

Summary of PGM WG discussion on relevance of CLP tests

Brussels, 22 April 2010

PGM WG face-to-face meeting

CLP

Flammability *et al.*

- ❑ Oxides in highest oxidation state:
 - No flammability
 - ❑ PGM chlorides:
 - Decompose but do not propagate (industrial handling expertise)
 - ❑ PGM Powders:
 - Flammability depends on PSD but can be assessed based on industrial handling expertise
 - Post-meeting note: recently generated information indicates that Pd and Rh powders are not flammable or self-ignitable
 - ❑ PGM compounds in solution (except those in organic solution)
 - No flammability
 - No self-ignition
 - No oxidising properties
 - Explosive properties based on content of explosive groups
 - See CLP information requirements applicable on liquids
 - ❑ Karstedt concentrate:
 - Test for flammability
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Explosive properties

- Some likely to be confirmed as explosives
 - Check info on Tetrammines/Nitrates has been circulated to WCA
 - Check solutions are not tested for explosive properties if not compatible with test protocol
 - Check O₂ balance has been considered in test recommendation
 - Check pre-test
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Self-ignition

- In highest oxidation state → waive (check)
 - Aq. solutions → no self-ignition
 - Karstedt + Tetrakis: < 160°C MP → no self-ignition
 - Organics:
 - In principle not self-ignite
 - Check protocol and agree after
 - Check pre-test/screening possibility (calorimetry?)
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Oxidising properties

- If in solution, no test (technically not feasible) - check
 - No halogen, no O = no test
 - Halogen and/or O = test
 - WCA to check testing recommendations
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Corrosivity to metals

- Chlorides corrosive to Al at least (see transport)
 - Nitrates: electrochemical reactions between PGM and vessel materials (slow/fast? – check)
 - Check implementation/consequences
 - Testing possible to confirm expertise
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Melting point (as a surrogate for other CLP endpoints)

Melting point

- ☐ Melting point:
 - Check open literature
 - Confirm self-ignition needs pending on MP
 - Action MP tests
 - Mainly will decompose:
 - ☐ Chlorides
 - ☐ Tetrammines
 - ☐ Most organics
 - ☐ Check remaining one by one (especially oxides and metals)
 - DSC? DTA? to estimate melting and boiling points?
 - Consider guidance document and applicability of above pre-tests
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Water solubility and T/D

Water solubility

- No test:
 - If decomposes in water (check unstable 1)
 - If already in aqueous solution (7 out of 37)
 - Test:
 - Consider volume discount ($\sim 29 \times 4000 \text{ £} = \sim 120\,000 \text{ £}$ at external lab)
 - No need for GLP accredited lab – JM proposes conducting/publish
 - See indicative solubilities/stability diagrams
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T/D

- Rh trichloride:
 - Unlikely to be placed as anhydrous on market – check concerned company
 - Hydrated is not a SSMC $\rightarrow$ no T/D
 - Solution $\rightarrow$ no T/D
 - Rh oxide: unlikely to be placed as anhydrous
 - Ru oxide:
 - Unlikely to be placed as anhydrous – check concerned company
 - After checking – all are placed as anhydrous on the market by at least one PMC Member $\rightarrow$ T/D tests relevant for all (hydrated solids deemed to be worst case from solubility viewpoint)
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Timeplan CLP+MP+T/D testing programme

Timeplan

- ❑ Launch T/D as soon as possible (CANMET's availability May)
 - ❑ WCA to prepare adjusted testing recommendation: early May
 - ❑ PGM WG telcon: mid May
 - ❑ Final WCA test recommendations: end May/early June
 - ❑ Sent to PMC Assembly/adjust PGM testing budget: mid June latest
 - ❑ Start CLP+MP testing programme: End June/Early July latest
 - ❑ First reports expected: Sep
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