Hazardous Substance Ordinance in 2005)

- ▶ only health-based OELs
- ▶ technical-based OELs abandoned
- ▶ Risk based concept for CMR's without lower effect threshold (ERB – Exposure – Risk – Relationship)

The Committee on hazardous substances has his proposal for ERB (Q1 2010) in order to establish a risk based value according to the approach published in the announcement 910 results in extremely low values: 16 ng/m<sup>3</sup> (respirable fraction).

The actual status in the Committee on hazardous substances is that :

- ▶ The subcommittee has accepted, that such low values of Cadmium in air are not realistic. Industry will never reach an acceptable risk. An ERB shall not be established.
- ▶ The subcommittee has accepted the argument, that at such low concentration in air biomonitoring becomes the most important monitoring factor.
- ▶ Biological reference value (BAR<sup>\*</sup>):  
Cadmium in Urine 0.8 µg/l  
Cadmium in Blood 1.0 µg/l
- ▶ A BLW (Biologischer Leitwert) (=biological guidance value) shall be developed. 1<sup>st</sup> proposal is very close to / identical with the BAR.

After discussions it is taken as an urgent action point that a meeting should be organized between ICdA together with Martin Wieske (from the Metal Wirtschaftsvereinigung and representative in the subcommittee III meetings) and the Committee on hazardous substances to present our industry position referring to SCOEL final SUMDOC (febr 2010) and our risk management system.

N. Lombaert reminds that already May last year a position paper from ICdA was presented by M Wieske in the Subcommittee III meeting which comments on the proposed ERB (Exposure Risk Ratio) for Cadmium and its inorganic compounds. In this it was clearly stated that the sole basis for the derived point of departure is the Takenaka et al. study (1983)



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which is not a good starting study (animal cadmium chloride study). Methodologically weakness when derivation of the ERB values were addressed and SCOEL and our risk management system were clearly explained.

### EU Regulatory framework concerning workers protection and the PPE-solutions (Christian Canoo)

Christian Canoo gives a short overview of the current EU directives in force concerning workers protection and PPE solutions (cf. file 3 ICdA 7<sup>th</sup> H&S Committee).

The council Directive 89/686/EEC covers personal protective equipment (PPE) and lays down harmonized conditions for placing PPE on the market. The directive 89/656/EEC defines the term 'personal equipment' as "... designed to be worn by the worker to protect him against hazards encountered at work". Such equipment must be used when the existing risks cannot be sufficiently limited by technical means (e.g. LEV: local exhaust ventilation) of collective protection or work organization procedures.

Currently the European Commission is holding a public consultation on the possible approach towards the revision of the Personal Protective Equipment Directive 89/686/EEC and is inviting all interested parties to contribute. The consultation process runs from 13 April 2011 to 14 June 2011.

### 5- Survey of PPE-standards among ICdA members (Rolf Rodermund)

In his presentation (cf. file 3 ICdA 7<sup>th</sup> H&S Committee) Rolf Rodermund presents the results of the "PPE questionnaire" on the 'Personal Protective Equipment' among ICdA members, prepared for ICdA by Rolf Rodermund (Xstrata Zink GmbH) and his team.

14 questionnaires have been received back until May, 24th 2011 with as main activity among the participants: "batteries". The questionnaire is divided in 3 main parts: 1) personal protective equipment 2) respiratory protection 3) working clothes.

Below a summary is given of the most relevant answers on the several questions.

1) personal protective equipment

Q 1.1 Which kind of PPE is provided?:  work gloves/ protective gloves  safety shoes  safety glasses/ face shields  respiratory protection/ respirator masks

Q 1.2 Which kind of protection class/ level have the safety shoes?: S3 (which are the standard shoes)

Q 1.3 Which kind of gloves will be used in your company when working with cadmium?: leather gloves.

It is stated that gloves are more specific to the process than to the industry (e.g. refining: leather gloves). The differences in the categories of gloves refer to the chemical resistance.

Q 1.4 What kind of respiratory protection is in use? : half mask with P3-filter

Nyrstar, Xstrata etc., all confirmed to use P3 which filters at least 98% of airborne particles. Full masks with injected air are reported under the category 'other'. These are especially used in high temperature conditions e.g. welding. Also for maintenance workers these masks can be useful in cases they are exposed to high temperature.

Q 1.5 Does your company provide one-time overalls for carrying out special (dirty) works?: unanimous answered „yes“



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## 2) respiratory protection

Q 2.1 *Which are the criteria to determine areas, where respiratory protective equipment has to be worn?* Cadmium in air measurement followed closely by Risk Assessment

Q 2.2 *Is there a medical examination for concern on wearing respiratory protective equipment?* Majority answered it is obligatory

Q 2.3 *Is there a time limit for wearing respiratory protective equipment?* 12/14 answered no, 2/14 :yes and nobody indicated limitations for masks only. Although it is mentioned during the meeting that there seems to be in Germany a time limit of 120 min for wearing half mask followed by a pause.

Q 2.4 *Is there an extra payment for wearing respiratory protective equipment?* Majority answered ,no'

Q 2.5 *Are contractors treated like own personnel?* 12/14: yes, 2/14: no

Q 2.6 *Who is responsible for cleaning the respiratory protective equipment?* Employee Xstrata confirms that the more complicated the respiratory protective equipment is the better to have a specialist for cleaning. For Nyrstar half-mask operators need to clean themselves and need to be responsible themselves.

Q 2.7 *Who is responsible for repairs?* In majority : the company

Q 2.8 *How often are the masks/filters be cleaned/maintained?* In majority: daily

### Recommendation on respiratory protection:

- Respiratory protection depends on the frequency of use.
  - From time to time use: whole spectrum of masks can be used
  - Permanently use: systems with blower and P3 filter
- Masks need to be personal

## 3) working clothes

Q 3.1 *How often are the clothes changed?* Daily and Other: twice a week; after heavy maintenance activities; depends on where the employee works; on request; worker decide himself

Q 3.2 *Who is responsible for cleaning?* company

Q 3.3 *Who is responsible for repairs ?* company

### Recommendation on working clothes:

- Working clothes should be daily changed in dusty environments
- Not take clothes home
- When cleaning in external companies, there should be an assurance that there is a waste water treatment

It is agreed that a fact sheet on the PPE recommendations will be made, which can be added finally to the ICdA guidance.

## **6- Occupational Cadmium Bio Indicators Observations** (Noömi Lombaert)



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Noömi Lombaert starts her presentation with an introduction in reminding the aim of the OCdBio. The OCdBio, in which biomonitoring data is collected in the Cd industry, started up in 2008 in order to convince ourselves and authorities on the efficiency of our risk management program and the compliance of the current exposure levels with the OELs. The selection of the 2 biomarkers of exposure is explained. Cd-B ( $\mu\text{g/l}$ ) is an indicator of recent exposure and Cd-U ( $\mu\text{g/g cr}$ ) as biomarker of the amount of Cd stored in the kidney cortex where the first signs of Cd toxicity develop. The data is collected as sets of categorized data giving the number of workers in seven pre-defined categories. These predefined categories are grouped in categories based on the action levels of CdU and CdB used in the industry which are based on the risk of developing renal tubular dysfunction. In the OCdBio review 2009 by Prof Bernard, 4 zones are reported to evaluate the risks namely Cd-U ( $\mu\text{g/g cr}$ ) : <2 : 2-5; 5-10; >10. In this review he reported an action level starting from 5  $\mu\text{g/g cr}$  which is not in accordance with our risk management program. We redefined a 1<sup>st</sup> action level starting from 2 $\mu\text{g/g cr}$  and a 2<sup>nd</sup> action level starting from 5  $\mu\text{g/g cr}$ . N. Lombaert presents the characteristics of the OCdBio 1 (data 2008) and OCdBio 2 (data 2009) and shows the comparison graphs of the results of data 2008 and 2009.

For the 2009 data:

- 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%)
- 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%)

In conclusion the comparison of the biomonitoring data between 2008 and 2009 shows 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. However this can only be really proved in a pairwise comparison.

This trend shows 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.

N. Lombaert reminds regarding the OCdBio 3 data 2010 collection, that anonymous data is sent to ICdA as trustee, the data is aggregated across all respondents and shared with Pr



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Bernard and that Pr Bernard will conduct a review and present us with results probably in the next H&S Ctee with an assessment.

Practically, all companies and plant directions should be encouraged again to participate voluntarily (*questionnaire* to be *filled in before end of July*). The technical recommendation is to adopt all the same reported units for the data:  $\mu\text{g Cd/g creatinine}$  for  $\text{Cd}_{\text{Urine}}$  (the correction of creatinine concentration is essential for valid interpretation) and  $\mu\text{g Cd/L}$  for  $\text{Cd}_{\text{Blood}}$

It was agreed that a broadened distribution of the questionnaire could be interesting. The usefulness of collecting North-American, Canadian sites data was confirmed by Saft, Nyrstar, Xstrata Zink, First Solar, 5N Plus. It was also agreed for the questionnaire OCdBio 3 to skip the last column in the current questionnaire 'Of which number of workers medically removed from Cd exposure' but rather to ask the question separately.

### **7- ICdA conference in China- November 2011** (Noömi Lombaert / Christian Canoo)

Noömi Lombaert and Christian Canoo announce the upcoming ICdA conference in China (Kunming) this year November 11<sup>th</sup>-13<sup>th</sup>. The theme of the conference will be 'Risk Management and Control of Cadmium' which needs surely more attention and training in China, hence the location decision. This conference will be the 8<sup>th</sup> ICdA conference after a break in a row of previous well attended ICdA conferences that were held each 2-3 year from 1977 up to 1992. N. Lombaert presents the topics of the conference program being:

- Four General Overview Papers – Market and Applications, Health Effects, Environmental Effects, Regulations
- Controlling Cadmium Exposure in the Workplace
- Controlling Cadmium in the Environment
- Controlling Cadmium in the General Population: Recycling of Cadmium, Cadmium in Consumer Products, Cadmium from Non-Product Sources

C. Canoo reports on the current organisation of it and the planned visit upfront to China end of June. Finally C. Canoo warmly welcomed the participants to participate to this conference and if invited them for presenting a paper if interested.

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

The date for the 8<sup>th</sup> H&S committee with as theme: Implementing a prevention culture in our facilities is fixed on October 13<sup>th</sup>. To Mr Ismet Gumusboga (Floridienne Chimie) is asked to discuss if a questionnaire can be prepared and circulated by Floridienne Chimie and possibly presented and commented by Mr Simon Vljajic at the October meeting.

Regarding the long term planning, the next meeting has to be fixed and suggested as preliminary theme: "Water treatment"

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



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A topic as 'Water treatment' will be an outlier in the sessions of H&S Committee.

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