# PMC – PGM Work Group Meeting

14 OCTOBER 2015

# 1. Welcome and introduction

DAVE BOYD

# Welcome and introduction

Confidentiality and Competition Law

Tour de table and apologies

Approval of the Agenda

Approval of the minutes of the last meeting and status of action points

| DO | DON'T |
|---|---|
| **Application of competition law** | |
| Art. 101 and 102 TFEU may be applicable to the conclusion of any preliminary agreement and activities of any preliminary phase. | Don't assume that conflicts with competition law are excluded simply by the fact that the Agreement complies with the provisions of the REACH Regulation. |
| **Consultation in Matters of Competition Law** | |
| Consult an in-house legal expert or the compliance officer of your company or an external lawyer whenever there are uncertainties respecting compliance with competition law.<br>Stop all meetings/discussions which are not in compliance with these Compliance Guidelines until a legal expert has been involved. | Don't assume that these Compliance Guidelines deal with all competition law issues exhaustively. Basically, compliance with Art. 101 and 102 TFEU can be determined only on the basis of market impact in each individual case. These Compliance Guidelines may therefore be regarded only as a means of providing general conduct recommendations. |
| **Activities in any preliminary phase and at any other stage of operation of the Consortium** | |
| Restrict cooperation within the scope of the preliminary phase to the initially defined goals and purposes of the cooperation. | Pursuant to Art. 101 and 102 TFEU, activities which have the object of the effect of preventing, restricting and/or distorting competition are prohibited within the scope of this Agreement, including:<br>- Coming to agreement, including arrangements or collusions, about prices, markets and customers (see Art. 101 paragraph 1 a)-e) TFEU);<br>- Joint boycotting of other companies;<br>- The unjustified unequal treatment of trade partners;<br>- The abusive exploitation of a dominating market position. |
| **Exchange of Confidential Information** | |
| Involve a Trustee for the exchange of Confidential Information. | The exchange of information concerning market behaviour and having the object or the effect of preventing, restricting and/or distorting competition is inadmissible; in particular, this relates to :<br>- Production capacities;<br>- Productions or sales volumes;<br>- Import volumes;<br>- Market shares;<br>- Price policy;<br>- Distribution and marketing terms;<br>- Marketing strategies;<br>- Information regarding the relationship with suppliers. |
| **Documentation on Cooperation** | |
| Keep minutes of all meetings which detail the subject of the meeting.<br>In case of uncertainty, have the contents of the minutes reviewed by an external legal expert prior to sending them to all parties of the Agreement.<br>Stop all meetings which are not in compliance with these Guidelines until a legal expert has been involved. | |

# Approval of the agenda

1. Welcome and introduction
2. Substance identification and sameness of PGMs
3. PGM testing programme
4. Status PNEC/ DNEL derivation
5. Exposure scenarios
6. Occupational exposure
7. Financial update/ Project planning
8. AOB, next meetings/calls and closing remarks

# Actions 25 March 2015 (1)

| Action | Who? | Status |
|---|---|---|
| Provide recent IPA publication to EBRC | D. Boyd | Done |
| Circulate (updated) PGM ID cards to PGM WG | KA | Ongoing |
| Finalise testing programme on Ru compounds | KR | Ongoing |
| Registration dossier for Karstedt concentrate:<br>• Discuss transfer of LR role with the Reconsile Consortium<br>• Start work programme for preparation 10-100 t/a dossier<br>• Assess impact of above on 2015/2016 budget/HR | <br>FC<br>KR<br>FC/KR | Done |
| Assess which PGM materials potentially meet the nanomaterial definition / need characterisation testing and inform the PMC Secretariat accordingly | PGM registrants | Done |
| Compile a confidential list of substances to be tested for nanomaterial characterisation | KR | Done |
| Request quotes from suitable labs for characterisation of nanomaterials, and set up a framework contract with the recommended lab | KR | Done |
| Inform the PMC Management Committee / PMC Assembly and at a later stage SIEF about the changes in PMC's scope (removal of 5 substances + tonnage band changes) and update the PGM indicative list accordingly after approval by MC and Assembly. | FC/KR | Done |
| Develop an updated work plan for the substances with tonnage band / registration deadline changes | FC/KR | Done |
| Review the budget and HR assessment for the tonnage band increases, and discuss options to address the additional resource need with the PMC Mgmt Cttee | FC | Done |
| Decide on how to address additional resource need for the PGM project following tonnage band increases | PMC Assembly | Done |
| Follow up STOT RE 1 classification for Diammonium Hexachloroplatinate, Hexachloroplatinic acid and Dipotassium hexachloroplatinate with registrants | KR | Done |
| Derive Pt PNECs | WCA | Ongoing |
| Derive Ru and Rh PNECs once ecotoxicity testing data are available | WCA | Ongoing |
| Derive DNELs once acute / repeated dose / reprotox testing data are available | bibra | Ongoing |
| Follow up with the corresponding LRs regarding required updates of the CLP notifications | KR | Ongoing |

# Actions 25 March 2015 (2)

| Action | Who? | Status |
|---|---|---|
| Circulate latest list of Pd/Pt uses to PGM WG for review | KR | Done |
| Review list of Pd/Pt uses and send comments/additions to PMC Sec | PGM WG | Done |
| Update the minutes of the 19 June 2013 PGM WG meeting as suggested on slide 40 in Annex 2 | KR | Done |
| Define article service life (incl. 2 examples) and check case-by-case with the companies that reported Pd/Pt catalyst use if an article service life needs to be included | KR / WCA | Done |
| Launch the pilot case on DU exposure assessment with a PGM substance | KR/FC | Ongoing |
| Check the Umicore handbook on PGM chemistry and available plating references for information on speciation for surface treated articles | Umicore / Johnson Matthey | Done |
| Circulate WCA sediment sampling protocol to PGM WG | KR | Done |
| If not participating yet, inform the PMC Sec / WCA of wish to participate in the site-specific monitoring programme and indicate if own sediment sampling can be done based on WCA sampling protocol | PGM WG | Done |
| Contract local consultants for sediment sampling on sites in mainland Europe | WCA | Done |
| Check with lab how long samples are stored / if retrospective analysis is possible | WCA | Done |
| Add PGMs to their routine air monitoring if possible | PGM WG | Done |
| Inform PMC Secretariat if any objections to using the workplace-specific ES approach for Pt substances | PGM WG | Done |
| Clarify outstanding issues with companies regarding the Pt occupational exposure questionnaires | EBRC | Ongoing |
| Follow up IPA dataset | EBRC | Ongoing |
| Prioritise registration batches for the 63 PGM substances | KR/FC | Done |
| Review if additional characterisation is required for PGMs | PGM WG | Ongoing |
| Identify underlying data for Carc. Cat. 2 classification of Hexachloroiridic acid and Rhodium trichloride notified to the CLP inventory (via SIEF / CLP platform) | KR | Ongoing |
| Contact Michel vd Straeten in inform him that PMC would like to start the RMO work now | FC | Done |

# 2. Substance identification and sameness of PGMs

KLAUS ROTHENBACHER

KATRIEN ARIJS

# 2.1 Sameness

## General approach

- PMC collates information and facilitates sameness discussion
- Decision on sameness is responsibility of each registrant

***For approval***

## Practically

- Add spectral information (mainly IR/ Raman + XRD for metals) of reference substance to ID cards
- Should allow registrants to conclude on sameness. In **exceptional cases**, a Sameness Experts meeting can be set up **to support** the work of the companies
- Existing ID cards will be recirculated with spectra added in Q4 2015

# 2.1 Sameness experts meeting (1)

## Background

- Face to face meeting, 29th June 2015, Bxl
- Confirm default registration approach
- Do any substances need to be registered as hydrated forms?
- Substances only stable in solution

## Conclusions

- PMC default approach confirmed
  - 80%-20% rule
  - Register anhydrous forms/ solids
  - Spectral information required
- Exceptions: next slide

# 2.1 Sameness experts meeting (2)

## Exceptions

- RhCl3 and RuCl3 to be registered as hydrated forms
  - Hydrated forms are substantially different from anhydrous forms
  - Anhydrous forms have no commercial relevance
- Consequences (cf. slides agenda point 2.2)
  - Need new CAS# = new SIEF
  - PMC supporting LR/ registrants in practicalities

# 2.1 Sameness experts meeting (3)

To be registered as solutions

- Tetraammineplatinum dinitrate (CAS 20634-12-2)
- Dihydrogen hexahydroxyplatinate (CAS 68133-90-4), compound with 2-aminoethanol (1:2)
- Platinum, 1,3-diethenyl-1,1,3,3-tetramethyldisiloxane complexes / Karstedt concentrate (CAS 68478-92-2)
- Dihydrogen tetrachloropalladate (CAS 16970-55-1)
- Tetraamminepalladium (II) nitrate (CAS 13601-08-6)

Remarks

- Not considered as mixtures under Reach since not stable w/o solvent
- Water/ solvent considered 'impurity'
- **Need to consider water/ solvent (minimum content required for stability) when determining tonnage**!

# 2.2. Changes in Substance ID (1)

| | Rh trichloride | Ru trichloride |
|---|---|---|
| **CAS/ EC no in PMC inventory** | 10049-07-7/ 233-165-4 | 10049-08-8/ 233-167-5 |
| **Available other CAS/ EC no.** | 13569-65-8 (trihydrate)<br>**20765-98-4 (hydrate)** | 13815-94-6 (trihydrate)<br>**14898-67-0 (x-hydrate)** |
| **Proposed new CAS/ EC no.** | 20765-98-4/ *606-630-8 | 14898-67-0 / *604-667-4 |
| **Rationale for change** | Hydrates are distinct substances and should be registered separately. Anhydrous forms are not put on the market | |
| **Status of new CAS/ EC no.** | Pre-registered<br>No EC number, but EC list number provided by ECHA | Pre-registered<br>No EC number, but EC list number provided by ECHA |

# 2.2. Changes in Substance ID (2)

| Old substance name | 'Iridium tetrachloride' | 'Diammonium hexachlororuthenate' |
|---|---|---|
| Old CAS/ EC no | 10025-97-5/ 233-048-8 | 18746-63-9/ 242-552-7 |
| New substance name | Reaction mass of iridium tetrachloride and iridium trichloride' | Tetraammonium decachloro-mu-oxodiruthenate |
| Rationale for change | Preregistered as a monoconstituent substance. Constituents cannot be isolated and separate testing/ registrations are not possible = need to register as multi-const. subst. | Structural analyses (X-ray diffraction) revealed a different structure |
| New CAS/ EC no. | Na/ na | 85392-65-0/ 286-924-7 |
| Status of new CAS/ EC no. | Not pre-registered | Pre-registered |

**'Reaction mass of iridium tetrachloride and iridium trichloride'**

- LR currently conducting additional characterisation work, including ratio IrCl3/IrCl4

# 2.3 ID cards

Ongoing

- ID cards under development for all PGMs. Will include information on
  - Identifiers
  - Molecular/ structural formula
  - Typical composition: based on CoA of reference substance
  - Appearance, physical state, -properties
  - Analytical methods for identification
  - LR & Reach strategy
  - Relevant spectra
- Ir finalised (waiting for spectra), Pd ongoing
- ID cards for all PGMs will be re-circulated (incl. spectra) in Q4 2015

# 2.4. Karstedt Concentrate

## Background

- Meeting PMC-Reconsile 1 July 2015: formal agreement to transfer LR to PMC
- Approved by Reconsile on 7 July 2015
- Cooperation agreement Reconsile/ PMC still under discussion

## Sameness

- Agreed on sameness requirements (standard requirements + C13- and Pt195-NMR) with Reconsile
- Analytical work PMC members now completed (at SGS and U. of Bristol)
- Next steps
  - Update SID cards with spectra and circulate to Reconsile

# 2.5 PGM nano forms (1)

EC recommendation on nano definition (2011):

≥ 50% of particles 1-100 nm

OR

Surface area > 60 $m^2$

N.B.:

- Number based = very small mass % of nanoparticles can make a material fall into the nano range!
- Covers also non-intentionally manufactured particles

# 2.5 PGM nano forms (2)

## Background

- Two questionnaires circulated (Sept. 2014/ Feb. 2015), but insufficient feedback received
- Agreed at March PGM WG mtg to conduct coordinated effort to generate data
  - Coordinated by PMC
  - Analyses at Quantachrome
  - Timing: urgent

# 2.5 PGM nano forms (3)

## Methods used

- Formulation development for preparation of suspensions + Fractionation of particles < 200 nm
- Surface area via BET
- Zeta Potenial (electroacoustic)
- Particle based measurements via Dynamic Light Scattering
- Volume based PSD via Static Light Scattering
- SEM

# 2.5 PGM nano forms (4)

Results

- Tests at Quantachrome completed
  - 19 Grades tested
  - 1 Grade considered nanomaterial (Rh)
  - 12 Grades non nanomaterials
  - 6 Grades: report not available (need permission for member company)
- Two members tested in-house
  - Company 1: no nanomaterials
  - Company 2: measurements ongoing, no interpretation possible yet

Impact on ITS: agenda point 3.5

Note: decision on nanomaterials is responsibility of each registrant (cf. sameness slides)

# 2.6 Final Inventory/ Lead Registrants

| Name of the substance | Identification numbers: CAS | Highest tonnage band to be registered* | Registration submission deadline** | Volunteer Lead Registrant | Nano form | Classification |
|---|---|---|---|---|---|---|
| Palladium | 7440-05-3 | 10-100 t/a | 2018 | Umicore NV/SA | Yes | None |
| Palladium dichloride | 7647-10-1 | 10-100 t/a | 2018 | tba | No | Skin Sens 1A (H317)<br>Eye Dam 1 (H318)<br>Met. Corr. 1 (H290) |
| Dihydrogen tetrachloropalladate(2-) (in solution) | 16970-55-1 | 10-100 t/a | 2018 | Heraeus | No | Acute Tox. 4 (H302) (oral)<br>Skin Corr. 1A (H314)<br>Skin Sens 1A (H317)<br>Eye Dam. 1 (H318)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Met. Corr. 1 (H290)<br>Acute M-factor 10, Chronic M-factor 10 |
| Diamminedichloropalladium | 14323-43-4 | 10-100 t/a | 2018 | Heraeus | No | Acute Tox. 4 (H302) (oral)<br>Eye Dam 1 (H318)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Acute M-factor 100, Chronic M-factor 100 |
| Dichlorobis(triphenylphosphine)palladium | 13965-03-2 | 1-10 t/a | 2018 | Heraeus | No | Aquatic Chronic 4 (H413) |
| Palladium (II) di(4-oxopent-2-en-2-oate) | 14024-61-4 | 10-100 t/a | 2018 | Heraeus | No | Flam. Solid 1 (H228)<br>Self heat. 1 (H251)<br>Skin Sens 1A (H317)<br>Acute tox. 4 (H302) (oral)<br>Eye Dam. 1 (H318)<br>Aquatic Chronic 4 (H413)<br>Recommended based on acute Daphnia result (Fraunh. 2014) + read across:<br>Aquatic acute 1 (H400)<br>Aquatic chronic 1 (H410)<br>M factor acute 10<br>M factor chronic 10 |
| Palladium(II) acetate | 3375-31-3 | 1-10 t/a | 2018 | Heraeus | No | Eye Dam. 1 (H318)<br>Aquatic Chronic 4 (H413) |
| Palladium monoxide | 1314-08-5 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | None |
| Tetraamminepalladium (II) nitrate | 13601-08-6 | 1-10 t/a | 2018 | Johnson Matthey | No | Self-reactive Type A (H240)<br>Acute Tox. 4 (H302) (oral)<br>Skin Sens 1A (H317)<br>Eye Dam. 2 (H319)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>EUH044: Risk of explosion if heated under confinement***<br>Acute M-factor 10, Chronic M-factor 10 |

| Name of the substance | Identification numbers CAS | Highest tonnage band to be registered* | Registration submission deadline** | Volunteer Lead Registrant | Nano form | Classification |
|---|---|---|---|---|---|---|
| Tetraamminepalladium(2+) dichloride | 13815-17-3 | 10-100 t/a | 2018 | Umicore | No | Acute Tox. 4 (oral) (H302)<br>Skin Sens 1A (H317)<br>Eye Dam. 2 (H319)<br>Aquatic acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Met. Corr.1 (H290)<br>Acute M-factor 10, Chronic M-factor 10 |
| Tetraamminepalladium(2+) dihydroxide | 68413-68-3 | 1-10 t/a | 2018 | Heraeus | No | Acute Tox. 4 (H302) (oral)<br>Skin Sens 1A (H317)<br>Eye Dam. 2 (H319)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Acute M-factor 10, Chronic M-factor 10 |
| Tetrakis(triphenylphosphine)palladium | 14221-01-3 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | Aquatic Chronic 4 (H413) |
| Palladium sulphate | 13566-03-5 | 1-10 t/a | 2018 | Heraeus | No | Acute Tox. 4 (H302) (oral)<br>Eye Dam. 1 (H318)<br>Met. Corr. 1 (H290)<br>Skin Corr. 1B |
| Tetraamminepalladium(2+) diacetate | 61495-96-3 | 10-100 t/a | 2018 | Umicore AG&Co.KG | No | Acute Tox. 4 (H302) (oral)<br>Skin Sens 1A (H317)<br>Eye Dam. 2 (H319)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Acute M-factor 10, Chronic M-factor 10 |
| Disodium tetrachloropalladate | 13820-53-6 | 10-100 t/a | 2018 | Chimet | No | Acute Tox. 4 (H302) (oral)<br>Eye Dam. 2 (H319)<br>Met. Corr. 1 (H290) |
| Palladium dinitrate (in solution) | 10102-05-3 | 10-100 t/a | 2018 | Heraeus | No | Acute Tox. 4 (H302) (oral)<br>Eye Dam. 1 (H318)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Met. Corr. 1 (H290)<br>Acute M-factor 10, Chronic M-factor 10<br>Skin Corr. 1B (H314) |
| Palladium dihydroxide | 12135-22-7 | 10-100 t/a | 2018 | Umicore AG&Co.KG | No | None |
| Diammonium hexachloropalladate | 19168-23-1 | 10-100 t/a | 2018 | Johnson Matthey | No | Acute Tox. 4 (H302) (oral)<br>Skin Irrit. 2 (H315)<br>Eye Dam. 1 (H318)<br>Skin Sensitiser Cat. 1B (H317)<br>Aquatic acute 1 (H400)<br>Aquatic chronic 1 (H410)<br>Acute M factor 10, Chronic M factor 10 |
| Dipotassium hexachloropalladate | 16919-73-6 | 10-100 t/a | 2018 | C. Hafner | No | Acute Tox. 4 (H302)<br>Skin Irrit. 2 (H315)<br>Eye Dam. 1 (H318)<br>Skin Sensitiser Cat. 1B (H317)<br>Aquatic acute 1 (H400)<br>Aquatic chronic 1 (H410)<br>Acute M factor 10, Chronic M factor 10 |

| Name of the substance | Identification numbers<br>CAS | Highest tonnage band to be registered * | Registration submission deadline** | Volunteer Lead Registrant | Nano form | Classification |
|---|---|---|---|---|---|---|
| Platinum | 7440-06-4 | 10-100 t/a | 2018 | Vale | Yes | None |
| Hexachloroplatinic acid | 16941-12-1 | 10-100 t/a | 2018 | Johnson Matthey | No | Acute tox. 2 (H300) (oral)***<br>Skin corr. 1B (H314)<br>Skin sens. 1B (H317)<br>Eye dam. 1 (H318)<br>Resp. Sens. 1A (H334)<br>STOT RE1<br>Resp. Sens. 1 (Annex VI)<br>Aquatic acute 1 (H400)<br>Aquatic chronic 1 (H410)<br>Met. Corr. 1 (H290)<br>Acute M-factor 10, Chronic M-factor 10 |
| Tetraammineplatinum dichloride | 13933-32-9 | 1-10 t/a | 2018 | Johnson Matthey | No | Skin Irrit. 2 (H315)<br>Eye Dam. 2 (H319)<br>Met. Corr. 1 (H290)<br>Aquatic chronic 3 (H412) |
| Tetraammineplatinum dinitrate | 20634-12-2 | 10-100 t/a | 2018 | Umicore | No | Self-reactive Type A (H240)<br>EUH001: Explosive when dry***<br>EUH044: Risk of explosion if heated under confinement***<br>Aquatic chronic 3 (H412) |
| Diammineplatinum (II) nitrite | 14286-02-3 | 1-10 t/a | 2018 | Heraeus | No | Eye Dam. 1 (H318)<br>EUH001: Explosive when dry*** |
| Dipotassium tetrachloroplatinate | 10025-99-7 | 1-10 t/a | 2018 | Heraeus | No | Acute tox. 3 (H301) (oral)<br>Skin Irrit. 2 (H315)<br>Skin sens. 1B (H317)<br>Eye dam. 1 (H318)<br>Resp. Sens. 1A (H334)<br>Resp. Sens. 1 (Annex VI)<br>Met. Corr. 1 (H290) |
| Platinum dioxide | 1314-15-4 | 1-10 t/a | 2018 | Umicore | No | Oxid. Solid 1 (H272) |
| Dihydrogen hexahydroxyplatinate, compound with 2-aminoethanol (1:2) (in solution) | 68133-90-4 | 10-100 t/a | 2018 | BASF | No | Eye Irrit. 2 (H319) |

| Name of the substance | Identification numbers<br>CAS | Highest tonnage band to be registered * | Registration submission deadline** | Volunteer Lead Registrant | Nano form | Classification |
|---|---|---|---|---|---|---|
| Dipotassium hexachloroplatinate | 16921-30-5 | 10-100 t/a | 2018 | Heraeus | No | Acute tox. 3 (H301) (oral)<br>Skin sens. 1B (H317)<br>Eye dam. 1 (H318)<br>Resp. Sens. 1A (H334)<br>STOT RE1<br>Resp. Sens. 1 (Annex VI)<br>Met. Corr. 1 (H290)<br>Aquatic acute 1 (H400)<br>Aquatic chronic 1 (H410)<br>Acute M-factor 10, Chronic M-factor 10 |
| Platinum dinitrate | 18496-40-7 | 10-100 t/a | 2018 | Heraeus | No | Oxid. Liq 3 (H272)<br>Skin Corr. 1A (H314)<br>Eye dam. 1 (H318)<br>Met. Corr. 1 (H290) |
| Platinum, 1,3-diethenyl-1,1,3,3-tetramethyldisiloxane complexes / Karstedt concentrate (in solution) | 68478-92-2 | 10-100 t/a | 2018 | Heraeus | No | Flam. Liquid 2 (H225)<br>Aquatic Chronic 4 (H413) |
| Diammonium hexachloroplatinate | 16919-58-7 | 10-100 t/a | 2018 | Johnson Matthey | No | Acute tox. 3 (H301) (oral)<br>Skin sens. 1B (H317)<br>Eye dam. 1 (H318)<br>Resp. Sens. 1A (H334)<br>STOT RE1<br>Resp. Sens. 1 (Annex VI)<br>Met. Corr. 1 (H290) |
| Dihydrogen hexahydroxyplatinate | 51850-20-5 | 10-100 t/a | 2018 | Johnson Matthey | No | Eye Irrit. 2 (H319)<br>No other classification currently notified. Testing ongoing. |

| Name of the substance | Identification numbers<br>CAS | Highest tonnage band to be registered* | Registration submission deadline** | Volunteer Lead Registrant | Nano form | Classification |
|---|---|---|---|---|---|---|
| Rhodium | 7440-16-6 | 10-100 t/a | 2018 | Johnson Matthey | Yes | None |
| Carbonyl(pentane-2,4-dionato-O,O')(triphenylphosphine)rhodium | 25470-96-6 | 1-10 t/a | 2018 | Johnson Matthey | No | Aquatic Chronic 4 (H413) |
| Carbonylhydrotris(triphenylphosphine)rhodium | 17185-29-4 | 1-10 t/a | 2018 | Umicore NV/SA | No | Aquatic Chronic 4 (H413) |
| Dicarbonyl(pentane-2,4-dionato-O,O')rhodium | 14874-82-9 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | Acute tox. 3 (H301) (oral)<br>Eye Irrit. 2 (H319)<br>Skin sens. 1 (H317)<br>Aquatic Chronic 3 (H412)<br>Flam. Solid 1 (H228)<br>EUH044: Risk of explosion if heated under confinement*** |
| Rhodium tris(2-ethylhexanoate) | 20845-92-5 | 1-10 t/a | 2018 | Umicore | No | Aquatic Chronic 4 (H413) |
| Rhodium trichloride (hydrate) | 20765-98-4 | 1-10 t/a | 2018 | Heraeus | No | Aquatic Chronic 4 (H413)<br>Acute tox. 4 (H302) (oral)<br>Eye Dam. 1 (H318)<br>Muta. 2 (H341)<br>Met. Corr. 1 (H290) |
| Di-μ-chloro-bis(hapto-1,5-cyclooctadiene)dirhodium(I) | 12092-47-6 | 1-10 t/a | 2018 | Heraeus | No | None |
| Tris(triphenylphosphine) rhodium (I) chloride | 14694-95-2 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | Aquatic Chronic 4 (H413) |
| Rhodium triiodide | 15492-38-3 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | Aquatic Chronic 4 (H413) |
| Dirhodium trisulphate | 10489-46-0 | 1-10 t/a | 2018 | Umicore | No | Eye Dam. 1 (H318)<br>Skin Corr. 1B (H314)<br>Met. Corr. 1 (H290) |
| Dirhodium trioxide | 12036-35-0 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | None |
| Rhodium (III) acetate | 42204-14-8 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | Eye Dam. 2 (H319) |
| Rhodium trinitrate (in solution) | 10139-58-9 | 1-10 t/a | 2018 | Johnson Matthey | No | Oxid. Solid 1 (H272)<br>Met. Corr. 1 (H290)<br>Acute tox. 4 (H302) (oral)<br>Eye Dam. 1 (H318)<br>Skin Corr. 1B (H314)<br>Skin sens. 1A (H317)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Acute M-factor 1, Chronic M-factor 1 |
| Rhodium trihydroxide (solid only) | 21656-02-0 | 1-10 t/a | 2018 | Heraeus | No | Aquatic Chronic 4 (H413) |
| Triammonium hexachlororhodate (solid only) | 15336-18-2 | 1-10 t/a | 2018 | Vale | No | Eye Dam. 1 (H318) |
| Diammonium sodium hexakis(nitrito-N)rhodate (solid only) | 64164-17-6 | 10-100 t/a | 2018 | Vale | No | Oxid. Solid 3 (H272)<br>Self heat. Cat. 1 (H251) |

| Name of the substance | Identification numbers CAS | Highest tonnage band to be registered* | Registration submission deadline ** | Volunteer Lead Registrant | Nano form | Classification |
|---|---|---|---|---|---|---|
| Ruthenium | 7440-18-8 | 10-100 t/a | 2018 | Heraeus | Yes | None |
| Ruthenium trichloride (hydrate) | 14898-67-0 | 10-100 t/a | 2018 | Heraeus | No | Aquatic Chronic 4 (H413)<br>Acute tox. 4 (H302) (oral)<br>Eye Dam. 1 (H318)<br>Aquatic Chronic 3 (H412)<br>Met. Corr. 1 (H290)<br>Skin Corr. 1B (H314) |
| Ruthenium (IV) oxide | 12036-10-1 | 1-10 t/a | 2018 | Heraeus | No | Oxid. Solid 2 (H271) |
| Tris(nitrato-O)nitrosylruthenium | 34513-98-9 | 1-10 t/a | 2018 | Umicore AG&Co.KG | No | Oxid. Solid 1 (H272)<br>Eye Dam. 1 (H318)<br>Met. Corr. 1 (H290)<br>Skin Corr. 1B (H314) |
| Hexakis[mu-(acetato-O:O')]-µ3-oxo-triangulo-triruthenium acetate / Ruthenium acetate | 55466-76-7 | 1-10 t/a | 2018 | Johnson Matthey | No | Eye Dam. 1 (H318)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)<br>Acute M-factor 1<br>Chronic M-factor 1 |
| Tetraammonium decachloro-mu-oxodiruthenate(4-) | 85392-65-0 | 10-100 t/a | 2018 | Heraeus | No | None |
| Potassium tetraoxoruthenate | 31111-21-4 | 1-10 t/a | 2018 | Umicore NV/SA | No | None |
| Ruthenium trihydroxide | 12135-42-1 | 1-10 t/a | 2018 | Umicore NV/SA | No | Aquatic Chronic 4 (H413) |

| Name of the substance | Identification numbers CAS | Highest tonnage band* | Registration submission deadline** | Volunteer Lead Registrant | Nano form | Classification to be notified in 2015 |
|---|---|---|---|---|---|---|
| Iridium | 7439-88-5 | 1-10 t/a | 2018 | Johnson Matthey | Yes | None |
| Iridium trichloride | 10025-83-9 | 1-10 t/a | 2018 | Heraeus | No | Skin Corr. 1A (H314)<br>Eye Dam. 1 (H318)<br>Met. Corr. 1 (H290) |
| Reaction mass of Iridium tetrachloride and Iridium trichloride | tba | 1-10 t/a | 2019 | Heraeus | No | None |
| Hexachloroiridic acid, Hydrogen hexachloroiridate (IV) | 16941-92-7 | 1-10 t/a | 2018 | Heraeus | No | Acute tox. 4 (H302) (oral)<br>Skin Corr. 1C (H314)<br>Eye Dam. 1 (H318)<br>Met. Corr. 1 (H290) |
| Diammonium hexachloroiridate | 16940-92-4 | 1-10 t/a | 2018 | Johnson Matthey | No | Acute tox. 4 (H302) (oral)<br>Met. Corr. 1 (H290) |

# 3. PGM testing programme

KLAUS ROTHENBACHER

# 3.1 PGM ecotoxicity testing

## WCA

# Ecotoxicity Testing Programme: Progress Oct 2015

| Substance | Tests | Progress | Comments |
|---|---|---|---|
| **Diamminedichlororpalladium (DDP)** | Algae; *Daphnia;* Fish; ASRIT | Completed 2012 | - |
| **Palladium di (4-oxopent-2-en-2-oate) (PdAcAc)** | *Daphnia* | Completed 2014 | - |
| **Dihydrogen hexahydroxyplatinate (HHPA)** | Algae; *Daphnia;* ASRIT | Completed 2014 | - |
| **Diammonium hexachloroplatinate (AHCPt)** | *Daphnia* | Completed 2014 | - |
| **Dihydrogen hexahydroxyplatinate with 2-aminoethanol (HHPA-2AE)** | Algae; *Daphnia;* Fish; ASRIT | Testing not yet commenced | Test substance delivered Sept 2015 |
| **Hexachloroplatinic Acid (HCPA)** | ASRIT | Testing complete (awaiting test report) | - |
| **Tetraammonium decachloro-mu-oxodiruthenate (TERTADO Ru)** | Algae; *Daphnia;* Fish; ASRIT | In progress | Algae/ Fish/ ASRIT – testing complete (awaiting test reports)<br>*Daphnia* – testing in progress |
| **Diammonium sodium hexakis (nitrito-N) rhodate (Rh Nitrite)** | Algae; *Daphnia;* ASRIT | Testing complete (awaiting test report) | **Algae required repeat test – approved by WG Aug 2015** |
| **Rhodium trichloride** | Algae; Fish; ASRIT | Testing not yet commence | Test substance delivered Sept 2015 |

# Ecotoxicity Testing Programme: Karstedt Concentrate

- Quotes initially obtained from Fraunhofer for full base-set testing (+ ASRIT)

- Substance is complex (Pt siloxane) and Pt
- Known to hydrolyse relatively quickly in water at neutral pH (a few hours) & extremely quickly as pH becomes (even slightly) acidic or alkaline (minutes)
- Exact hydrolysis products unknown (or species of Pt produced)

- Hydrolysis testing therefore required prior to ecotox testing

- However, difficult to assess exactly what is required to be analysed in the hydrolysis test, as information on the substance is very sparse

- Therefore, decided to undertake some preliminary testing prior to hydrolysis;
  - Establishment of analytical methods for test item and organic complex (LC or GC-MS)
  - Initial assessment of hydrolysis in buffer / solvent mixtures at pH 7
  - Analysis of test item, organic complex and total Pt

# Recommendations for further ecotox tests

- *Daphnia* and algae results available for diammonium sodium hexakis(nitrito-N)rhodate
- Based on results read across from rhodium trinitrate recommended for fish endpoint
- No further testing recommended

- General read across approach for chloro-containing Pt and Pd substances is to read across from other chloro-containing substances
- May be overly conservative for tetraammine palladium dichloride
- **Recommend conducting *Daphnia* test with tetraammine palladium dichloride to assess this**
- For tetraammine platinum dichloride Annex III exemptions may apply (therefore no ecotox data required)
  - **Does this substance have dispersive / diffuse uses?**

# 3.2 PGM Acute/ RDT testing

Add recommendations Expert Group

# 3.3 PGM nanomaterials – Impact on ITS

# Nanomaterials

- Following particle size testing, nano-rhodium may need to be registered
- Proposed strategy for the environment:
  - » Conduct TD test first – this would need to be specifically designed to separate nanomaterial from solution
    - *Methods currently being assessed for nanosilver*
  - » Following TD results it may be possible to classify materials in same way as metal powders
    - *Based on release of soluble metal compared with Environmental Reference Value (ERV) for soluble form*
  - » If nano-specific behaviour is observed, specific ecotoxicity tests with the nanomaterial may need to be designed

# 3.3 PGM nanomaterials – Impact on ITS

Add recommendations Expert Group

# 4. Current status of PNEC and DNEL refinement

KLAUS ROTHENBACHER

# PNEC derivation status

- Palladium
  - PNECs derived
- Platinum
  - Preliminary PNECs derived – to be finalised following receipt of HHPA-2AE ecotox results
- Rhodium
  - Ecotox testing near-complete (if agreed to read across fish study from rhodium trinitrate)
  - PNECs can be derived by end November
- Ruthenium
  - Ecotox tests for tetraammonium decachloro-mu-oxodiruthenate(4-) and ruthenium trichloride ongoing
  - Results required before deriving PNECs

# 4.2 DNEL (Derived No-Effect Level) derivation for substances > 10 tpa

DNELs needed for each health effect and each relevant exposure pattern

Two main types:
$DNEL_{long\text{-}term}$
$DNEL_{acute}$

Systemic and local effects

Reproductive toxicity (fertility impairment and developmental toxicity)

However, lack of dose-descriptors generally precludes DNEL derivation for acute toxicity, irritation/corrosion, sensitization

bibra
toxicology advice
& consulting

| Exposure pattern | DNEL/DMEL (appropriate unit) | |
|---|---|---|
| | Workers | General population [3] |
| **Acute – inhalation, systemic effects[1]** | worker-DNEL acute for inhalation route-systemic | General population-DNEL acute for inhalation route-systemic |
| **Acute – dermal, local effects[2]** | worker-DNEL acute for dermal route-local | General population-DNEL acute for dermal route-local |
| **Acute – inhalation, local effects[2]** | worker-DNEL acute for inhalation route-local | General population-DNEL acute for inhalation route-local |
| **Long-term – dermal, systemic effects[1]** | worker-DNEL long-term for dermal route-systemic | General population-DNEL long-term for dermal route-systemic |
| **Long-term – inhalation, systemic effects[1]** | worker-DNEL long-term for inhalation route-systemic | General population-DNEL long-term for inhalation route-systemic |
| **Long-term – oral, systemic effects[1]** | Not relevant | General population-DNEL long-term for oral route-systemic |
| **Long-term – dermal, local effects[2]** | worker-DNEL long-term for dermal route-local | General population-DNEL long-term for dermal route-local |
| **Long-term – inhalation, local effects[2]** | worker-DNEL long-term for inhalation route-local | General population-DNEL long-term for inhalation route-local |

1. Units for systemic exposure are mg/m3 for inhalation, and mg/kg bw for oral and dermal exposure

2. Units for local effects are mg/m3 for inhalation; and for dermal exposure: mg/cm2 skin, mg/person/day (e.g., calculated based on the deposited amount per cm2 times the actually exposed body area), or a measure of concentration (% or ppm)

3. General population includes consumers and humans via the environment. In rare cases it may also be relevant to derive a DNEL for specific subpolulations, such as children.

# 4.2 DNEL (Derived No-Effect Level) derivation for substances > 10 tpa

DNEL Derivation Pd on schedule for end 2015

DNEL Derivation Pt (first batch) planned for early 2016 + end 2016 (second batch)

# 4.2.1 DN(M)EL derivation Chloroplatinates

## Background

- Chloroplatinates (CP) are known resp. sensitizers
- Significant data available (monitoring + epidemiology) from IPA
- Data sharing agreement in place
- Data generated in different context: need expert support in adapting to Reach + deriving DN(M)EL

## Status/ Timeline

- Request for proposal sent 16 Sept 2015, DL of end October
- Sent to: Craig Boreiko, Steve Seilkop, Barry Zadjdlik
- Q1 2016: final report envisaged

# 5. Exposure Scenarios (uses/ env.)

# Life cycle tree

- Life cycle trees drafted for all the Pt and Pd substances
- CHESAR was used to facilitate the consistency between the exposure scenarios and section 3.5 of IULCID
- Glossary:
  - **Manufacture: M**
  - **Formulation: F**
  - **Industrial end use at site: IW**
  - **Professional end use: PW**
  - **Consumer end use: C**
  - **Service life (by workers in industrial site): SL-IW**
  - **Service life (by professional workers): SL-PW**
  - **Service life (by consumers): SL-C**

# Life cycle tree Pd (simplified without use descriptors) (1)

| Identifiers | Titles of exposure scenarios and the related contributing scenarios |
|---|---|
| ES1 - M1 | Manufacture - Manufacture of the substance (as such) |
| ES2 - F1 | Formulation - Formulation of preparations |
| ES3 - F2 | Formulation - Formulation in materials |
| ES4 - IW1 | Use at industrial site - Use as an intermediate |
| ES5 - IW2 | Use at industrial site - Production of process catalysts |
| ES6 - IW3 | Use at industrial site - Use of process catalysts |
| ES7 - IW4 | Use at industrial site - Production of environmental or automotive catalysts<br>‣ *Related subsequent service life:* ES8; ES9 |
| ES8 - SL-PW1 | Service life (professional worker) - Service life of environmental or automotive catalysts in professional settings |
| ES9 - SL-C1 | Service life (consumers) - Service life of environmental or automotive catalysts by consumers |
| ES10 - IW5 | Use at industrial site - Use in metal surface treatment<br>‣ *Related subsequent service life:* ES11; ES12 |
| ES11 - SL-PW2 | Service life (professional worker) - Service life of surface treated articles in professional settings |
| ES12 - SL-C2 | Service life (consumers) - Service life of surface treated articles by consumers |
| ES13 - IW6 | Use at industrial site - Reforming and reshaping of palladium metal<br>‣ *Related subsequent service life:* ES23; ES24; ES25; ES26; ES21; ES22 |

# Life cycle tree Pd (simplified without use descriptors) (2)

| | |
|---|---|
| ES14 - PW1 | Use by professional worker - Reforming and reshaping of palladium metal (not becoming part of article) |
| ES15 - PW2 | Use by professional worker - Reforming and reshaping of palladium metal (becoming part of an article)<br>• *Related subsequent service life:* ES23; ES24; ES25; ES26 |
| ES16 - IW7 | Use at industrial site - Production of palladium-containing alloys<br>• *Related subsequent service life:* ES23; ES24; ES25; ES26; ES20; ES19; ES21; ES22 |
| ES17 - PW3 | Use by professional worker - Production of palladium-containing alloys<br>• *Related subsequent service life:* ES23; ES24; ES25; ES26; ES20; ES19 |
| ES18 - PW4 | Use by professional worker - Use as dental alloy<br>• *Related subsequent service life:* ES20; ES19 |
| ES19 - SL-PW3 | Service life (professional worker) - Service life of dental alloys in professional settings |
| ES20 - SL-C3 | Service life (consumers) - Service life of dental alloys by consumers |
| ES21 - SL-IW1 | Service life (worker at industrial site) - Service life of articles with high contact potential in industrial settings |
| ES22 - SL-IW2 | Service life (worker at industrial site) - Service life of articles with low contact potential (palladium included as internal part of the article) in industrial settings |
| ES23 - SL-PW4 | Service life (professional worker) - Service life of articles with high contact potential in professional settings |
| ES24 - SL-PW5 | Service life (professional worker) - Service life of articles with low contact potential (palladium included as internal part of the article) in professional settings |
| ES25 - SL-C4 | Service life (consumers) - Service life of articles with high contact potential by consumers |
| ES26 - SL-C5 | Service life (consumers) - Service life of articles with low contact potential (palladium included as internal part of the article) by consumers |

# Use collation: Rh and Ru substances

- All use questionnaires should now have been received
- Responses currently being collated
- wca will follow up individually with those companies where we have questions
- Main uses for rhodium substances:
  - » Alloy production, Surface treatment, Catalyst uses
- Main uses for ruthenium substances:
  - » Alloy production, Surface treatment, Use in in electronic and scientific equipment, Catalyst uses
- Use titles circulated with meeting documents – please review and highlight any missing uses

# Site Specific PGM Monitoring Programme

- Site specific risk assessments recommended where modelling of emission data gave RCR>0.5 and essential where RCR>1 (i.e. unacceptable risk to the environment)
- Where emission data + modelling indicate that RCRs >1 there is a requirement to undertake monitoring to demonstrate safe production/use
- Monitoring also recommended for RCR = 0.5 – 1,
  - » e.g. to remove doubt from uncertainties in exposure assessment and likely requirement to undertake assessment of mixtures in future

# Site Specific PGM Monitoring Programme

- 6 companies performing monitoring:

| Company | Effluent | Receiving Water | Sediment |
|---|---|---|---|
| 1 | ✔ | ✔ | ✔ |
| 2 | ✔ | ✔ | ✔ |
| 3 | ✔ | ✖ | ✔ |
| 4 | ✖ | ✖ | ✔ |
| 5 | ? | ? | ? |
| 6 | ? | ? | ? |

- Four companies have or are performing monitoring managed by wca
- Companies 5 and 6 are performing in-house monitoring programmes; no data received by wca

# PGM Monitoring Programme

- For companies performing monitoring (managed by wca)
  - One company has completed monitoring and the SSRA will be updated once final lab results are received (expected early October)
  - One company have extended the monitoring programme to analyse for other PGMs and precious metals – complete in approximately 3 months
  - One company has decided to perform an extended monitoring programme (to be run internally) after discussions with wca and based on initial sample results
  - One company has final sediment sample to be taken - due October

# PGM Monitoring Programme

- After completion of the monitoring programmes the SSRAs will be refined using the monitoring dataset
- Most monitoring programmes are expected to finish by December and updated SSRA will be available in early 2016, or earlier.
- For companies with internal monitoring programmes; data will need to be provided or SSRA can be updated internally

# Monitoring PGM Removal in STPs

- A monitoring programme has been established at STPs that are receiving discharges from plants processing effluent containing PGMs
- Conditions (and removal rates) can vary between STPs and over time
  - » Sampling at 3 STPs in two different countries
  - » Sampling to address seasonal variation (specifically, high and low flow conditions)
  - » Average removal rate taken forward to use in exposure assessment

# Monitoring PGM Removal in STPs

- First round of monitoring was November-December 2014
  - » Medium flow conditions (dependent on local conditions)
- Second round of monitoring was in April – May 2015
  - » High flow conditions
- Third round of monitoring took place at 2 sites in mid September (one more to go)
  - » Low flow conditions
- Samples analysed for Pd, Pt, Rh and Ru
  - » Influent, effluent and sludge analysed

# Monitoring PGM Removal in STPs

- Summary data tables for Winter 2014 and Spring 2015 sampling

| Analysis type | Removal Efficiency (%) | | | |
|---|---|---|---|---|
| | Pd | Pt | Rh | Ru |
| Total | up to 68 | up to 67 | up to 67 | up to 79 |
| Dissolved | up to 86 | up to 67 | up to 72 | up to 77 |

- After completion of the sampling analysis, the removal efficiency will be calculated based on a statistical review.

# Environmental Exposure Assessment

- Removal rates determined from the STP monitoring study will be input to the GES & SSRAs for each metal
- Site-specific monitoring will be used to amend SSRA for respective companies
- Stack emission data is very limited – we will look to justify the use of SpERC value across PGM sector (i.e. pooling all available data across metals)

# 6. Occupational Exposure

# Pt - Conducted work Oct 14 – Sept 15

- October 2014 meeting: EBRC was requested to reflect on varying hazard potential of Pt substances
  - → Proposal to follow “Workplace-specific approach” during March 2015 meeting
  - → Agreement of WG in April to follow proposal
  - → 2 members contacted for expert opinion in May, set of workplaces defined, agreement to compare with publication on Pt data from IPA once available to EBRC
  - → Final scope agreed on by WG in June
  - → Draft IPA Publication and data received Mid September

# IPA data and publication

- No workplace-assignment of data
- Some processes may not be relevant for EU (primary production)
- Only subset of data obtained in EU (only UK)
- Data gaps / open questions (data sets available at EBRC: 2000-2012; data sets used for publication: 2000-2011; sampling duration; TWA values; additional data available (2012-2015)?; historical data still relevant?)
- To compare with EU data sets from members (2 contact persons (non-UK) indicated that data are available)

# Pt – Status October 2015

- Initiation of survey in November 2015:
  - Assignment of process steps to “common workplaces” (WPs)
  - Consideration of all Pt substances
  - To be completed on-line in Webex together with EBRC
  - Assignment of monitoring data to WPs together with EBRC
  - Assignment of IPA data
- Test run with 2 members already contacted before (data holders) in October
- Remaining companies will be contacted within the next 2 weeks for finding individual dates for of on-line survey

# Pd – Way forward

- Final scope agreed on by WG in June 2015
  → additional substances to be covered by occ. ES:
    - Palladium dichloride
    - Disodium tetrachloropalladate
- Depending on number of companies (to be indicated to EBRC), information on manufacture to be obtained via
  a) occupational exposure questionnaire or
  b) direct communication
- Check of monitoring data for new substances and for update of already existing data sets required

# Occupational monitoring campaign

- Organise monitoring campaign in 2016 for several PMC substances
  - Save costs
  - Save time
  - Improve read across possibilities
  - Have data already available if needed

- Four sites will be selected by the PMC secretariat
  - Representative sites
  - Sites manufacturing several substances that need ES
  - Monitoring included in PMC budget as this will be used for the development of ES to be included in the JS dossier

# 7. 2016 draft budget/ Project Planning

# Proposed changes in budget presentation (to be validated by MC end of October)

- Reserves to be invoiced are listed under each project in a separate line
- Two columns are now available:
  - One with the requested budget for 2016
  - One with the money to be spent in 2016 including amounts committed in 2015 and which needs to be paid in 2016 because projects are continuing or will be finished but not invoiced before the closure of the 2015 accounts. This column will be reviewed and adapted by end of 2015 to ensure that this will take into account the latest expected invoices.
- As per recommendation of the GA in June, PGM project has been split in 5 sub-projects to reflect the new allocation of the costs and respect the recommendation of the draft implementing act on Data Sharing
- Limited budget for Ir and Ir compounds in 2016 due to registration end of 2015. Maintenance of the dossier will start in 2017.

# 7.1 2016 draft budget

| | PMC 2016 Budget *to be spent* | PMC 2016 Budget *to be invoiced* |
|---|---|---|
| ***Platinum-specific costs*** | ***1.021.175 €*** | ***505.827 €*** |
| **Pt REACH registration** | **971.175 €** | **377.775 €** |
| *Phase 1: Literature search, data gap analysis and recommendations* | 4.000 € | 4.000 € |
| *Phase 2: In-depth data gap analysis and integrated testing strategy* | 2.500 € | 2.500 € |
| *Phase 3: Experimental studies (testing programme including cost of samples)* | 762.600 € | 169.200 € |
| *Phase 4: Generation of Chemical Safety Reports* | 168.525 € | 168.525 € |
| *Phase 5a: Generation of IUCLID 5 Files and Registration Dossiers* | 32.550 € | 32.550 € |
| *Phase 5b: IUCLID 5 Hosting System* | 1.000 € | 1.000 € |
| *Phase 6: Administration/others (secretariat work for project management, organisation & participation in meetings, communication)* | | |
| **Pt REACH classification & labelling** | **0 €** | **0 €** |
| **Pt REACH authorisation** | **50.000 €** | **50.000 €** |
| *Chloroplatinates* | 50.000 € | 50.000 € |
| **Building reserves** | | **78.052 €** |

# 7.1 2016 draft budget Pd

| | PMC 2016 Budget *to be spent* | PMC 2016 Budget *to be invoiced* |
|---|---|---|
| ***Palladium-specific costs*** | ***516.125 €*** | ***589.398 €*** |
| **Pd REACH registration** | **516.125 €** | **516.125 €** |
| *Phase 1: Literature search, data gap analysis and recommendations* | 4.000 € | 4.000 € |
| *Phase 2: In-depth data gap analysis and integrated testing strategy* | 2.500 € | 2.500 € |
| *Phase 3: Experimental studies (testing programme including cost of samples)* | 170.000 € | 170.000 € |
| *Phase 4: Generation of Chemical Safety Reports* | 286.125 € | 286.125 € |
| *Phase 5a: Generation of IUCLID 5 Files and Registration Dossiers* | 52.500 € | 52.500 € |
| *Phase 5b: IUCLID 5 Hosting System* | 1.000 € | 1.000 € |
| *Phase 6: Administration/others (secretariat work for project management, organisation & participation in meetings, communication)* | | |
| **Pd REACH classification & labelling** | **0 €** | **0 €** |
| **Pd REACH authorisation** | **0 €** | **0 €** |
| **Building reserves** | | **73.273 €** |

# 7.1 2016 draft budget Rh

| | PMC 2016 Budget *to be spent* | PMC 2016 Budget *to be invoiced* |
|---|---|---|
| ***Rhodium-specific costs*** | ***129.000 €*** | ***136.442 €*** |
| **Rh REACH registration** | **129.000 €** | **129.000 €** |
| *Phase 1: Literature search, data gap analysis and recommendations* | 4.000 € | 4.000 € |
| *Phase 2: In-depth data gap analysis and integrated testing strategy* | 2.500 € | 2.500 € |
| *Phase 3: Experimental studies (testing programme including cost of samples)* | 90.000 € | 90.000 € |
| *Phase 4: Generation of Chemical Safety Reports* | 31.500 € | 31.500 € |
| *Phase 5a: Generation of IUCLID 5 Files and Registration Dossiers* | 0 € | 0 € |
| *Phase 5b: IUCLID 5 Hosting System* | 1.000 € | 1.000 € |
| *Phase 6: Administration/others (secretariat work for project management, organisation & participation in meetings, communication)* | | |
| **Rh REACH classification & labelling** | **0 €** | **0 €** |
| **Rh REACH authorisation** | **0 €** | **0 €** |
| **Building reserves** | | **7.442 €** |

# 7.1 2016 draft budget Ru

| | PMC 2016 Budget *to be spent* | PMC 2016 Budget *to be invoiced* |
|---|---|---|
| ***Ruthenium-specific costs*** | ***473.950 €*** | ***260.181 €*** |
| **Ru REACH registration** | **473.950 €** | **211.350 €** |
| *Phase 1: Literature search, data gap analysis and recommendations* | 4.000 € | 4.000 € |
| *Phase 2: In-depth data gap analysis and integrated testing strategy* | 2.500 € | 2.500 € |
| *Phase 3: Experimental studies (testing programme including cost of samples)* | 431.800 € | 169.200 € |
| *Phase 4: Generation of Chemical Safety Reports* | 33.600 € | 33.600 € |
| *Phase 5a: Generation of IUCLID 5 Files and Registration Dossiers* | 1.050 € | 1.050 € |
| *Phase 5b: IUCLID 5 Hosting System* | 1.000 € | 1.000 € |
| *Phase 6: Administration/others (secretariat work for project management, organisation & participation in meetings, communication)* | | |
| **Ru REACH classification & labelling** | **0 €** | **0 €** |
| **Ru REACH authorisation** | **0 €** | **0 €** |
| **Building reserves** | | **48.831 €** |

# 7.1 2016 draft budget Ir

| | PMC 2016 Budget *to be spent* | PMC 2016 Budget *to be invoiced* |
|---|---|---|
| ***Iridium-specific costs*** | ***1.000 €*** | ***1.000 €*** |
| **Ir REACH registration** | **0 €** | **0 €** |
| *Phase 1: Literature search, data gap analysis and recommendations* | 0 € | 0 € |
| *Phase 2: In-depth data gap analysis and integrated testing strategy* | 0 € | 0 € |
| *Phase 3: Experimental studies (testing programme including cost of samples)* | 0 € | 0 € |
| *Phase 4: Generation of Chemical Safety Reports* | 0 € | 0 € |
| *Phase 5a: Generation of IUCLID 5 Files and Registration Dossiers* | 0 € | 0 € |
| *Phase 5b: IUCLID 5 Hosting System* | 0 € | 0 € |
| *Phase 6: Administration/others (secretariat work for project management, organisation & participation in meetings, communication)* | | |
| **Ir REACH dossier maintenance** | **1.000 €** | **1.000 €** |
| *Phase 1: Literature search, data gap analysis and recommendations* | 0 € | 0 € |
| *Phase 2: In-depth data gap analysis and integrated testing strategy* | 0 € | 0 € |
| *Phase 3: Experimental studies (testing programme including cost of samples)* | 0 € | 0 € |
| *Phase 4: Generation of Chemical Safety Report* | 0 € | 0 € |
| *Phase 5a: Generation of IUCLID 5 Files and Registration Dossiers* | 0 € | 0 € |
| *Phase 5b: IUCLID 5 Hosting System* | 1.000 € | 1.000 € |

# 7.2 Ir and Ir compounds Registration timeline

| | 2015 | | | | 2016 | | | | 2017 | | | | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | **2** | 3 | 4 | 1 | 2 | 3 | 4 | 1 |
| Testing | | | | | | | | | | | | | |
| PNEC/ DNEL | | | | | | | | | | | | | |
| ES | | | | | | | | | | | | | |
| Commenting | | | | | | | | | | | | | |
| Registration | | | | | | | | | | | | | |
| . | | | | | | | | | | | | | |

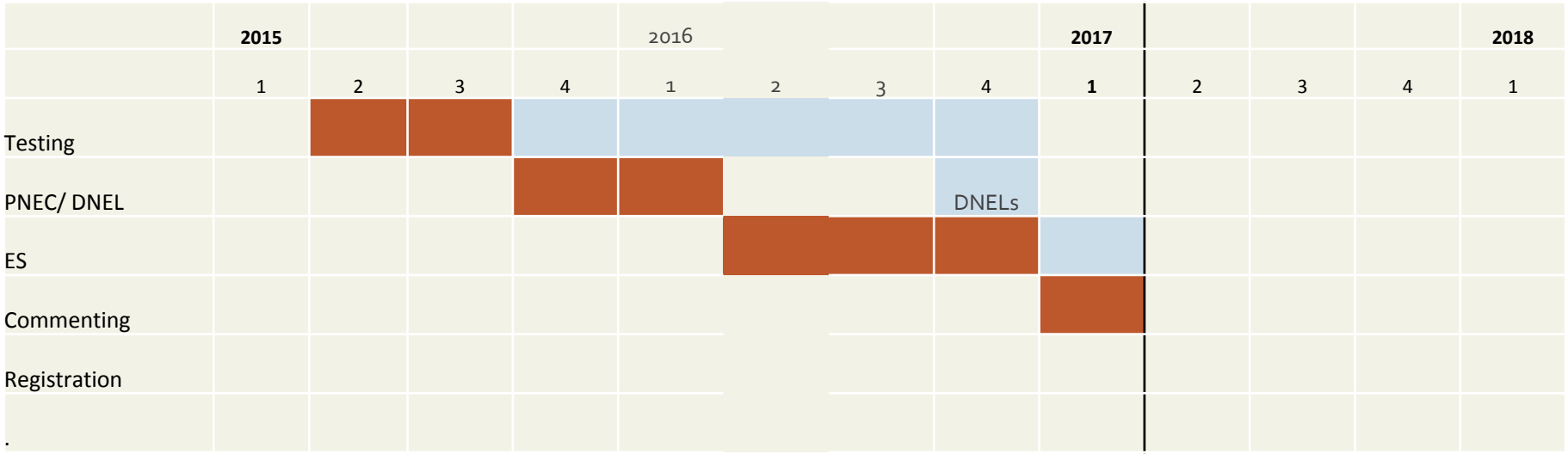
- No ES/ CSRs required
- Uses mapped and included in IUCLID
- Reaction mass IrCl3/Cl4: LR conduction additional substance characterisation
- All other dossiers are ready as soon as final SID cards completed
- On track for dossier completion in Q4 2015

# 7.2 Pd and Pd compounds Registration timeline

| | 2015 | | | | 2016 | | | | 2017 | | | | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | **2** | 3 | 4 | 1 | 2 | 3 | 4 | 1 |
| Testing | | | | | | | | | | | | | |
| PNEC/ DNEL | | | | | | | | | | | | | |
| ES | | | | | | | | | | | | | |
| Commenting | | | | | | | | | | | | | |
| Registration | | | | | | | | | | | | | |
| . | | | | | | | | | | | | | |

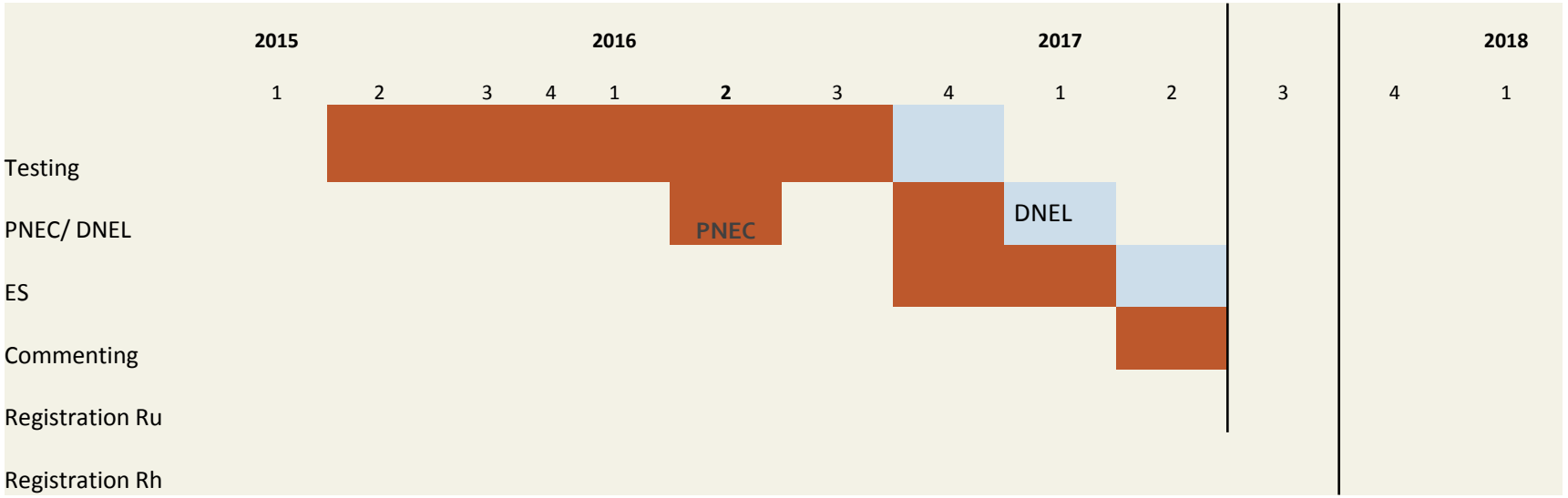
- Testing completed
- PNEC derivation completed, DNEL derivation ongoing (by end 2015)
- ES will be conducted once final DNELs available
- Dossier completion by Q2 2016

# 7.2 Pt and Pt compounds Registration timeline




- Additional testing ongoing due to tonnage increases (Karstedt, HHPA-2AE)
- PNEC/ DNEL derivation and ES after tests completed
- Dossier completion planned by Q1 2017

# 7.2 Ru/Rh and Ru/Rh compounds Registration timeline




- Delay in testing of Tetraammonium decachloro-mu-oxodiruthenate
- Additional testing ongoing due to tonnage increases (RuCl3) + nano Rh
- PNEC/ DNEL derivation and ES after tests are completed
- Dossiers will be ready as planned

# A.O.B.
# Next meeting
# Closing remarks

# Any other business

## Uses

- Suggest to list uses on EPMF website for all PGM substances, and link each use to ES

***Any objections?***

## Date of next meetings

- 19-20-21 April 2016
- 4-5-6 October 2016
- Same format is this year

# Thank you!