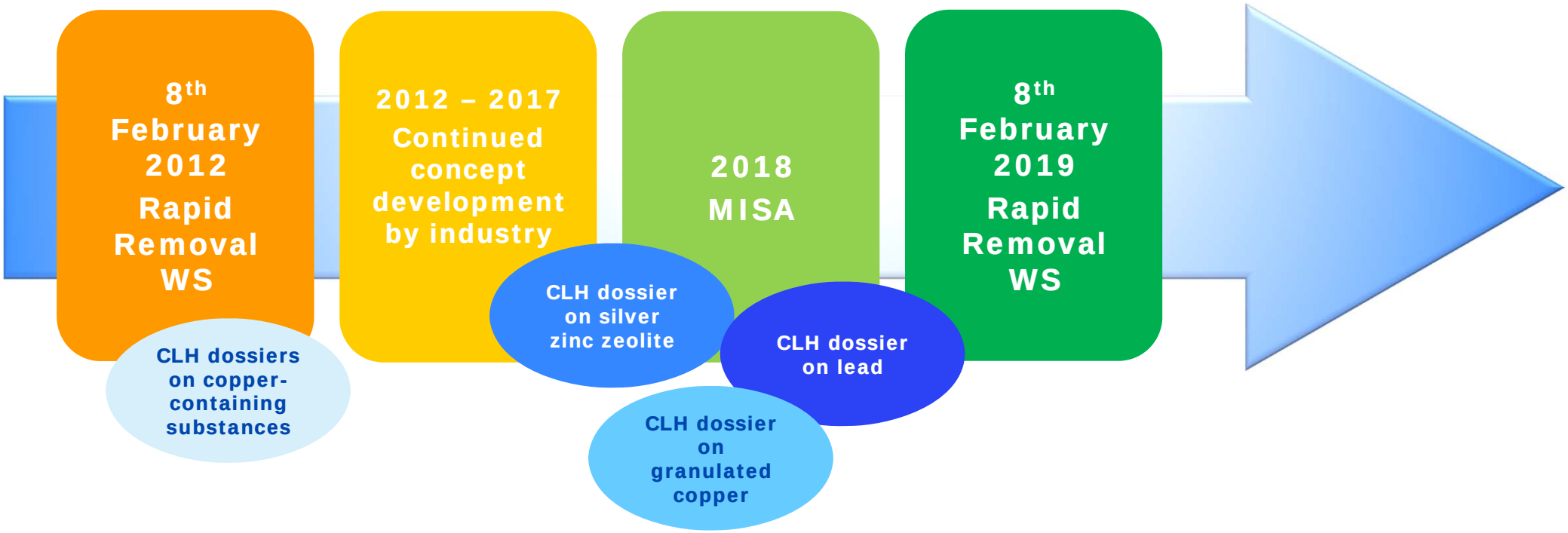
RAPID REMOVAL FROM THE WATER COLUMN - MISA priority

Workshop on progressing the Rapid Removal concept for metals classification

8 February 2019, Helsinki

ECHA

Rapid Removal – from 2012 to 2019



2012 - Rapid Removal WS conclusions


Workshop on the validity of the use of the concept of "rapid removal"

8 February 2012

ECHA Conference Centre
Annankatu 18, Helsinki, Finland

Final Agenda

- No overall consensus on **whether and how the concept should be used** in the environmental hazard classification of metals and metal compounds

  ⇒ further discussions are needed

- Broad agreement is, however, evident on **certain ‚rapid removal' mechanisms** for **certain types** of metals
- An expert group should be established to further discuss the concepts and **relevant information requirements**
- If in future industry wishes to justify the application of the concept of Rapid Removal **for certain types of metals**, they should aim to provide further arguments supported by examples

CLP Guidance on ‚Rapid Removal'

IV.3 Assessment of environmental transformation

Environmental transformation of one species of a metal to another species of the same metal does not constitute 'degradation' as applied to organic compounds and may increase or decrease the availability and bioavailability of the toxic species. In addition naturally occurring geochemical processes can partition metal ions from the water column while also other processes may remove metal ions from the water column (e.g. by precipitation and speciation). Data on water column residence time, the processes involved at the water – sediment interface (i.e. deposition and re-mobilisation) are fairly extensive for some metals. Using the principles and assumptions discussed above in Section IV.1 of this document, it may therefore be possible to incorporate this approach into the classification.

Such assessments are difficult to give guidance for and will normally be addressed on a case-by-case approach. However, the following may be taken into account:

a. Changes in speciation if they are to non-available forms, however, the potential for the reverse change to occur must also be considered;

b. Changes to a metal compound which is considerably less soluble than that of the metal compound being considered.

Some caution is recommended; see Section IV.1 of this document, the 5th and 6th paragraph.

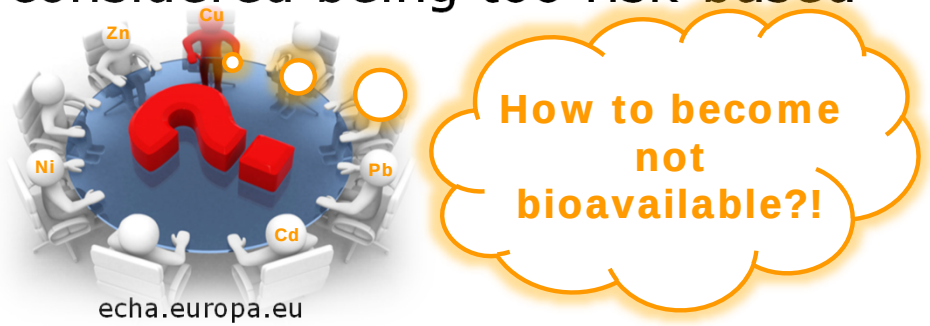
⚠ Comment by ECHA: Please note that in the light of a lack of scientific consensus and continuing discussions on the interpretation of rapid removal from the water column in the context of classification, it has been decided to remove certain parts from the Annex IV for the time being until agreement on the validity of use of the concept of rapid removal for classification purposes has been reached.

Rapid Removal – Discussion basis

- The CLP Guidance allows to incorporate the **assessment of rapid environmental transformation** processes into the classification

  ⇒ provided certain conditions (such as irreversibility) are met

- Agreement to the concept of Rapid Removal based upon **partitioning** followed by **speciation** changes to a non-bioavailable form and **irreversibility** to a (more) soluble form
- **TUWM** not accepted as considered being too risk-based



Rapid Removal in context with CLH dossiers (1)

Coated copper flakes and several copper compounds (December 2014):

- The DS has taken the TUWM considerations as satisfactory description of copper ion dynamics to demonstrate rapid removal of dissolved copper compounds of more than 70% of dissolved copper within 28 days.
  - ⇒ Remobilisation was considered limited in oxic and anoxic conditions.
- RAC disagreed with this and concluded that since the concept of rapid degradation for organic chemicals does not include sequestration by particulate matter or other fate pathways, such as volatility, it seems inappropriate to apply such approaches to metals.
  - ⇒ No convincing case has been made that copper ions will always rapidly speciate to non-available forms, or that this process was demonstrated to be irreversible under all environmental conditions.
  - ⇒ At a general level, RAC considered that decisions about rapid removal could be based on observations from a standardised OECD T/Dp test.

Rapid Removal in context with CLH dossiers (2)

Silver zinc zeolite; SZZ (December 2015):

- The DS considered that there is no evidence of rapid environmental transformation of SZZ, as remobilisation of silver ions cannot be excluded.
- RAC concluded in its opinion that there is not enough evidence of rapid environmental transformation of SZZ and further pointed out that:
  - ⇒ It is not possible to conclude that silver ions would completely speciate to non-available forms.
  - ⇒ Also the potential for the reverse change to occur cannot be ruled out.

Rapid Removal in context with CLH dossiers (3)

Granulated copper (June 2018):

- The DS claimed that no guidance is available to allow the assessment of the information on rapid environmental transformation included in the REACH registration dossier.
  - ⇒ Considerations and conclusion from the previous copper cases were presented in the CLH dossier.
- RAC in its opinion concluded on no rapid environmental transformation and stressed that:
  - ⇒ Future CLH dossiers could take account of all relevant information once an internationally agreed approach to this issue has been reached.

Rapid Removal in context with CLH dossiers (4)

Lead (November 2018):

- The DS concluded on no rapid removal based on TUWM calculations (as reported in the REACH registration dossier) not considered appropriate to demonstrate it.
  - ⇒ The T/Dp testing fully accounts for rapid transformation of soluble forms to insoluble forms. If the transformation is sufficiently rapid then the dissolved fraction will not reach the level of the ERV, which will lead to “no classification”.
  - ⇒ Binding to particles and subsequent sedimentation and binding in sediment is risk assessment. It is not accepted in the assessment of hazards in neither organics nor metals.
  - ⇒ The reasonable (and highly realistic) worst-case scenario is that there is no sedimentation and no sediment (fast running rivers).
- Comments received during PC claimed that guidance on how to apply the concept to inorganics is lacking which hampers a correct assessment.

Questions

- Should the concept be applicable to all or only **certain types of metals** in the overall classification context?
  - ⇒ Under which conditions is rapid removal feasible?
  - ⇒ For which metals does it really apply?

- Is the **current T/Dp** sufficient to address rapid environmental transformation?
  - ⇒ If not, is the T/Dp-E, as proposed, the right way to follow?

Questions

- Are there any other means for **addressing environmental transformation**?

  ⇒ If so, which ones?

- Are we confident that by accepting this concept for metals, we do not **contradict** to the system as applied to organics?

Recommendations for today

- Carefully consider the **applicability** of the concept for classification
- **Discuss openly** - share your views/opinion/ concern/…
- Clear view on the way forward is needed to make real **progress**

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EUROPEAN CHEMICALS AGENCY

More information at

https://echa.europa.eu/-/echa-and-eurometaux-agree-on-framework-for-cooperation

https://www.reach-metals.eu/reach/metals-and-inorganics-sectoral-approach-misa

https://echa.europa.eu/-/workshop-on-the-validity-of-the-use-of-the-rapid-removal-concept

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