

**Specification of Competency Standards**  
**for the Jewellery Industry**  
**Unit of Competency**

Functional Area - Quality Management

Title	Retrieve materials/refine gold
Code	108985L3
Range	This unit of competency is applicable to practitioners working in the precious metal retrieving/gold refining department/laboratory in the jewellery industry. Practitioners should be capable of making analysis. They should be able to retrieve and refine the consumed precious metals lost during the daily manufacturing operations in jewellery manufacturing worksites.
Level	3
Credit	9
Competency	<p>Performance Requirements</p> <p>1. Know about precious metal retrieving and refining</p> <ul style="list-style-type: none"> <li>• Know about the definition and causes of gold loss <ul style="list-style-type: none"> <li>○ Loss of fineness <ul style="list-style-type: none"> <li>▪ Colour deviation</li> <li>▪ Refining loss</li> </ul> </li> <li>○ Loss during jewellery making <ul style="list-style-type: none"> <li>▪ Residue</li> <li>▪ Air diffusion</li> <li>▪ Maintenance loss</li> </ul> </li> <li>○ Other types of loss <ul style="list-style-type: none"> <li>▪ Quality deviation of raw materials</li> <li>▪ Loss during transportation</li> </ul> </li> </ul> </li> <li>• Know about gold shred retrieval and treatment in jewellery manufacturing worksites, including: <ul style="list-style-type: none"> <li>○ Casting/melting crucibles</li> <li>○ Casting gypsum, waste residue and wastewater</li> <li>○ Discarded and consumed materials after grinding and polishing</li> </ul> </li> <li>• Know about the retrieval and treatment of waste products with debris, gold shreds and dust mixed up in jewellery manufacturing worksites, including: <ul style="list-style-type: none"> <li>○ Rubbish on the floor</li> <li>○ Precipitants in the washing basins</li> <li>○ Dust/Sewage</li> </ul> </li> <li>• Know about the retrieval and treatment of cyanide solutions, including: <ul style="list-style-type: none"> <li>○ Bombing solutions</li> <li>○ Electroplating solutions</li> </ul> </li> <li>• Know about environmental protection methods, such as treatment of nitrogen oxides and recycling methods, as well as the Hong Kong Dangerous Goods Ordinance and environmental protection ordinances</li> </ul> <p>2. Master metal retrieving and gold refining</p> <ul style="list-style-type: none"> <li>• Recycle worksite waste according to established treatment methods</li> <li>• Master the removal of impurity substances before gold refining <ul style="list-style-type: none"> <li>○ Applying magnetic iron</li> <li>○ Gold washing method <ul style="list-style-type: none"> <li>▪ Gold solution</li> <li>▪ Gold sand</li> <li>▪ Casting</li> <li>▪ Forming</li> </ul> </li> <li>○ Pickling</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>• Master the retrieving and refining methods in worksites, including:             <ul style="list-style-type: none"> <li>○ Acid leaching</li> <li>○ Extraction by nitric acid</li> </ul> </li> </ul> <p>3. Professionalism</p> <ul style="list-style-type: none"> <li>• Strictly comply with the safety guidelines and codes of practice of the Dangerous Goods Ordinance and Hong Kong's environmental protection ordinances when working on retrieving materials/refining gold</li> <li>• Adhere to professional ethics to carry out material retrieving/gold refining, and prevent any abuse or corrupt practices such as abusing or misappropriating the assets of the organization and theft</li> </ul>
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> <li>• Able to retrieve/refine the precious metals lost during daily manufacturing operations in jewellery manufacturing worksites according to the working procedures and relevant legislations, including the rubbish, and discarded and consumed items found in factories; and</li> <li>• Give clear safety instruction to subordinate staff, and effectively retrieve and refine precious metals.</li> </ul>
Remark	