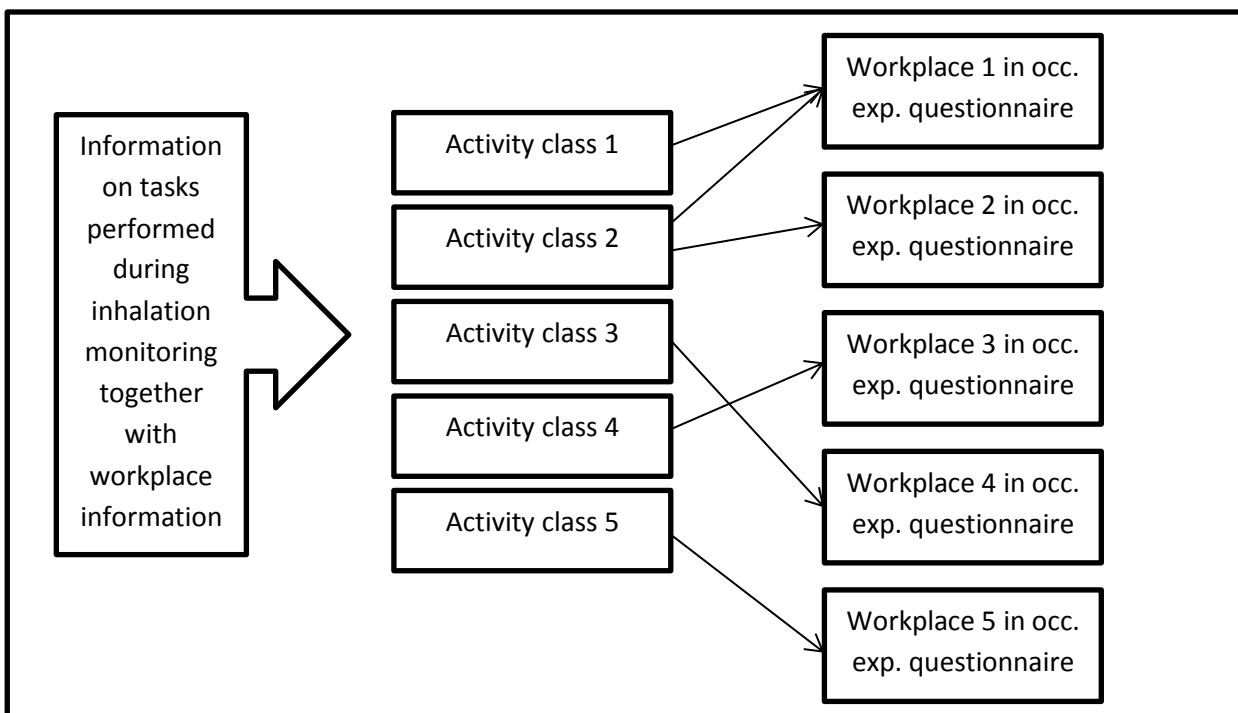


**Discussion points for the telephone conference on 19<sup>th</sup> April regarding the occupational exposure assessment of Precious Metals Refinables**

**Discussion on the development of common workplaces/“activity classes”**

Although the Refinable’s Sector is a very complex industry sector, there are however some processes done to refine precious metals that are (with respect to occupational exposure assessment) very similar between all companies. It is therefore assumed, that the development of activity classes describing common tasks/operations in industry represents a simplification of relevant processes but still provides an adequate level of detail to reflect customer’s needs. Therefore, a list of common workplaces (activity classes, ACs) was developed for all reported activities/processes during handling of refinables. Information provided with measured data, i.e. information on tasks that were conducted by the worker during the measurement and information on assigned workplaces for these measurements according to the occ. exp. questionnaire was used as a basis for the definition of these common workplaces. Each inhalation exposure monitoring measurement was subsequently assigned to the activity classes. By also assigning workplaces of data submitters and non-data submitters as nominated in the occ. exp. questionnaires (see Figure 1 below) it is possible to derive exposure estimate on a task/operation basis.



**Figure 1: Development of activity classes and subsequent assignment of these to nominated workplaces**

For the development of these common workplaces/ACs, performed tasks (as indicated during the submission of measurements and as indicated in the occ. exp. questionnaire) were taken into account, together with information on the handled physical form of substances and information on exposure modifying parameters such as enclosure of processes and separation of workers (see Table 1 below).

**Table 1: Overview of developed activity classes and corresponding tasks**

AC	Activity class	Tasks	Physical appearance	Modifier
1	Material handling / loading / unloading	transfer, cold furnace loading, packaging, <b>mixing?</b>	high dusty	ambient temperature, semi-automated/remote controlled
2	Material handling / loading / unloading		various	ambient temperature, semi-automated/remote controlled
3	Material handling / loading / unloading	<b>storage, transfer/handling of containers</b>	very low dusty	ambient temperature
4	Material handling / loading / unloading	transfer, cold furnace loading, packaging, <b>mixing?</b>	high dusty, various	ambient temperature, direct manual handling (e.g. only hand-held tools)
5	Smelting (partly high MP/PT* ratios)	smelting, tapping, <b>chlorination</b>	molten	worker involved in manual interventions
6	Smelting (partly high MP/PT* ratios)		molten	no manual interventions, closed furnace and/or control room
7	Melting/pyrorefining (low MP/PT* ratios)	melting, casting, <b>cooling, pyrorefining, calcination, granulation?</b>	molten	open processes including casting
8	Roasting	<b>&amp;calcination?</b>	solid (above degradation temperature)	closed furnaces (formation of SO <sub>2</sub> )
9	Drying	drying, slightly elevated temperature	solid (below melting/degradation temperature)	
10	Hydrometallurgical processes	reduction, precipitation, dissolution, filtration, cementation, separation, leaching, electrolysis,	liquid or wetted filter cake	no manual interventions, fully automated, or only handling of liquids
11	Hydrometallurgical processes	<b>electrorefining, floatation, centrifugation?, extraction, mixing?</b>	wetted filter cake	worker involved in manual interventions or open process
12	Mechanical operations	crushing, milling, <b>knock-out (booth), scraping?</b>	substantial formation of abrasive dust	high energy input
13	Mechanical operations	wet milling, <b>sieving</b>	low formation of abrasive dust	low energy input and/or low dusty forms and/or dust suppressed by wetting
14	Cleaning and maintenance	<b>cleaning, maintenance, recovery of bricks/crucibles from furnace linings?</b>	various	most locally installed RMMs are not effective
15	Sampling / evaluation		various	
20	na			
21	closed system			

\*MP: Melting point; PT: Process temperature

Further activity classes (AC16-AC19) were developed for situations in which specific measurements would have otherwise to be assigned to multiple ACs because the monitored worker conducted multiple tasks either within a hot, wet or cold process or even was involved in more than one of these process types during sampling.

The AC-approach facilitates grouping of data from different data submitters for similar tasks and enables analysis of these data on a task-specific basis. Since inhalation monitoring data were already assigned to workplaces of data-submitting companies, further information such as operational conditions (OCs) and risk management measures (RMMs) are available for these data and consequently also for activity classes. Considering that data submissions from different companies with potentially different sets of OCs and RMMs, a specific AC may be sub-divided on the basis of these different conditions.

Feedback on the appropriateness and completeness of the list by the participants (i.e. data submitters) would be very much appreciated. Uncertainties in the assignment of tasks to activity classes are marked in red text colour in the table above. Could you please check and correct if required?

### **Use of exposure data and presentation of the approach in a workshop on the risk assessment of metal UVCBs with ECHA**

Direct discussions with ECHA on approaches to assess the risk of exposure to metals, and especially to metal UVCBs are of major importance. Not only is it possible to convince ECHA of the appropriateness of specific approaches taken by the metal's industry, it is also possible to streamline certain approaches taken by different metal commodities. It is therefore proposed to contribute to an ECHA workshop on the risk assessment of metal UVCBs with the presentation of the approach taken by the Refinable's sector. It is proposed to develop an example for presentation, showing how measured data are used in the exposure assessment for Refinable's sector. It has however to be decided to which extent information is to be used for this presentation. In any case, names of companies that have submitted exposure data will not be revealed. The industry sector will also not be mentioned, although this may be guessable from the presented data.

### **Potential need for further input from data-submitters**

- Further short(!) questions on composition profiles of handled substances may be required
- Additional data gathering of bio-monitoring data (blood lead)