PM CN- Project

Becky Marks, Paul Whitehead,
Adam Peters, Dean Leverett

Changes in scope – (I)

- Silver cyanide tonnage has increased from 1-10 tpa to 10-100 tpa, Annex III exemptions no longer apply
- Annex VIII endpoints are now required
- Silver cyanide will now need to be considered in the modelling report for cyanide substances and a *Daphnia* test may be required to confirm the modelling work
- Silver cyanide will be included in any decisions for the mamm tox testing programme

Changes in scope – (II)

- Potassium tetrakis (cyano-C) aurate has been removed from scope
- Two physico-chemical tests were currently underway at Harlan: density and water solubility
- wca have contacted Harlan to stop this testing prior to completion, but costs to date will still be incurred – response is still awaited
- No environmental or mamm tox testing was being proposed for this substance

Progress on agreed tests – physico-chemical

- All samples and sample documentation have now been received by Harlan
- Physico-chemical tests are ongoing

Progress on agreed tests - ecotoxicity

- Test programme has been delayed due to delays in sample delivery
- Range finder tests for *Daphnia* and activated sludge respiration inhibition tests commenced on 12 December 2011 for potassium dicyanoaurate
- Potassium dicyanoargentate sample has not been received and therefore testing is delayed

Progress on agreed tests - dustiness

- PM CN- substances have been included in the dustiness testing programme along with the PGM substances (PMRC)
- The test programme is currently underway

Measuring free cyanide

- Numerous methods available
- Numerous definitions of what “free cyanide” is
- ISE method will be used for range finding ecotox tests
  - Assessment of suitability following these tests
- ISE method is simple and quick
  - LOD could be an issue depending on strain sensitivity

Next steps for mammalian toxicity endpoints

- Measurement of free CN ions appropriate to determine the potential influence of free CN on the toxicity
- This should be performed for potassium silver cyanide, potassium gold cyanide and silver cyanide
- Dissociation to be assessed in aqueous solution in the first instance (to validate methodology and provide empirical assessment of likely bioaccessibility)
- Results from aqueous release of free CN to determine whether further studies in artificial physiological fluids are necessary
- Dissociation results to inform how the *in vivo* mamm tox endpoints to be fulfilled

Update on cyanide modelling paper

- Following comments from the PM CN- expert group the paper on cyanide modelling is currently being updated
- Silver toxicity (Bianchini et al 2002) now assessed in terms of Ag^+ activity as well as dissolved Ag
- Variation in *Daphnia* sensitivity under consideration
- Results from *Daphnia* tests will be used to refine the modelling approach

ITS finalisation

- Proposal is to update the ITS report to take into account recent changes in scope and comments from this meeting and then finalise
- Report will be finalised by end of January
- Any changes required following this will be added as an addendum to the report

Next steps

- Physico-chemical and ecotoxicological testing programmes are ongoing
- Cyanide modelling approach to be confirmed using results from *Daphnia* tests once these are complete
- Dissociation of free CN to begin following agreement on the method for measurement of free cyanide
- Update ITS on the basis of changes in scope