International Cadmium Association

168 Avenue de Tervueren/Box 4 • B-1150 Brussels, Belgium
Tel. : + 32(0)2-776 00 77 • Fax : + 32(0)2-777 05 65
Email : mgilles@cadmium.org

Minutes of the 20th ICdA H&S Committee

June 22nd, 2022
10:00 h – 12:30h
Meeting by video conference

1 Introduction

Welcome by Mik Gilles to the participants (cfr. Annex 1 Attendance list).
Each participant is asked to accept and comply with the statement of compliance as shown on the screen (cfr. Annex 2, slide 3).

2 EU Commission initiative to amend the Carcinogens and Mutagens Directive with a Biologic Limit Value (BLV)- Feedback from the Working Party Chemicals meeting (Noömi Lombaert - ICdA) (cfr. Annex 2, slides 4-18)

An overview was given of the revision procedure and where we stand at this moment with Cadmium.

The conclusions of the ECHA Risk Assessment Committee (RAC) where submitted to the EU Commission. To meet the deadline as set in the Amended Directive "July 11, 2022", the Advisory Committee on Safety and Health at work (ACSH) has asked its expert group Working Party of Chemicals (WPC) to open the discussion on the setting of an OEL and BLV. By doing so, the Commission considers that the deadline set forward in the Directive has been met.

Since the focus of this item on the agenda of the 14th of June WPC meeting was to meet the deadline, discussions on the topic itself were limited. The workers representatives are happy with the 1µg Cd/m³ inhalable as it is the most conservative value. Amongst some member states, there was some concern (Finland, Germany) about the difficulty to introduce a BLV, although that is a done deal since the Chemical Agents Directive (CAD) which included an OEL and BLV for Pb, has now merged with the CMD into the CM**R**D Directive. We will provide some extra confidence to the WPC by sharing information on our voluntary monitoring, showing EU implementation and the steady progress that is made.

Further, the chair (Finland) was not convinced that 4µg Cd/m³ was a conservative value (for inhalation toxicity). This is another item of attention to be addressed by ICdA during advocacy actions.

The COM representative noted that a new socio-economic impact assessment (IA) is required if the values within the CMRD are changed. We remind you that the outcome of the previous IA is that although there was a huge imbalance between cost to industry and societal cost, the IA conclude that due to developments during the transition time, cost of abatement will go down and that the proposed measures are proportional. Reality is that cost of these measures has only gone up. This might be something to comment on as well.

ICdA submitted a short position paper a few days ahead of the meeting but it looks not much attention was given. Likely few WPC members have read it before the meeting as there was no intention yet to elaborate on cadmium during the meeting. ICdA will now prepare an Annex to the document showing today's Cd biomonitoring practice in the different EU member states and progress that was made over the past 14 years of monitoring by sharing experience amongst companies and implementing best practice.

3 OCdAIR-9: results, analysis, discussion (Mik Gilles - ICdA) (cfr. Annex 2, slides 22-30)

For 2021, ICdA received exposure data of 3607 workers in 33 EU plants. We see that reporting has reached maturity in terms of quality and quantity of reported data.

If we consider the geometric mean as assessment criteria, there were only 3 Similar Exposure Groups (SEGs) representing 24 workers, where the exposure limit of 4µg Cd/m³ respirable was exceeded.

When implementing the monitoring standard EN689 (70% confidence interval of the 90 percentile) which most member states implement, in 11% of the SEGs representing 7% of the exposed workers, the limit value of 4µg Cd/m³ (respirable fraction) is exceeded. We urge our members to assess how the exposure in these SEGs can be reduced.

Further, 37% of the SEGs don't have sufficient samples to do valid assessment.

If a workplace limit would be set at 1µg Cd/m³ inhalable, more than 57% of the SEGs would not be compliant. Obviously, that would be a dramatic scenario and ICdA will continue its advocacy to reach agreement on an OEL of 4µg Cd/m³, respirable.

4 OCdBIO-14: results, analysis, way forward (Mik Gilles - ICdA) (cfr. Annex 2, slides 31-45)

For 2021, ICdA received exposure data of 5050 workers in 36 EU plants.

For cadmium in blood (CdB), the following observations were made:

- Good progress was made: exposure of workers was again reduced in 2021
- But…
  - Still too many workers have too high level of exposure to keep (or bring) them below the target of 2µg Cd/g creatinine: 9.1% of all workers exceed 2µg Cd/g creatinine.
- Future compliance with BLV of 2µg Cd/g creatinine?
  - We should keep all workers below 4 µg Cd/L in blood and take pro-active measures when exceeding 2µg Cd/L as recommended in the ICdA Guidance.
- Continued attention is required to reduce exposure and comply with the new upcoming exposures limits. We recommend everyone to look at the data from his plant to identify if actions are required towards personal hygiene or reduction of exposure to Cd in air.

Conclusions on CdB:

- Over the past 15 years, our industry has consistently improved the workplace exposure of its workers…and these efforts should continue.
- Exposure to Cd is continuously going down but levels are likely too high to keep all workers <2µg Cd/g creat. Considering the number of workers that exceed a CdB of 2µg Cd/L, we expect a future increase in the number of workers exceeding a CdU of 2µg Cd/g creatinine.
- The new CdB action levels now respectively set at 2µg/L and 4µg/L (see Guidance 2018) need to be strictly implemented by the occupational doctor to ensure that CdU of recent workers (hired since 2000) does not rise above 2 µg/g creat.
- Plants should take actions as described in the ICdA Guidance when CdB>2µg Cd/L

For Cadmium in urine (CdU), the following observations were made:

Positive elements:

- Effect of reduced exposure as reflected by lower CdB values translates in a reduction of CdU values in most plants (but further efforts are needed at some workplaces)
- The group with high cadmium burden (>5µg Cd/g creat.) is disappearing from the workplace (retirement, removed from exposure, lower exposure).
- Some plants should remind the medical doctor that removal from a workplace with cadmium exposure is highly recommended for workers with CdU > 5µg/g creat.
- Historic Cadmium burden of some workers is too high to bring them below 2µg Cd/g creat. by 2027, but this number is steadily going down due to retirement.

Conclusions on CdU:

- 18 workers (0,4%) with CdU > 5 µg Cd/g creat., including 6 workers with CdU > 10µg Cd/g creat., are not removed from exposure. For plants that have such workers, please check assessment procedures with doctor and consider changing the workplace for these workers or report correctly to ICdA when workers were removed to a workplace with low or no exposure.
- A suggestion was made to add a new subgroup: workers hired after 2010 to have a better understanding if exposure is under now control. If this is the case, these more recently hired workers should not go up in CdU or CdB values. Or alternatively to consider the group of workers over the past 10 years. The latter approach is probably less evident to assess because it will reduce the time to accumulate cadmium. Considering the status of the CMRD revision, this additional segmentation will not allow to provide us timely with information that can influence the process unless we would do a retroactive exercise, e.g. extracting 2018-2021 numbers. This would require an extra effort from all involved occupational doctors.

A general remark on biomonitoring is that all H&S managers should share the ICdA Guidance with their occupational doctor. Do not forget to inform them when the Guidance is updated or when the doctor is replaced.

5 REACH development: will there be changes to the authorization and restriction process (Howard Winbow - ICdA) (cfr. Annex 2, slides 48-53)

Discussions are ongoing to decide if the current process of authorisations and restrictions needs to be revised. Awareness is growing that the current authorisation process is not able to digest large amounts of authorisation request. The current chromium and lead authorisation dossiers have made this clear. Several possibilities have been discussed and narrowed down to 3 options:

1. Keep authorisation but introduce clarifications and simplifications
2. Merge authorisation and restrictions
3. Remove the Authorisation title from REACH.

Forecast for cadmium authorisation:

Cadmium was not proposed in the last prioritization. Considering the length of the legislative process, any changes that might be introduced to the Authorisation process will not occur before 2025. As there is already an OEL in place for cadmium and cadmium uses are already much restricted, we consider it likely that cadmium will NOT be considered for authorisation under the current legislative regime.

6 Endocrine disruptors (Heidi Northshield, IZA) (cfr. Annex 2, slides 54-57)

A follow-up was given on the topic of endocrine disruptors (ED) and potential impact for cadmium and cadmium compounds.

The aim of Green Deal/CSS is to include EDs to minimize exposure and manage risks by harmonizing legislative frameworks. This will be done via:

- Additional CLP hazard class
- Additional REACH information requirements

Three criteria for ED identification have been set forward that simultaneously need to be fulfilled:

1. evidence of endocrine activity. ..... some in vitro, i.p. evidence for Cd
2. evidence of an adverse effect. ..... some mainly in vitro, i.p. evidence
3. endocrine Mode of Action* ..... difficult to determine!

*=biologically plausible link between ED activity and adverse effect

Criteria 3 seems to be a difficult one for many substances, including cadmium. This might delay any future conclusion on cadmium.

Potential consequences: Mentioning on MSDS, additional labelling, substance added to SVHC list (not new for Cd & Cd compounds)

Many questions remain and require additional refinement.

7 Positive Communication (Mik Gilles, ICdA) (cfr. Annex 2, slides 58-61)

The completely renewed website is online since March 2022. The focus is now on positive aspects of cadmium in the different applications and the well-controlled exposure risk.

Since the launch of the site, we have on average between 150 and 200 unique daily visitors, mainly from EU and North America. For the EU we notice important traffic from Belgium which could indicate that EU officials in Brussels have found us. We will take the opportunity to disseminate our positions through publication on the website. We recently added the position paper we shared with the WPC.

Patrick de Metz congratulated the team with this achievement but suggested to replace the airplane on the landing page of the website with a train, driving through a landscape with some windmills or solar parks to create a stronger atmosphere of sustainability. Patrick will look in the SAFT image database for a suitable picture.

8 Other business

With no other business to report, the call was closed at 12:30h.

International Cadmium Association

ANNEX 1

Attendance list

Meeting	**ICdA 20th H&S Committee**
Date	**22 June 2022, from 10h00 am to 12h30 pm**
Place	**By video call**

Names	Company	Names	Company
Jeffrey Dossous	5Nplus	Patrick de Metz	Saft
Guillaume Parent Pépin	5Nplus	Jean-Guillaume Leroux	SNAM
Marielle Nicollet	Amphenol Socapex FR	Cornelius Fink	SNAM
Erica Moore	Amphenol UK	Mark Booth	Venator
Leo Bukovski	Bochemie		
Riina Luomansuu	Boliden Kokkola		
Patrick Kicq	Flaurea Chemie		
Jörg Seidel	GAZ GmbH		
Mario Heinecke	Glencore NZH		
Francesco Napoli	Glencore PV	**STAFF**	
Ian Shackley	JamesMBrown	Noömi Lombaert	ICdA
Peter Hermans	Lamifil	Mik Gilles	ICdA
Inge Maes	Aurubis-Beerse	Howard Winbow	IZA
Vanessa Germonpré	Aurubis-Beerse	Heidi Northshield	IZA
Louis Nel	Nyrstar		

International Cadmium Association

ANNEX 2

Slides presented at the ICdA 20th H&S Committee

International Cadmium Association

20th Health and Safety committee meeting

Webinar, June 22nd, 2022
10:00 -12:30

1

Agenda

10.00 Welcome, statement of Compliance, approval of the 2021 minutes
10.10 Revision of the occupational exposure limit values for cadmium: status update
Feedback from the Working Party on Chemicals meeting (*Noömi Lombaert*)
10.35 Annual reporting on cadmium occupational monitoring OCdAir and OCdBio (*Mik Gilles*)
11.05 Conclusions and recommendations. (*Patrick de Metz*)
11.20 Short coffee break
11.25 Update on a potential revision of the authorisation and restriction process. (*Howard Winbow*)
12.00 An update on endocrine disruptors (*Heidi Northshield*)
12.10 Positive communication on cadmium (*Mik Gilles*)
Website renewal
Application sheets
12:25 A.o.b.
12:30 End of meeting

2

STATEMENT OF COMPLIANCE

- The purpose of the meeting is to address, under the applicable confidentiality rules, issues concerning Cadmium and Cadmium compounds producers and importers and more particularly their obligations under the several regulations.
- The minutes kept during the meeting will have to reflect all significant matters discussed during the meeting.
- No discussions will be held, formally or informally, during specified meeting times or otherwise, involving, directly or indirectly, express or implicit agreements or understandings related to: (a) any company's price; (b) any company's terms or conditions of sale; (c) any company's production or sales levels; (d) any company's wages or salaries; (e) the division or allocation of customers or geographic markets; or (f) customer or suppliers boycotts; or (g) any disclosure of information which may affect applicable rules on Competition Law.
- The International Cadmium Association (ICdA), as a group will make no recommendations of any kind and will not try to reach any agreements or understandings with respect to an individual company's prices, terms or conditions of sale, production or sales levels, wages, salaries, customers or suppliers.

3

Revision of the occupational exposure limit values

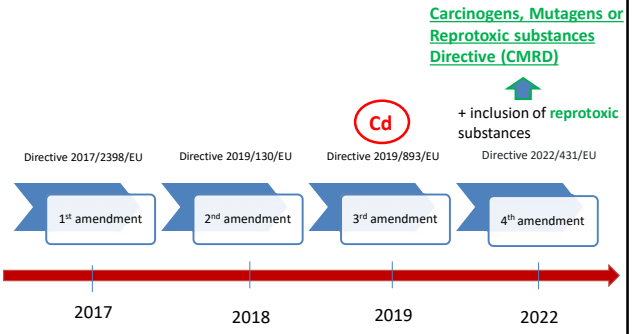
Cadmium and its Carcinogenic Compounds

Status update
Feedback from WPC meeting

1

4

Revision OELs under the Carcinogens and Mutagens Directive (CMD) (Directive 2004/37/EC)



5

Revision OELs under the Carcinogens, Mutagens or Reprotoxic Directive (CMRD) (Directive 2004/37/EC)

- With additional insertion of *Annex IIIa*: BIOLOGICAL LIMIT VALUES AND HEALTH SURVEILLANCE MEASURES
- 4th Amendment Directive 2022/431/EU:

'ANNEX IIIa

BIOLOGICAL LIMIT VALUES AND HEALTH SURVEILLANCE MEASURES

(Article 16(4))

1. Lead and its ionic compounds

1.1. Biological monitoring must include measuring the blood-lead level (PbB) using absorption spectrometry or a method giving equivalent results. The binding biological limit value is:

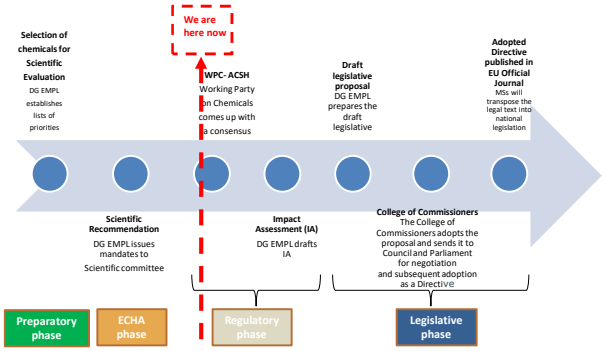
70 µg Pb/100 ml blood

1.2. Medical surveillance is carried out if exposure to a concentration of lead in air is greater than 0.075 mg/m³, calculated as a time-weighted average over 40 hours per week, or a blood-lead level greater than 40 µg Pb/100 ml blood is measured in individual workers.'

ICdA will follow closely the parallel debates in WPC, COM on Pb
We might be benefiting from the Pb BLV transition into CMRD

6

OEL process



7

RAC Final opinion- March 18th, 2021
Derived limit values

OEL as 8 hour TWA (8h-TWA):	0.001 mg cadmium/m^3 (=1 µg cadmium/m^3 (inhalable fraction))
STEL:	--
BLV:	1 µg cadmium/g creatinine
BGV:	--

8

OEL revision process: next steps

The RAC final opinion is sent to the COM to be discussed with the ACSH (Advisory Committee on Safety and Health at work)

WPC will make a proposal to the ACSH. The ACSH will draft an Opinion to the Commission.
Cadmium was on the agenda WPC meeting June 14th

The Commission will do an impact assessment.
The Commission will draft a CMD amendment text for approval by both EP and Council. They can further amend to reach agreement on a final text.

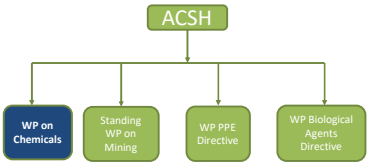
ICdA will continue challenging the proposed limit values with the help of 2 employer representatives being full members in the WPC discussions

9

WPC: Working Party on Chemicals in the workplace

REMINDER

- **General setup**
- The WPC is a sub-group of the tripartite Advisory Committee on Safety and Health (ACSH)
- ACSH (and WPC) advise the European Commission on workplace health and safety



WVMETALLE

10

WPC: How we work

REMINDER

- Tripartite – employers, worker, government; five representatives of each
- Chair, vice-chair and rapporteur shared by the interest groups, rotating every 2 years
- 3 or 4 two-day meetings per year
- Sub-groups to monitor specific studies initiated by the Commission

➢ *lively discussions, but usually we agree on draft opinions going to ACSH for formal adoption (each IG can add their own comments)*

WVMETALLE

11

REMINDER

WPC: the people in Mandate 2021-24

- President : SAARIKOSKI Sirkku (G)
- Vice-President : SKOVGAARD LAURITSEN Jens (E)
- Rapporteur : BARRY Frank (IRL)

- Responsible civil servant: MORRIS Alick (DG EMPL)

GOVERNMENTALS	EMPLOYERS	WORKERS
GALVEZ PEREZ Virginia (ES)	COLOMBO Maurizio (IT)	BARRY Frank (IRL)
DE SAINT-JORES Jeremy (FR)	WIESKE Martin (DE)	MUSU Tony (BE/ETUI)
MARX Romy (DE)	LEVY Patrick (FR)	STREISSLER Christoph (AT)
SAARIKOSKI Sirkku (FI)	MAYA RUBIO Isabel (ES)	VAN VEELEN Wim (NL)
Deputy member	*Deputy member*	*Deputy Member*
VAN DER AKER Ilse (NL)	SKOVGAARD LAURITSEN Jens (DK)	VAN EYCK Kris (BE)

➢ ***Contacting MS as well as national employers representatives makes sense!***

WVMETALLE

12

Cadmium OELs discussion WPC meeting 14/06

- In CMD amendment, Directive 2019/893/EU:

'No later than 11 July 2022, the Commission shall assess the option of amending this Directive to add provisions on a combination of an airborne occupational exposure limit and a biological limit value for cadmium and its inorganic compounds.

➡ Debate is started at the WPC, which implies COM deadline of 11 July 2022 is met

13

Cadmium and its inorganic compounds – CMRD + recent RAC evaluation

Name of agent	EC No (1)	CAS No (2)	Limit values						Notation	Transitional measures
			8 hours (3)			Short-term (4)				
			mg/m³ (5)	ppm (6)	f/ml (7)	mg/m³ (5)	ppm (6)	f/ml (7)		
Cadmium and its inorganic compounds	—	—	0,001 (11)	—	—	—	—	—		Limit value 0,004 mg/m³ (12) until 11 July 2027

(11) Inhalable fraction.
(12) Inhalable fraction. Respirable fraction in those Member States that implement, on the data of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine.

SUMMARY TABLE

The table presents the outcome of the RAC evaluation to derive limit values for cadmium and its inorganic compounds.

Derived Limit Values

OEL as 8 hour TWA (8h-TWA):	0.001 mg cadmium/m³ (=1 µg cadmium/m³ (inhalable fraction))
STEL:	--
BLV:	1 µg cadmium/g creatinine
BGV:	--

Notations

Notations:	--

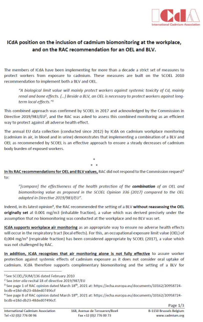
- RAC concluded that ***a combination of an airborne exposure limit value and a biomonitoring-based limit value (BLV) would be more effective in protecting the health of workers than either one of them used alone.***

European Commission

14

Outcome WPC meeting 14/06 (1)

- Martin Wieske summarized ICdA's position:
  - Some days before the WPC meeting, our ICdA position paper was distributed to WPC members
  - During meeting:
    - Recapitulation on the combined approach as was confirmed by SCOEL in 2017 and acknowledged by the Commission in Directive 2019/983/EU
    - Combination of BLV of 2µg Cd/g creatinine + 4µg Cd/m3 resp


ICdA position on the inclusion of cadmium biomonitoring at the workplace, and on the RAC recommendation for an OEL and BLV.

15

Outcome WPC meeting 14/06 (2)

- Reaction in WPC:
  - Indication that some MS are still struggling with BLV implementations and enforcement
  - Government Interest Group members: still in favor of having BLV as an option, in addition to the OEL
  - Workers Interest Group members: in favor of 1µgCd/m3 inhalable as foreseen in CMRD after 2027
  - Finnish president of the WPC: 4µgCd/m3 resp might not be protective (even if combined with BLV)
  - COM:
    - If the values listed within CMRD are to be changed, then an impact assessment would be required

16

Next agreed ICdA Actions

- In preparation of the next WPC Sept 27-28:
  - Elaborate our current ICdA position paper with an **appendix on our ICdA biomonitoring campaign**; **industry todays biomonitoring practice (in many MS)** for 14 years in demonstrating:
    - ICdA has implement with demonstrable success with its Industry Members, the SCOEL recommendation of 2017 which concluded the protective nature of the combination of an OEL = 4µg Cd/m³ (respirable fraction) along with a BLV = 2µg Cd/g creatinine.
    - an effective approach to ensure a steady decreases of cadmium body burden of exposed workers.
  - **Advocacy preparation** for reach out to Member States in order to take away their reservation on the principle of biomonitoring

17

WPC meeting Sept 27-28

- Pb will also be on the agenda – biomonitoring annex CMRD
- We hope to take advantage of this parallel Pb debate for demonstrating the Cd industry experience with biomonitoring
- WPC will only conclude on Cd if a strong position is reached, otherwise further discussion in Spring meeting WPC

18

Cadmium monitoring

Cadmium Occupational Monitoring

2

19

Cadmium Occupational monitoring

20

OBSERVATORIES: Monitoring Cd exposure of workers

- OCdAIR-9: results, analysis, discussion
  - Presentation of reported data from members
  - Conclusions
- OCdBIO-14: results, analysis, conclusions
  - Presentation of reported data from members: CdU, CdB, and post-2000 hires subgroup
  - Conclusions
- Way forward

21

OCdAIR-9

Occupational Cadmium Air-monitoring Observatory

2021 monitoring results

22

OCdAir-9

- Personal air sampling at the workplace
  - Nine years of data collection
  - Consistent and excellent response since 2019

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Plants	12	22	20	16	30	25	31	33	33
SEGs	67	142	131	124	162	165	204	216	211
Workers	994	1548	1369	1278	2249	1857	3499	3662	3607

- Good reporting quality
  - All measurements mentioned respirable or inhalable fraction
  - Correction for Personal Protection Equipment during sampling

23

OCdAir-9

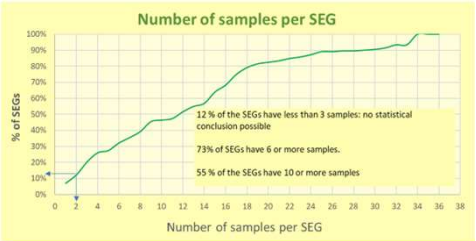
- ICdA guidance
  - Air quality should be under control to assure < 4µg Cd/m³ **respirable** air, always and for all workers
- Amendment of Carcinogens and mutagens directive:
  - In absence of biomonitoring: < 4µg Cd/m³ **inhalable** air.
- RAC draft proposal:
  - Biomonitoring AND < 1µg Cd/m³ **inhalable** air

    =>ICdA will challenge this proposal at the WPC

24

Sampling

- Workplace exposure is not measured permanently for each worker. Therefore, a correct assessment requires a statistical approach to limit the number of samples.
- In SEGs with insufficient samples, no valid statistical calculation can be done and hence, no conclusion can be drawn on compliance.
- Minimum 3 to 10 samples are required! (EN689)
  - Minimum 3 samples when all values are below 10% of OEL.
  - Minimum 10 samples when some values are above 20% of OEL



25

Cd exposure in SEGs : geomean value

- In 3 SEGs the Cd concentration in air is too high!
- In 11% of SEGs, there are insufficient samples to assess the exposure.

Geomean	number of SEGs in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	52	107	150	143	176	193	184
non-conclusive	70	12	4	20	18	18	24
4 <=> 7	1	3	6	2	3	4	2
7 <=> 10	1	4					
> 10			2		1	1	
other non-compliant	7	1					1
total	131	127	162	165	198	216	211

Geomean	% of SEGs in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	40%	84%	93%	87%	89%	89%	87%
non-conclusive	53%	9%	2%	12%	9%	8%	11%
4 <=> 7	1%	2%	4%	1%	2%	2%	1%
7 <=> 10	1%	3%	0%	0%	0%	0%	0%
> 10	0%	0%	1%	0%	1%	0%	0%
other non-compliant	5%	1%	0%	0%	0%	0%	0%
total	100%	100%	100%	100%	100%	100%	100%

26

Workers exposure: geomean value

- For 146 workers (4%), all samples are below 4µg Cd/m³, but insufficient samples to conclude (we ask for at least 3 samples per SEG)
- 24 workers (0,67%) are exposed to a too high Cd concentration
- no workers have an exposure > 7 µg Cd/m³

Geomean	number of workers in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	890	1195	2169	1711	3241	3510	3437
non-conclusive	411	114	28	126	99	101	146
4 <=> 7	29	21	48	20	21	36	15
7 <=> 10	4	33					
> 10			4		18	15	
other non-compliant	35	2					9
total	1369	1365	2249	1857	3379	3662	3607

Geomean	% of workers in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	65%	88%	96%	92%	96%	96%	95%
non-conclusive	30%	8%	1%	7%	3%	3%	4%
4 <=> 7	2%	2%	2%	1%	1%	0,98%	0,42%
7 <=> 10	0%	2%	0%	0%	0%	0,00%	0,00%
> 10	0%	0%	0%	0%	1%	0,41%	0,00%
other non-compliant	3%	0%	0%	0%	0%	0,00%	0,25%
total	100%	100%	100%	100%	100%	100%	100%

27

Cd exposure in SEGs : EN689

- 51% of all SEGs are compliant with EN689
- In 24 SEGs (11%) the Cd concentration in air is too high!
- In 79 SEGs (37%), there are insufficient samples to assess the exposure.
- In 9 SEGs (4%), the Cd concentration can be above 10µg Cd/m³

EN689	number of SEGs in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	12	35	78	74	109	111	108
non-conclusive	102	66	54	60	59	70	79
4 <=> 7		6	10	9	9	9	7
7 <=> 10		3	5	9	7	4	4
> 10	1	6	15	8	9	15	8
other non-compliant	16	11		5	5	7	4
total	131	127	162	165	198	216	211

EN689	% of SEGs in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	9%	28%	48%	45%	55%	51%	51%
non-conclusive	78%	52%	33%	36%	30%	32%	37%
4 <=> 7	0%	5%	6%	5%	5%	4%	3%
7 <=> 10	0%	2%	3%	5%	4%	2%	2%
> 10	1%	5%	9%	5%	5%	7%	4%
other non-compliant	12%	9%	0%	3%	3%	3%	2%
total	100%	100%	100%	100%	100%	100%	100%

28

Workers exposure: EN689

- For 861 workers (24%), all samples are below 4µg/µg m³ but insufficient samples for statistical assessment, or don't have a log normal distribution.
- 253 workers (7%) are exposed to a too high Cd concentration.
- 146 workers (4%) have (occasionally) an exposure > 10 µg Cd /m³.

EN689	number of workers in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
<4 µg Cd/m³ respirable	257	568	1441	852	2393	2476	2439
non-conclusive	904	597	517	521	553	698	734
4 <=> 7		95	158	147	124	65	35
7 <=> 10		22	41	99	67	29	35
> 10	18	104	92	166	184	311	146
other non-compliant	190	65		72	58	83	68
total	1369	1451	2249	1857	3379	3662	3607

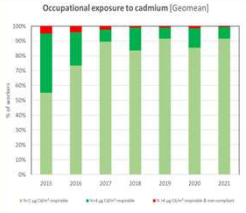
EN689	% of workers in this range						
Range [µg/m³] respirable	2015	2016	2017	2018	2019	2020	2021
%<4 µg Cd/m³ respirable	19%	39%	64%	46%	71%	68%	68%
non-conclusive	66%	41%	23%	28%	16%	19%	24%
4 <=> 7	0%	7%	7%	8%	4%	2%	1%
7 <=> 10	0%	2%	2%	5%	2%	1%	1%
> 10	1%	7%	4%	9%	5%	8%	4%
other non-compliant	14%	4%	0%	4%	2%	2%	1%
total	100%	100%	100%	100%	100%	100%	100%

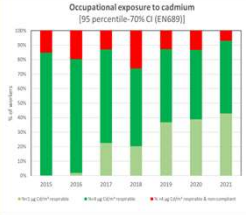
29

Summary on air quality

- When applying the most realistic assessment criterium (geomean), performance is excellent, with only 3 SEGs and 24 workers in exceedance of the 4µg Cd/m³ respirable limit workers value.
- Obviously, more efforts are needed to address the high exposure in these 3 SEGS.
- When assessed according to EN689, 11% of all SEGS and 7% of all workers exceed the limit value.
- More sampling is required in 37% of the SEGs to allow a conclusive assessment of the exposure.

Remark: When, according to the draft RAC opinion, 1µg Cd/m³ inhalable fraction needs to be considered, more than 57% of SEGs will not be compliant.





30

OCdBio

Observatory of Occupational Cadmium Bio-monitoring

31

OCdBio - Occupational Cadmium Bio-monitoring Observatory

- Since 2008, Cd bio-monitoring data is collected in the Cd industry in order to convince ourselves and authorities on:
  - the efficiency of our risk management program
  - the compliance of the current exposure levels with the OELs
- It is interesting for ICdA members to compare their own data with aggregated data from the whole Cd using industry
- A meaningful follow-up requires:
  - A long-term involvement of the companies: currently 14 years follow-up!
  - A strong coverage of EU industrial sites: in 2021 we received reporting from 5161 workers on 36 sites!!!

32

Selected biomarkers of exposure

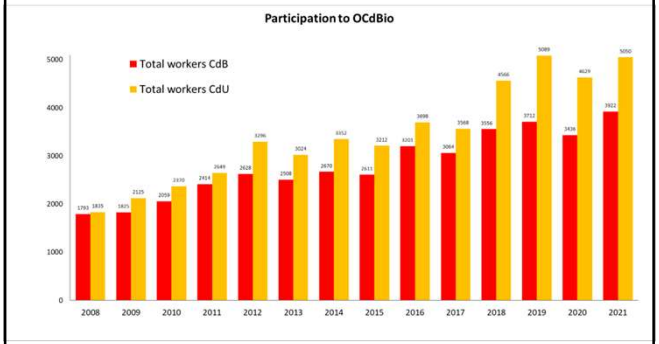
- Cadmium in blood – CdB:
  - indicator of recent (and older) exposure
  - Measurement: Cadmium in whole blood (µg Cd/L)
- Cadmium in urine – CdU:
  - Biomarker of the amount of Cd stored in the body and in particular in the kidney cortex where the first signs of Cd toxicity develop
  - Representative for cumulative cadmium absorption in the body over past 20 years
  - Normalized measurement: Cadmium in urine (µg Cd/g creatinine)
  - Study Prof. Van Maele demonstrated that Cd is a threshold carcinogen for systemic effects with urinary limit value

⇒ CdU is an indicator to demonstrate zero risk of systemic cancers

⇒ Lung cancer is not covered by this indicator!!! => OEL (air) required.

33

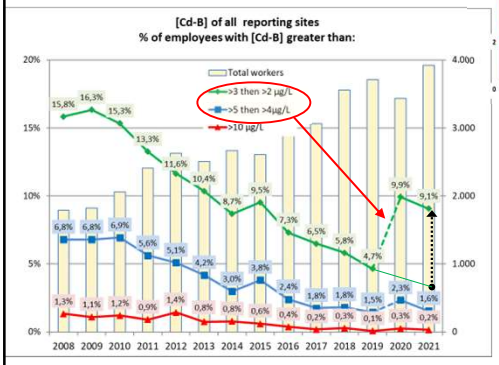
Number of reported workers



34

CdB distribution - all sites in % -

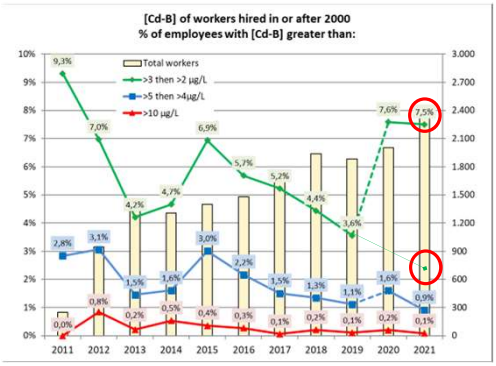
Target values reset in line with ICdA Guidance



from 2020, the green and blue lines represent workers with CdB >2µg Cd/L and with CdB >4µ Cd/L.
Previous target values were 3µg/L and 5 µg/L.
Hence the upwards jump in 2020.
The thin line shows the previous 3µg/L level which continues to drop at the same rate.

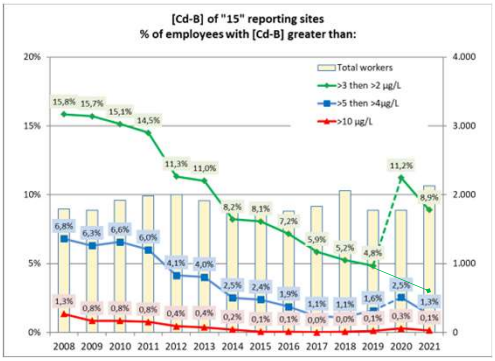
35

CdB distribution workers hired after 2000 - all sites in % -



36

CdB distribution original “15”



37

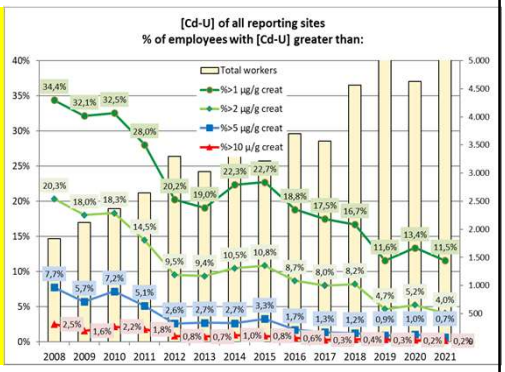
Cd in Blood: conclusion

- ❑ Further progress was made: Exposure of workers was reduced in 2020
- ❑ But we need increase our ambition…
  - ➢ Still too many workers have too high level of exposure to keep (or bring) them below the target of 2µg Cd/g creatinine, which may become a CMD limit.
  - ➢ Comparison with CdU data shows that increased CdB values are often not related to high historic burden => sign of too high recent exposure
- ❑ Future compliance with BLV of 2µg Cd/g creatinine?
  - ➢ We should keep all workers below 4 µg Cd/L in blood
  - ➢ We should strive not to have more then 1% workers above 2 µg Cd/L in blood (max.1% excused because of historic cadmium body burden)
- ❑ Continued efforts are required to reduce exposure and comply with the new upcoming (?) exposures limits.

38

CdU distribution - all sites in % -

- Reduction of cadmium body burden seems to drop again after recommendations to target lower CdB values.
- 4% of workers above proposed BLV (CdU>2 µg/g creat.)
- 11,5% above RAC proposed BLV
- 0,7% above the LOAEL for occ. exp. of 5µg



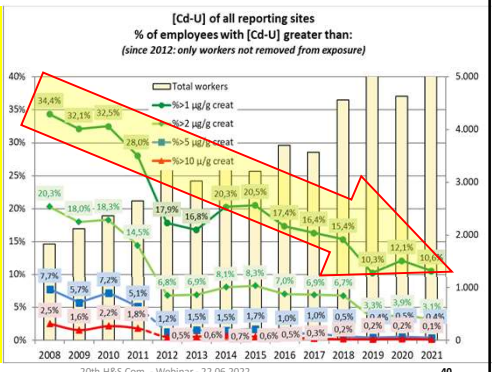
39

CdU distribution - all sites in % - (removed workers excluded)

- 3,2 % of workers above proposed BLV (CdU >2 µg/g creat.)
- 18 workers with CdU >5µg/g creat. are not removed, including 6 above 10 µg/g creat.

Concerned companies should check how they can address this.

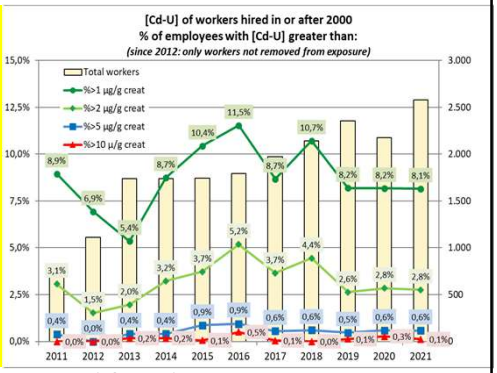
Not addressing this undermines our credibility during advocacy and could result in an OEL only, set at 1µg Cd/m³ inhalable.



40

CdU distribution - all sites in % - workers hired after 2000

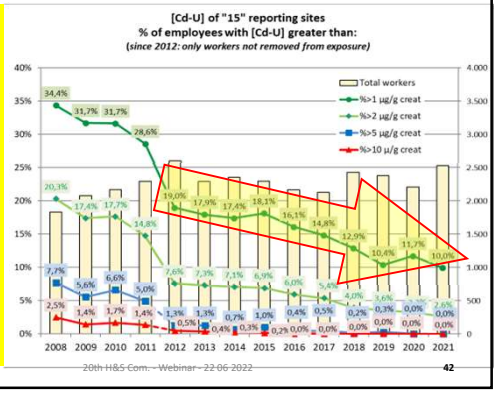
- Situation stabilized but numbers should drop further!
- 2,8% of the “new” hired workers have CdU >2µg Cd
- Not much improvement!
- Also here we see 12 workers above 5µg/g creat. and 3 above 10 µg which are not removed!



41

CdU distribution - original “15” sites in % - (removed workers excluded)

- Decreasing trend continues!
- Excellent response to ICdA Guidance: all workers > 5µg Cd/g creat. are removed



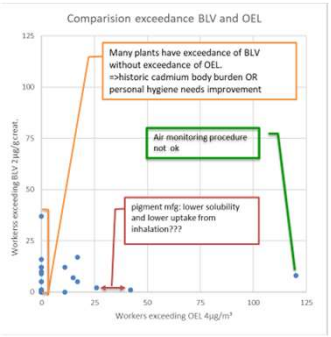
42

Forecast of CdU by 2027

- Positive elements:
  - Effect of reduced exposure as reflected by lower CdB values translates in a reduction of CdU values (but further efforts are needed at some workplaces)
  - Some plants should remind the medical doctor that removal from a workplace with cadmium exposure is highly recommended for workers with CdU > 5µg/g creat.
  - Historic Cadmium body burden of some workers is too high to bring them below 2µg Cd/g creatinine by 2022, but this number of workers with high cadmium body burden is going down due to retirement.
  - If current efforts are continued, it is still possible that there will be no exceedances anymore by 2027 when a BLV of 2µg Cd/g creatinine could become part of the revised Directive.

43

Value of combined air and bio-monitoring when assessing exposure



- When comparing exceedances for CdU and Cd in air, it can be seen that many plants have exceedances in BLV while air values are ok.
- Cause?
  - Historic cadmium body burden? (is there a downward trend in your plant?)
  - Or
  - More emphasis required on personal hygiene? (is there an upward trend in your plant?)

44

Conclusion

- CdB
  - Over the past 14 years, our industry has consistently improved the workplace exposure of its workers…and these efforts should continue
  - Exposure to Cd is continuously going down but exposure levels at some SEGs are likely too high to keep all workers <2µg Cd/g creat.
  - The new CdB action levels now respectively set at 2µg/L and 4µg/L (see Guidance 2018) need to be strictly implemented by the occupational doctor to ensure that CdU of recent workers (hired since 2000) does not rise above 2 µg/g creat.
    - Today, 7,5% of these workers are above a CdB of 2µg/L and 0,9% are above 4µg/l! This is an improvement as compared to 1,6% 4µg/l in the previous year.
- CdU:
  - Last years' decrease of workers in the segment 2-5 µg Cd/g creat. confirmed!
  - 18 workers (0,35%) with CdU> 5 µg Cd/g creat. are not removed from exposure => check assessment procedures with doctor.
  - 204 workers have > 2µg Cd/g creat and 88 of them above 3µg. Today 49 workers are removed from exposure.
    - Should a very stiff compliance with CdU>2 be regulated, this would mean that an additional 155 workers will have to be removed, yielding severe operational disruptions. ICdA advice is to ensure this number continues to go down through strict compliance with existing 2018 Guidance.

45

Comments from the chairman on the ICdA Guidance and exposure risk management

3

46

take 5 minutes for a **Coffee break**

47

Update on REACH

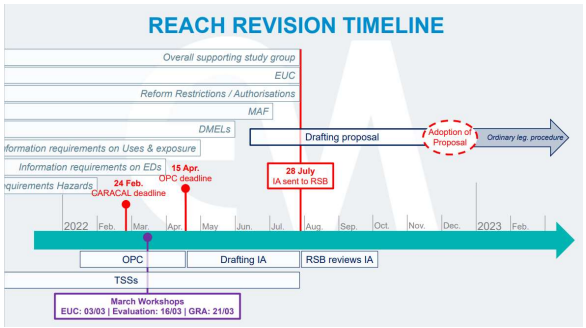
Focus:

Will there be changes to the authorization and restriction process**?**

4

48

Different elements being reviewed for 'REACH 2.0:

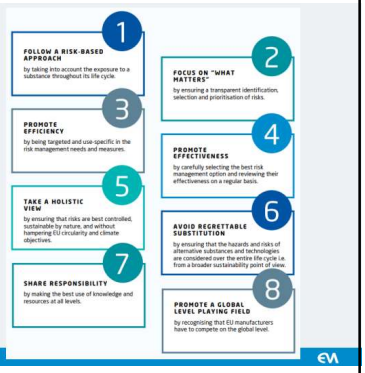


49

Risk Management under REACH Review: Eurometaux Position Paper

CHEMICALS MANAGEMENT
8 guiding principles for better risk management measures

Aimed at promoting:
- Efficiency
- Effectiveness
- Transparency
- Predictability
- A global level playing field
- Coherence with the EU Green Deal objectives of climate neutrality and a circular economy (the so-called "3Cs" approach)
- An approach that promotes shared responsibility



50

Just as a reminder: the suggested reform

For **industrial risks** and some others:

- Several options:
  - Option 1: keep Authorisation as of today with some improvements
  - Option 2: merge Authorisation and Restriction with:
    - EU-wide derogations (by MS or ECHA, as presently the case)
    - + potential for sectorial derogations (by industry)
    - + potential for individual authorisations (by individual companies)
  - Option 3: abandoning Authorisations but keeping CL
- Extend restriction bans to export

For **consumer use** (and later on also for professional uses):

- GRA for new uses (PBT, PMT, vPvB, STOT and neuro/immunotox) with EUC

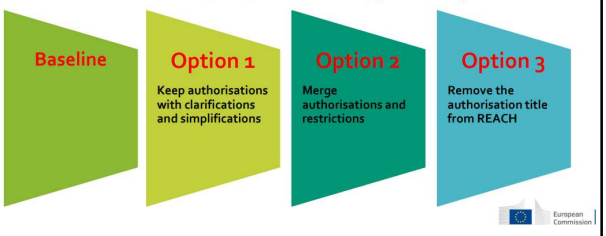
CL = Candidate List
GRA = Generic Risk Assessment
EUC = Essential Use Concept

51

Restriction and Authorisation Review:

REACH Revision – Reform of Authorisation and Restriction Processes

- *The REACH authorisation process is **too burdensome**, slow and controversial*
- *Applies only to manufacturing in the EU – **non-level-playing field with imports***
- *Once an authorisation is given, there is **not enough incentive for substitution***



52

Meanwhile.., Authorisation process continues, and a Rolling Restrictions Roadmap to 2025/7 has been developed

2. The updated Restriction Roadmap

Quite some important changes

- **COMMISSION objectives**:
  - Publishing already the draft list up to 2025-'27…

PRE-ROI on Restrictions (new) or ongoing	Complementing Annex XIV after SSD
PAHs in clay targets, considering other substances then CTP-HT	As2O3, As2O5, As acid : NO restriction
Lead in PVC : ~~other substances used in PVC?~~	Cr2O3: NO restriction at present (2022)
Other substances in infill materials (depending outcome microplastics) (TBD)	CTP and Anthraceen oil: Restrictions probably needed on other uses then Clay Targets (2022 screening report)
CMRs in child care articles (2022)	Specific borates: screening work ~~to start~~ ongoing (2022)
Pb in consumer articles (review no priority)	Cr acids, Sod. Dichromate,… no need for restrictions at present (2022)
Ni in articles (~~adress scope issue~~) (low priority)	
Substances in fertilisers (impurities in phosphate fertilisers) ~~2022~~ (2023)	
Borates (assessment of need pending)	
Skin sensitizers in consumer mixtures (investigation launched) TBD	Groups where CLH or candidate listing with restriction as RM
~~Professional mixtures of PBT or CMR subst.~~	Simple Mn compounds Restr + Auth ? (TBD)
Pb in ammunition and fishing tackling	Simple V compounds (OEL or restriction) (TBD)
Flame retardants: need for RMM for all but focus on brominated '23	

53

Endocrine disruptors

- Relevance for cadmium?

5

54

Emergence of ED focus

Context: Green Deal, CSS - Include ED information requirements in REACH and CLP, to strengthen and harmonize the legislative framework *(EDs already considered under BPR and PPP)*

→ substance/mixture that alters function(s) of the endocrine system(s) and causes adverse health effects in an intact organism or its progeny.

Three criteria for ED identification:

a) evidence of endocrine activity. ✓ (some *in vitro*, i.p. evidence for Cd)

b) evidence of an adverse effect. ✓ (some mainly *in vitro*, i.p. evidence)

c) biologically plausible link between ED activity and adverse effect. ("endocrine MoA") ✗ Difficult to determine

55

Introduction of ED identification requirements

- Revision of CLP hazard criteria: new hazard classes
  - Category 1: Known/presumed EDs (ED HH/ENV 1)
  - Category 2: Suspected EDs (ED HH/ENV 2)

  Adoption delayed - foreseen in Autumn (Q3 2022)

- Revision of REACH: information requirements for the identification of EDs

  Adoption delayed – expected in Q4 2022/early 2023

IZA/ICdA actions:

- Comments submitted with Eurometaux to the REACH Open Public Consultation & to the CLP Impact Assessment
- Comments submitted to the REACH/CLP draft proposals of the CASG-ED expert group (5th & 6th meetings)

56

Impact of ED classification

- Systematic literature review (HH & env)
- Additional ED testing

If classified →

- Mentioned on SDS
- Additional labelling with ED hazard statement
- Substance added to SVHC list.

Level 1	Existing data/in silico modelling
Level 2	In vitro assays (endocrine mechanisms and pathways)
Level 3	In vivo assays (endocrine mechanisms and pathways)
Level 4	In vivo assays (adverse effects on relevant endocrine endpoints)
Level 5	In vivo assays (further testing of relevant endocrine endpoints)

Label elements of endocrine disrupting properties for human health

Classification	Category 1	Category 2
Symbol/pictogram		
Signal Word	Danger	Warning
Hazard Statement	EUH000: May cause endocrine-related adverse effects on human health	EUHXXX: Suspected of causing endocrine-related adverse effects on human health

Label elements of endocrine disrupting properties for the environment

Classification	Category 1	Category 2
Symbol/pictogram		
Signal Word	Danger	Warning
Hazard Statement	EUH000: May cause endocrine-related adverse effects on the environment	EUHXXX: Suspected of causing endocrine-related adverse effects on the environment

- SVHC list - Cd substances already listed: Cd metal, nitrate, hydroxide, carbonate, sulfate, fluoride, chloride, sulfide and oxide
- Many questions remaining, awaiting next/final draft proposals from the CASG-ED sub-group..

57

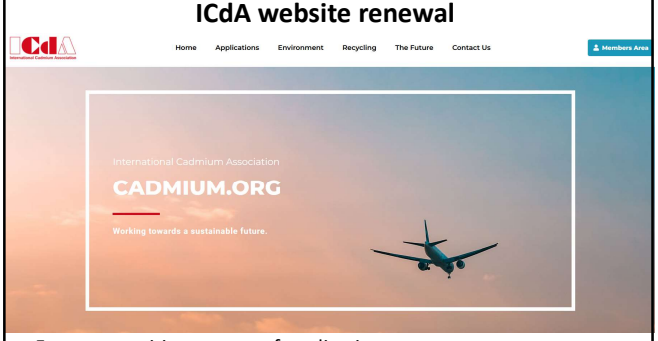
Positive communication on cadmium

- Website renewal
- Application sheets

6

58

ICdA website renewal



- Focus on positive aspects of applications.
- Members pages were copied from old website but with little attention for esthetical redesign: ask your personal login code!

59

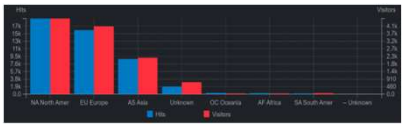
Application sheets

- A two-pager per application
  - Unique properties
  - Benefits to society
  - Safe manufacturing and use
  - End of life recycling
- Downloadable from the website
- Members can make printout leaflets for their business

60

Some statistics on ICdA website visits

- 46.496 hits of which 11.743 unique visitors since launch.
- Interest continues with 150-200 daily visitors.
- 1/3 of all visitors are from Europe.



61

Before closing the meeting…

- A.o.b.
- Closing of the meeting

62