Chairman: *Dave Boyd* (Johnson Matthey)

5 May 2011, 12:30 – 6 May 2011, 16:00 CET
Metals Conference Centre
Rue du Duc 100 – 1150 Brussels (BELGIUM)

List of Participants

Sandra Allen	Regulatory Science	United Kingdom
Dave Boyd	Johnson Matthey	United Kingdom
Roland Brasch	Heraeus	Germany
Philip Copestake	BIBRA	United Kingdom
Mark Raffray	Johnson Matthey	United Kingdom
Klaus Rothenbacher	EPMF	Belgium
Mike Shepherd	Vale Europe	United Kingdom
Ed Stutt	WCA	United Kingdom
Ruediger Thiele	Heraeus	Germany
Steven Verberckmoes	Umicore	Belgium
Pete Watts	BIBRA	United Kingdom
Paul Whitehead	WCA	United Kingdom
Roland Winde	Umicore	Germany

Minutes

1. **Welcome and introduction** ***(DB)***
   1.1. Approval of the Agenda
   The agenda (Annex 1) was approved.

   1.2. Approval of the minutes of the last meeting
   The minutes of the last conference call (11 April 2011) were approved.

2. **Enabling Tests**
   2.1. Water solubility tests (PMC)
   The water solubility tests of most substances have been completed but the results of 6 substances have been delayed. The outstanding data will be available by the end of May.
   Action: WCA to check if new water solubility data have any impact on dossier ({e.g., if water sol. > ERV)

   2.2. Bio-accessibility tests
   The potential need for bio accessibility tests was discussed under agenda point 3.3

   2.3. Dustiness tests (PMC)
   The proposed testing scope (13 substances) was agreed. It was agreed not to test Substances with available PSD data, since MMAD and MPPD calculations can be carried out from available PSD data, provided data on tapped density is available.
   Action: PMC to check if samples provided to CANMET have been sieved to remove bigger particles
   Action: PMC to cross-check CANMET PSD data with corresponding proprietary PSD data
   Action: PMC to check if data on tapped density for CANMET substances is available

   2.4. Other:
   In the Annex III report some pH values are missing.
   Action: WCA to check and update report if necessary

3. **ITS**
   3.1. Phys.-chem. part (WCA)
   3.1.1. General points
   - **Is there a need to determine melting point, vapour pressure, etc. of substances in solution?**

These measurements were tentatively proposed in the ITS but it was agreed that this will not provide significant information on the substance since it would essentially determine the melting/boiling point of the solvent, with slight modifications due to the dissolved substance.
Action: WCA to revise ITS accordingly and waive testing where appropriate.

- **Measure density of solutions?**

WCA indicated that separate measurements of density of solutions will not be necessary. It will be sufficient to state if the density is higher or lower than that of the pure solvent. Since this will be the case for all solutions, it was agreed to prepare a waiving statement stating that the solution will be of higher density than the pure solvent (water, in most cases).
Action: WCA to prepare waiver statement for density

- **Test vapour pressure of substances that decompose < 300C?**

According to the letter of the guidance, it is necessary for substances that decompose < 300C to determine the vapour pressure at a temperature 20C below the decomposition temperature. WCA has requested clarification from ECHA if this is really required and how to proceed.
PMC proposed waiving the test since it will not provide any relevant information. PMC suggested using the following wording, based on experience from previous work on silver:
"*Study scientifically unjustified*

Justification: [A] is an inorganic substance that forms a crystal lattice. Upon heating, it melts/decomposes at [X]°C. It is scientifically not plausible that [A] could exist in molecular form in the gas phase due to its solid state structure. Thus, the concept of vapour pressure, i.e. the saturation pressure above a solid or liquid does not apply. [A] is [soluble]/[sparingly soluble] in water and if it dissolves, it dissolves into ions, which cannot evaporate. In consequence, the testing for vapour pressure is waived for [A], since such testing would not provide any meaningful information on the substance, nor information applicable to the assessment of environmental fate or for any further animal or environmental studies"

Action: WCA to consider using the proposed waiver for this endpoint.

- **- Testing strategy for oxidising properties**

Member companies were generally happy with the existing classification and questioned the need for a new, more sophisticated, approach, which would involve significant additional testing. It was appreciated that in some cases the current classification may not be optimal and may have to be confirmed by a test or read across from different substances. It was felt that a more limited approach would be more appropriate, making use of waiving/read across as much as possible. New testing should only be carried out in exceptional cases.
Action: David Boyd to propose revised strategy and circulate to PEG for comments

- Substance identity

1) The actual structure of "Pt, Rh and Pd-nitrate" is likely more complicated than the simple chemical formula suggests. Johnson Matthey has provided a reference on the structure of Pt-nitrate to WCA
Action: WCA to circulate Pt(NO3)2 reference to PEG
Further, proprietary, evidence by Johnson Matthey indicates that this may similarly be the case for the respective Pd and Rh nitrates.
Action: Johnson Matthey to provide a summary of the above evidence to PMC.
Action: PMC to circulate a summary of the Johnson Matthey reference to PEG
Action: PEG to hold a separate conference call to review and discuss the new evidence (ADD Date)

2) Rhodium trichloride (anhydrous) CAS 10049-07-7
According to PEG members this substance is not commercially produced. It should be considered omitting it from the scope.
Action: PMC to confirm with member companies that the substance is not commercially produced.

3.1.2. Substance specific discussions

The data gaps/ITS were reviewed on a substance by substance basis, using the data gap matrix spreadsheet as a basis. The outcome of the discussion is summarized directly in the updated spreadsheet (Annex II); changes are highlighted in yellow.

3.1.3. Summary of read across strategy/proposed new tests

- Flammability/Self ignition

The current read across approach suggests substances in the highest oxidation state as reference for worst case read across. However, metals at the highest oxidation state are unlikely to be flammable.
This concerns the following substances:

- Diammonium hexachloroplatinate
- Diammonium hexachloropalladate
- Dipotassium tetrachloroplatinate
- Disodium tetrachloropalladate
- Dipottasium hexachloropalladate

Action: WCA to revise read across strategy for flammability accordingly.

Metal	Substance on which data is available or testing proposed	Read across	Substances data read-across to
Platinum	Tetraammine platinum hydrogen carbonate	Yes	Tetraammineplatinum dichloride
		Yes	Tetraammineplatinum dinitrate
	Hexachloroplatinic acid	Yes	Dipotassium hexachloroplatinate
		No	Dihydrogen hexahydroxyplatinate
		Yes	Diammonium hexachloroplatinate
		No	Platinate dinitrate
Palladium	Palladium dinitrate	Yes	Dihydrogen tetrachloropalladate
		Yes	Palladium monoxide- hydrate
		Yes	Palladium dihydroxide
	Palladium dichloride	Yes	Dihydrogen tetrachloropalladate
		Yes	Palladium monoxide- hydrate
		Yes	Palladium dinitrate
		Yes	Palladium dihydroxide

Palladium cont'd	Tetraamine palladium hydrogen carbonate	No	Diamminedichloro-palladium
		Yes	Tetraamminepalladium(2+) dichloride
	Dipotassium hexachloro-palladate	Yes	Palladium dioxide (and hydrate)**
		Yes	Diammonium hexachloropalladate***
Rhodium	Rhodium trinitrate	Yes	Triammonium hexachlororhodate **
	Rhodium trinitrate or Triammonium hexachlororhodate	No	Diammonium sodium hexakis(nitrito-N)rhodate

- Additional read across options were discussed in the substance-specific part of the discussions and have been added directly into the data gap spreadsheet.

3.2. Environment part

3.2.1. General points

❖ **Absorption/desorption**

No testing is proposed for this endpoint. WCA proposes a targeted literature search per metal group. This was agreed by the PEG.

❖ **Hydrolysing substances**

Hydrolysing substances will be difficult to test in ecotox tests (all involve aqueous media).
Action: WCA to propose revised testing strategy for hydrolysing substances

❖ **Transformation/Dissolution tests**

Additional TD tests will be needed for the following substances:

- PdO (hydr.)
- Pd(OH)2
- Palladium di(4-oxopent-2-en-2-oate)

3.2.2. Substance specific discussions

The data gaps/ITS were reviewed on a substance by substance basis, using the data gap matrix spreadsheet as a basis. The outcome of the discussion is summarized directly in the updated spreadsheet (Annex II); changes are highlighted in yellow.

Pd
- Dipotassium hexachloropalladate and Diammonium hexachloropalladate: conduct daphnia tests for both the K- and the NH4 derivative. Then evaluate results and decide if read across is appropriate for algae- and, fish tests

3.2.3. Summary of read across strategy/proposed new tests

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3.3. Human Health part

3.3.1. General points

❖ **Testing strategy for skin irritation/corrosion**

This endpoint was seen as key test that will have an impact on a range of other tests (e.g., eye irritation, acute tox., sensitisation, etc). Therefore, it was agreed to prioritise testing for this endpoint and start testing as soon as possible.
A tiered testing strategy is proposed:

- pH testing to identify substances that are irritating/corrosive based on extreme pH. There is no need to further test these substances, unless there are indications that the pH indicates a false positive result
- in-vitro skin irritation/corrosion test. WCA proposed to conduct an EPISKIN test, which is now accepted as a stand-alone test for skin irritation. This was agreed by the PEG.
- if the EPISKIN test is negative, an in-vitro eye irritation/corrosion test will be considered
- etc.

- EPISKIN test: all pH tests have now been completed and therefore the scope can be finalised.
Action: WCA/BIBRA to propose final scope for EPISKIN tests.
- CRO: PMC suggested to request quotations from 3 suitable CROs and decide on the testing laboratory on that basis.
Action: WCA/BIBRA to request quotations from 3 suitable CROs

❖ **Testing strategy for genetic toxicity**

For substances with no data, it was agreed to follow the testing strategy outlined in HERAG, ie, to consider an i vitro gene mutation assay in mammalian cells (mouse lymphoma assay – OECD TG476) and an in vitro cytogenicity study in mammalian cells or in vitro micronucleus study.
In case there are positive results in any of these tests, in vivo mutagenicity studies will need to be considered as a next step. As discussed previously, it was agreed to consult with David Kirkland as an external specialist when needed. This would currently apply for the following substances:
Triammonium hexachlororhodate, Diammonium sodium hexakis(nitrito-N)rhodate, Hexachloroplatinic acid and Platinum dinitrate.

❖ **Use of bioaccessibility testing**

The potential need for bioaccessibility tests was discussed on a substance to substance basis and this is indicated accordingly in the revised spreadsheet (Annex II). Bio accessibility tests were agreed for the following 14 substances:
- Palladium metal, PdO (hydr.), Pd(OH)2, Tetraamminepalladium(2+) dichloride, Palladium di(4-oxopent-2-en-2-oate), Dipotassium hexachloropalladate, Diammonium hexachloropalladate
- Platinum metal, Platinum dichloride, Platinum dioxide, Dipotassium hexachloroplatinate
- Rhodium, Diammonium sodium hexakis(nitrito-N)rhodate
- Ruthenium

CROs
- Previous tests for Ag were carried by KTH in Sweden.
Action: WCA/BIBRA to request quotations from 3 suitable CROs (if at all possible for this endpoint)

- Acute toxicity, second route of exposure

Not all necessary data are available to decide on this endpoint. The second route of exposure will be selected once data from dustiness all to estimate the significance of inhalative exposure. Data from bioavailability testing will be needed to better estimate dermal uptake and also the bioaccessibility in the lung.
A decision on the second route of exposure was postponed until data from dustiness and bioaccessibility testing are available.

- Repeated dose testing/reprotox screen

If possible and appropriate, these two studies will be combined. Similar to the above discussions, the route of exposure will be selected once data from dustiness and bioaccessibility testing are available. The preferred route of exposure was agreed to be oral, but this will need to be confirmed by the above data.

3.3.2. Substance specific discussions

❖ **Palladium**

- PdO (hydr.) : additional bioaccessibiilty test required
- Pd(NO3)2: Need to check if low pH could be a confounding factor for genetic toxicity testing. If so, need to consider waiving based on technical grounds

Action: WCA/BIBRA to check and recommend way forward

- Tetraamminepalladium(2+) dichloride
  - read across from Tetraamminepalladium(2+) hdrogencarbonate suggested for genetic toxicity testing.

  Action: BIBRA to consider above proposed read across

  Action: BIBRA/WCA to add data from Tetraamminepalladium(2+) hdrogencarbonate to the data gap matrix to allow for easier cross reference

  - RDT/repro test: read across not appropriate, suggest to conduct test
- PdO2: waive testing based on (non-)availability of test compound

❖ **Platinum**

- Tetraammineplatinum dichloride: irritation properties are read across to Tetraammineplatinum dinitrate. It was suggested to verify this read across by confirming that the pHs of both substances are in a similar range. Since pH data for Tetraammineplatinum dinitrate are available, the pH of Tetraammineplatinum dichloride should be measured.

Action: PMC to arrange for determination of pH of Tetraammineplatinum dichloride

Action: BIBRA/WCA to add data from Tetraamminepalladium(2+) hdrogencarbonate to the data gap matrix to allow for easier cross reference

- Hexachloroplatinic acid and Platinum dinitrate: genetic toxicity
  - since available data have shown positive results, in vivo mutagenicity studies will need to be considered as a next step. It will need to be discussed if the extreme pH of the substances will have a confounding influence on the tests.

  It was agreed to consult with David Kirkland as an external specialist on these cases.

  Action: WCA/BIBRA to summarize the data situation in a short report

  Action: consult D. Kirkland on next steps
- Platinum, 1,3-diethenyl-1,1,3,3-tetramethyldisiloxane complexes / Karstedt concentrate
  - consider read across mammalian toxicity tests from respective siloxane if possible

  Action: BIBRA/WCA to check if data on siloxane are available for read across.

  - If no data on siloxane is available, then testing is proposed. In that case it was suggested to use siloxane as and additional vehicle control

❖ **Rhodium**

- Carbonyl(pentane-2,4-dionato-O,O')(triphenylphosphine)rhodium 25470-96-6: data on skin sensitisation may be available

Action: BIBRA to check if data is available

- Triammonium hexachlororhodate, and
- Diammonium sodium hexakis(nitrito-N)rhodate

Action BIBRA/WCA: Need to review the RhCl3 in vivo micronucleus study and propose if it needs to be repeated

4. AOB, next meeting and closing remarks

Next steps/planning:

- It was agreed to already start wit the testing programme for irritation

(- did we also agree this for bioaccessibility?)

- PMC will need to update their members on the PGM budget requirements in a meeting in June 2011. Since the repeated dose/reprotox screen will be a very significant budget item, PMC would appreciate having a budget estimate that is as realistic as possible.

Action: WCA/BIBRA to come up with a reasonable worst-case estimate for testing needs and costs by end May 2011