

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Vale Europe Ltd</h3> <p>Issue No: 016 Issue date: 13 December 2011</p>	
	<p>Acton Refinery Bashley Road London NW10 6SN</p>	<p>Contact: Mr C R Gilkes Tel: +44 (0)20 8965 6031 X 266 (Switchboard) Tel: +44 (0)20 8453 9266 (Analytical Laboratory) Fax: +44 (0)20 8453 0307 E-Mail: cgilkes@vale.com Website:</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>CHEMICALS: INORGANIC</p> <p>Rhodium Powder</p>	<p><u>Chemical Tests</u></p> <p>Aluminium, Antimony, Arsenic, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Gold, Iridium, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Osmium, Palladium, Platinum, Phosphorus, Ruthenium, Selenium, Silicon, Silver, Tellurium, Tin, Titanium, Tungsten, Zinc, Zirconium Purity of Rhodium</p>	<p>Documented In-House Method SPEC-013 using ICP-OES</p>
<p>PRECIOUS METALS</p> <p>- Platinum and Palladium Sponges - Rhodium, Ruthenium, Iridium Powders</p>	<p><u>Physical Tests</u></p> <p>Ignition loss</p>	<p>Documented In-House Method SPEC-001 using precision weighing</p>
<p>- Gold grains</p>	<p><u>Chemical Tests</u></p> <p>Aluminium, Antimony, Arsenic, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Iridium, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Osmium, Palladium, Rhodium, Platinum, Phosphorus, Ruthenium, Selenium, Silicon, Silver, Tellurium, Tin, Titanium, Tungsten, Zinc, Zirconium Purity of Gold</p>	<p>Documented In-House Method SPEC-007 using ICP-OES</p>



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<p>PRECIOUS METALS (cont'd)</p> <p>- Iridium Powder</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Aluminium, Antimony, Arsenic, Bismuth, Boron, Calcium, Chromium, Cobalt, Copper, Gold, Iron, Lead, Magnesium, Manganese, Nickel, Osmium, Palladium, Rhodium, Platinum, Ruthenium, Silver, Tellurium, Tin, Zinc Purity of Iridium</p>	<p>Documented In-House Method SPEC-003 using direct reading spectrometry</p>
<p>- Palladium Sponge</p>	<p>Aluminium, Antimony, Arsenic, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Gold, Iridium, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Osmium, Rhodium, Platinum, Phosphorus, Ruthenium, Selenium, Silicon, Silver, Tellurium, Tin, Titanium Tungsten, Zinc, Zirconium Purity of Palladium</p>	<p>SPEC-006 using ICP-OES</p>
<p>- Platinum Sponge</p>	<p>Aluminium, Antimony, Arsenic, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Gold, Iridium, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Osmium, Palladium, Rhodium, Phosphorus, Ruthenium, Selenium, Silicon, Silver, Tellurium, Tin, Titanium, Tungsten, Zinc, Zirconium Purity of Platinum</p>	<p>SPEC-005 using ICP-OES</p>
<p>- Ruthenium Powder</p>	<p>Aluminium, Antimony, Arsenic, Bismuth, Boron, Calcium, Chromium, Cobalt, Copper, Gold, Iridium, Iron, Lead, Magnesium, Manganese, Nickel, Osmium, Palladium, Platinum, Rhodium, Silver, Tellurium, Tin, Zinc Purity of Ruthenium</p>	<p>Documented In-House Method SPEC-003 using direct reading spectrometry</p>
<p>- Precious Metal Bearing Residues</p>	<p>Loss on drying</p>	<p>Documented In-House Method CHEM-001</p>



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PRECIOUS METALS (cont'd)	<u>Chemical Tests</u> (cont'd)	
	Platinum, Palladium, Rhodium, Ruthenium, Iridium, Gold, Silver	Documented In-House Methods: CHEM-004 using peroxide fusion followed by ICP-OES CHEM-007 using hot plate aqua regia dissolution followed by ICP-OES
- Precious Metal Bearing Scraps and Residue	Palladium	Documented In-House Methods: CHEM-009 using ICP-OES
- High Grade Precious Metal Scraps	Loss on ignition/reduction	Documented In-House Method CHEM-003 using Hydrogen reduction
- High Grade Platinum and Palladium Scraps	Platinum, Palladium	Documented In-House Method CHEM-006 using hot plate aqua regia digestion followed by ICP-OES using difference calculation
	END	