PM Refiners WG – Meeting Task Force to split PM Refinables
27 September 2013, 10:30-14:30 CET

Chairpersons: *E. Broekaert (Umicore, Belgium) & D. Cholakova (Aurubis, Belgium)*
Secretariat: *K. Arijs (ARCHE, Belgium)*

Metals Conference Centre – Gold Room
Rue du Duc 100 – 1150 Brussels (BELGIUM)

LIST OF PARTICIPANTS

1.	**Angela Alderman**	Johnson Matthey	*United Kingdom*
2.	**Katrien Arijs**	ARCHE (Coordinator)	*Belgium*
3.	**Oluf Bøckman**	Glencore Nikkelverk AS	*United Kingdom*
4.	**Caroline Braibant**	EPMF	*Belgium*
5.	**Edwin Broekaert**	Umicore	*Belgium*
6.	**Daniela Cholakova**	Aurubis	*Belgium*
7.	**Mike Shepherd**	Vale Europe	*United Kingdom*
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MINUTES

AP refer to Action Points listed at the end of this document.

1. **Welcome & Introduction.**
   - **1.1. Reminder on Confidentiality and Competition Law.** Participants were reminded on their obligation to comply with Confidentiality and Competition Law.
   - **1.2. Tour de table and apologies.** See list of participants above.
   - **1.3. Approval of the agenda.** The agenda is available in Annex 1. No remarks/additions; agenda approved.
     The aim of this meeting is to agree on possible sub-groups for PM slags, PM slimes and sludges and PM flue dust. The final registration strategy (1 or multiple registrations) will be determined after PMC Members have assigned their Refinables to the sub-group(s) and composition and classification boundaries have been defined.

2. **Background of splitting exercise, generic flowsheet PM Refinables and useful information from NFM industries BREF** *(Cf. slides 5-12 in Annex 2)*
   It is suggested to put a summary of these slides in the CSR of all the Refinables, in order to 'set the scene' and to explain the difficulties in grouping/splitting the Refinables. To explain the manufacture in the CSR, it is suggested to consult the NFM industries BREF for a description of techniques and different processes.
   It is noted that for the Cu intermediates, a similar general section is also included at the start of the CSR (same info in each CSR). AP1

3. **Splitting of PM slags**
   - **3.1. Overview of reported production processes and proposed sub-groups** *(Cf. slides 14-15 in Annex 2)*
     Based on the criteria proposed by the Task Force in March 2013 and the production processes reported by the PM Refiners in summer 2009, the PMC secretariat proposed an initial split of the PM slags in 2 sub-groups:
     1) Slags produced as by-products in the production (smelting, reduction, converting, and refining processes) of doré;
     2) Slags produced as a by-product in the smelting of PM bearing feeds to produce a PM containing alloy subject to further refining.

   - **3.2. Overview of comments received from the PM Refiners WG** *(Cf. slide 16 in Annex 2)*
     The initial sub-grouping was sent to the PM Refiners WG for comments. No comments were received.

   - **3.3. Discussion and revision/agreement on sub-groups**
     Remarks/additions on the sub-groups by the Task Force:
     - It is noted that some members no longer use borax in their smelting processes (AP7-8). Borax is usually added to decrease the viscosity of the slags. Fluxes used influence composition and hence, resulting classification. There is no separate classification cluster for the borate slags though (same cluster as some of the silicate slags).
     - It is anticipated that more than 1 classification will be defined for sub-group 2 (different classification for different fluxes) but these can be considered sub-groups of the same

registration (2a, 2b, …). Possibly also several classifications will be defined for sub-group 1 as also different fluxes can be used there.

- The sub-grouping of slags into slags produced in the production of doré/slags produced in the production of PM containing materials other than doré could have an impact on the grouping of doré. **AP9**
- It is suggested to widen the description of sub-group 2 to also contain matte and to change 'alloy' to 'material'. Furthermore, it is suggested to add 'other than doré' to the description to make the distinction with the other sub-group clearer.
- There is some discussion as to whether the proposed sub-grouping is really necessary/relevant:
  - ECHA guidance states that the main identifiers for UVCB substances should be related to the source of the substance and the process used. The currently proposed sub-groups for the PM slags result in different products, but the sources and processes to produce both can be the same/similar (although some members think that the source for sub-group 1 is typically Ag rich material, whereas the source for sub-group 2 is considered to be more PGM rich material).
  - Splitting could result in higher registration costs for some companies or decreased tonnage bands (and hence, of information requirements) in splitted dossiers. **AP10-11**
  - It is suggested to list pros and cons of having 1 or multiple registrations for each PM Refinable. **AP2**
- It is noted that some time ago, an LoA purchaser declared he sold his PM slag so this use will potentially need to be added to the CSR. **AP13**

After discussion, the Task Force agrees on the 2 following sub-groups for PM slags for now:
1) Slags produced as by-products in the production (smelting, reduction, converting, and refining processes) of doré;
2) Slags produced as a by-product in the smelting of PM bearing feeds to produce a PM containing material other than doré subject to further refining.

4. Splitting of PM slimes & sludges

4.1. Overview of reported production processes and proposed sub-groups *(Cf. slides 19-23 in Annex 2)*

Based on the criteria proposed by the Task Force in March 2013 and the production processes/sources reported by the PM Refiners in summer 2009, the PMC secretariat proposed an initial split of the PM slimes & sludges in 6 sub-groups (cf. slide 23 in Annex 2).

4.2. Overview of comments received from the PM Refiners WG *(Cf. slides 24-29 in Annex 2)*

The initial sub-grouping was sent to the PM Refiners WG for comments. One Member sent a re-drafted proposal for splitting (cf. slides 24-28 in Annex 2), based on the following processes/sources distinguished in the production of slimes & sludges:

(a) Electrolytic refining of Ag/Au;
(b) Upgrading of PM containing solid materials (resulting in a material with higher PM content);
(c) Depletion of PM containing solid materials by leaching (resulting in a material with lower PM content);
(d) Precipitation from PM containing solutions.

The 5 resulting sub-groups are:

1) Slimes obtained/produced during the electrolytic refining of Ag and Au;
2) Slimes obtained/produced from hydro- or pyro- metallurgical upgrading of PM containing materials including non-PM sources (i.e. removal of base metals or solvent, producing an upgraded/enriched residue);
3) Slimes obtained/produced by precipitation of solutions containing PMs;
4) Slimes obtained/produced from the hydro-metallurgical leaching of PMs from PM containing materials (i.e. dissolution of PMs leaving a lower grade residue);
5) Other slimes and sludges generated as by-products during PM production processes.

This proposal was used as a basis for the discussion under 4.3. Other comments received (cf. slide 29 in Annex 2) were also taken into account.

4.3. Discussion and revision/agreement on sub-groups

Remarks/additions on the 5 sub-groups under 4.2. by the Task Force:

- It is suggested to keep the slimes obtained/produced during the electrolytic refining of Ag separate from slimes obtained/produced during the electrolytic refining of Au, as their composition and source is very different (process similar).
- It is noted that we might have to split other sub-groups according to source as well (e.g. Ag/Au) or that we will need to be able to justify why we used different splitting/grouping criteria for different Refinables. However, slimes & sludges is currently the most heterogeneous group of all the PM Refinables and it hence makes sense to look at more criteria to split these.
- It is suggested to remove 'pyro-' from sub-group 2 as slimes always result from wet processes. There is some discussion on whether or not slimes can result from pyro-metallurgical processes (**AP14**). It is noted that this also has an influence on the dustiness and hence on the exposure assessment.
- It is suggested to remove sub-group 5 (the 'other' group) but to ask members to indicate if they do not fit within the proposed sub-groups. **AP15-16**
- It is noted that following the sub-grouping of slimes & sludges and the assignment of PMC Members to the new sub-groups, more Refinables that were originally in the slimes and sludges group may end up in the Refinables group 'Residues, precious metal refining cementation and reduction', resulting in an over-grouping there. **AP18**

After discussion, the Task Force agrees on the 5 following sub-groups for PM slimes & sludges for now:

1) Slimes obtained/produced during the electrolytic refining of Ag;
2) Slimes obtained/produced during the electrolytic refining of Au;
3) Slimes obtained/produced from hydro-metallurgical upgrading of PM containing solid materials including non-PM sources (i.e. removal of base metals or solvent, producing an upgraded/enriched residue);
4) Slimes obtained/produced from the hydro-metallurgical leaching of PMs from PM containing solid materials (i.e. dissolution of PMs leaving a lower grade residue);
5) Slimes obtained/produced by precipitation from solutions containing PMs.

Depending on the results of the determination of composition and classification boundaries of the sub-groups at a later stage, we might group sub-group 3 and 4 and possibly 5 (even if different classification), but we need to prove first that we did not over-group and they cannot be distinguished from each other. Ideally, the sub-groups should allow refining the compositions.

5. Splitting of PM flue dust

5.1. Overview of reported production processes and proposed sub-groups *(Cf. slides 32-33 in Annex 2)*

Based on the criteria proposed by the Task Force in March 2013 and the production processes reported by the PM Refiners in summer 2009, the PMC secretariat proposed no sub-grouping for the PM flue dust but one group with the following description:

1) Product resulting from the smelting, refining and/or use of Ag and its alloys obtained from primary and secondary sources and including recycled plant intermediates. Recovered from exhaust air by filtration via cloth bags, arising from hygiene extraction systems on processes in the PM recovery flowsheet.

5.2. Overview of comments received from the PM Refiners WG

The proposal for no sub-groups was sent to the PM Refiners WG for comments. No comments were received.

5.3. Discussion and revision/agreement on sub-groups

It is suggested to replace 'Ag' by 'PMs' in the description.

The Task Force agrees on no sub-grouping for the PM flue dust but one group with the following description:

1) Product resulting from the smelting, refining and/or use of PMs and its alloys obtained from primary and secondary sources and including recycled plant intermediates. Recovered from exhaust air by filtration via cloth bags, arising from hygiene extraction systems on processes in the PM recovery flowsheet.

6. **Next steps, AOB, next meetings/calls and closing remarks**
Next steps are summarized on slide 36 in Annex 2. Remarks/additions:
- It is suggested to skip the approval step and ask PMC Members immediately to assign their Refinables to the proposed sub-groups.
- Regarding the EC numbers, it is noted that a new EC number was generated in the past for Refinables group 9, so it is possible for a registered substance. **AP4**
- It is suggested to look at the descriptions of the other Refinables and check if the processes are well described / if no Refinables are under the wrong registration. It is stressed that all descriptions of our Refinables should follow the same content line: physical form, source, process, and typical composition, as it is already the case in the existing ID Cards. **AP5**

Regarding the **timing of the submission of the upgraded Refinables dossiers to ECHA**, it is noted that the aim is to have at least 1 Lead Registrant dossier submitted by the end of 2013. This would be in line with Eurométaux' communication to ECHA from November 2012 stating that 'the first metals containing UVCB Article 10 dossiers will not be submitted to ECHA before the end of Q3 2013' but that most dossier upgrades would be 'complete by year end'. **AP6**

Annexes
1. Agenda & list of participants
2. Slides presented at the meeting
3. Proposed strategy to split PM slags, slimes & sludges, flue dust (PMC, 18 March 2013)
4. Proposed sub-grouping:
   4.1. Proposal to split slags, PM refining (PMC, 21 June 2013)
   4.2. Proposal to split slimes and sludges, PM refining (PMC, 26 July 2013)
   4.3. Proposal to split flue dust, PM refining (PMC, 13 June 2013)
5. Comments on proposed sub-groups PM slags, slimes & sludges, flue dust (PMC, 8 August 2013)

Actions

Table 1. Actions resulting from the 18 June 2013 PM Refiners WG meeting in Brussels

	Action	Who?	Timeline
General			
1.	Draft general section for the CSR of all the PM Refinables, describing manufacture (cf. techniques and processes in the NFM industries BREF) and explaining the difficulties in grouping/splitting the Refinables	KA with input from PMC Members	Oct 2013
2.	List pros and cons of having 1 or multiple registrations (e.g. fees, total tonnage, …)	KA	Oct 2013
3.	Use information from the splitting exercise for IUCLID section 3.1 on manufacturing	KA	Nov-Dec 2013
4.	Determine availability of new EC numbers for possible new registrations: • Check how Cu consortium requested new EC numbers • Submit question to ECHA helpdesk • Put information on new EC number in IUCLID section 1.5 for possible new registrations	KA	Oct-Nov 2013
5.	Check source and process information currently in ID cards and further refine/complete, add more details to processes, add current sub-groups	Splitting Task Force	Oct-Dec 2013
6.	Check timing of submission dossier upgrades of other NFM consortia at next EM Intermediate TF meeting	KA	24 Oct 2013
PM slags			
7.	Check if PMC Members still use borax fluxes for smelting	KA	By 18 Oct 2013
8.	Check if the result of AP7 has any impact on the cluster analysis for classification	KA through ARCHE	By end Oct 2013

9.	Check if sub-grouping of PM doré is necessary based on the sub-grouping of PM slags	Splitting Task Force	Oct-Nov 2013
10.	Assign their PM slag(s) to proposed sub-group(s), indicate tonnage and composition (elements and species information) per sub-group	All PMC Members	By 18 Oct 2013
11.	Check if there are PMC Members who have both sub-groups of PM slags	KA	By end Oct 2013
12.	Determine composition/classification boundaries of sub-groups	KA/ARCHE	By 5 Nov 2013
13.	Contact LoA purchaser to check if extra use will need to be added to the CSR of PM slags	CB	Oct-Nov 2013
PM slimes & sludges			
14.	Provide a more detailed description of upgrading process resulting in slimes of sub-group 3 to check if only hydro-metallurgical processes are used	All PMC Members	Oct-Nov 2013
15.	Assign their PM slimes & sludges to proposed sub-group(s), indicate tonnage and composition (elements and species information) per sub-group	All PMC Members	Nov 2013
16.	Indicate if their PM slimes & sludges do not fit into any of the proposed sub-groups or other Refinable groups	All PMC Members	Nov 2013
17.	Determine composition/classification boundaries of sub-groups	KA/ARCHE	Dec 2013
18.	Depending on the outcome of AP15-16, revisit the Refinables group 'Residues, precious metal refining cementation and reduction' and check classifications/need for sub-grouping	Splitting Task Force	After AP11-12