

<b>Material Safety Data Sheet</b>	<b>Anode Slimes</b>
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**SUPPLIER DETAILS**

<b>Supplier Name:</b>	Palabora Copper (Pty) Ltd PO Box 65 1 Copper Road Phalaborwa, 1390 South Africa	<b>Emergency Tel No:</b>	+27 (0)15 780 2666
<b>Address:</b>	Manager: Environment & SHEQ MS	<b>E-Mail Address:</b>	<a href="mailto:palabora.msds@palabora.co.za">palabora.msds@palabora.co.za</a>
<b>Responsible for updating MSDS:</b>		<b>Telephone Number:</b>	+27 (0)15 780 2911
		<b>URL / WebPages:</b>	<a href="http://www.palabora.com/">http://www.palabora.com/</a>

**1. PRODUCT IDENTIFICATION**

<b>Chemical Names and Synonyms:</b>	<b>UN Number:</b>
<b>CAS Number:</b>	<b>NIOSH Number:</b>

**2. COMPOSITION**

Contains (at varying concentrations) - Silver, Gold, Platinum, Palladium, Selenium and Tellurium

**3. HAZARDOUS IDENTIFICATION**

**Symptoms of overexposure for each potential route of exposure**  
 Inhaled - Coughing  
 Contact with skin or eyes - Possible eye irritation from dust particles; wear eye protection  
 Absorbed through skin - N/A  
 Swallowed - N/A

**Health effects or risks from exposure**  
 Acute - None  
 Chronic - Excessive inhalation over long period may cause harmful irritation; use mask suitable for nuisance dust.  
 Target Organ – None

**4. FIRST AID MEASURES**

<b>Inhalation:</b>	Induce coughing
<b>Skin contact:</b>	Harmless
<b>Eye contact:</b>	Flush with plenty of running water for 10 minutes. See medical doctor if particles are still lodged in the eye
<b>Ingestion:</b>	Drink plenty of water. Contact a medical doctor
<b>Drink.</b>	

**5. FIRE FIGHTING MEASURES**

Flash point: Anode Slimes is an inorganic, fully oxidized, non-flammable and non-combustible material.

**6. ACCIDENTAL RELEASE MEASURES**

Use - Area should be well ventilated. Prevent flakes from entering the eyes. Do not inhale dust.  
 Personal protective equipment (minimum required) - Use eye protection to prevent particles from entering eye. If dust levels are high - use a dust mask (FFP2).  
 Spill response procedures - (include employee protection measures) - Vacuum clean or sweep material, use dust masks suitable for nuisance dust (FFP2) and eye protection.

**7. HANDLING AND STORAGE**

**Handling:**  
 Ventilation and engineering controls: maintain dust level below TLV.  
 Respiratory protection (type): masks suitable for nuisance dust (FFP2).  
 Eye protection (type): protective goggles or similar.

**Storage:**  
 Maintain good housekeeping to avoid transient dust.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit, for emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.

**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Lumpy brown/black powder, usually in a damp or wet form

Contains (at varying concentrations) - Silver, Gold, Platinum, Palladium, Selenium and Tellurium

**10. STABILITY AND REACTIVITY**

Anode slimes is stable.

**11. TOXICOLOGICAL INFORMATION**

**Additional toxicology:**

Solmonella typhirmurium mutagenicity: Not mutagenic at extract concentrations < 1 500g/l

From (Xenopus laevis) embryo teratogenicity: 48 h ECo: 125 mg/l, 48 h EC50: 645 mg/l

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity:**

Daphnia pulex lethality: 48 h ECo: 0.78 mg/l, 48 h EC50: 2.7 mg/l

Algal (Selenastrum capricornutum) growth inhibition: 72 h ECo: 6.3 mg/l, 72 h EC50: 13 mg/l

Bacterial (Pseudomonas putida) growth inhibition: 6 h ECo: 781 mg/l, 6 h EC50: 29 g/l

Frog (Xenopus laevis) embryo lethality: 48 h ECo: 125 mg/l, 48 h EC50: 773 mg/l

**13. DISPOSAL CONSIDERATIONS**

Anode slimes containing waste is normally collected and recycled to recover the precious metal content. Should waste disposal be deemed necessary, follow local regulations.

**14. TRANSPORT INFORMATION**

This material is not hazardous (per 49 cfr 172.101) by the US department of transportation.

Proper shipping name: not applicable.

Hazard class number and description: not applicable.

UN identification number: not applicable.

Packing group: not applicable.

DAT label(s) required: not applicable.

**15. REGULATORY INFORMATION**

Anode slimes may be covered by the reporting conventions of some states.

**16. OTHER INFORMATION**

**DISCLAIMER**

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors or omissions or the consequences thereof. It is the user's obligation to determine the conditions of safe use of the material, all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product.