Mercury usage in Small Scale Jewellery Manufacturing Sector (SSJS) in Sri Lanka and introducing Non-Mercury, Environmentally Friendly Alternative

Assessing the Mercury Usage in Small Scale Jewellery Manufacturing - A detailed study from Sri Lanka

There are three different types of groups involved in waste gold refining using mercury in SSJS:

a) Goldsmiths
b) Waste gold separators
c) Street cleaners

People engaged in small scale jewellery sector use mercury to extract the gold from the waste

Waste Gold Separation Process

- Collecting gold containing dust particles
- Roasting
- Cooling & Magnetic Separation
- Burning the Amalgam
- Amalgamation
- Adding Nitric acid, Heating & Washing

Exposure Assessment of Mercury in Small Scale Jewellery Manufacturers in Sri Lanka

Develop and introduce a socially acceptable non-mercury alternative method for waste gold separation in Small Scale Jewellery Sector

Evaluation of the Gold Separation Method

- Grounded gold dust
- Adding chlorine to gold dust
- Gold dissolving
- Adding reducing agents (SMBC)
- Recovered Gold
- Heating
- Adding gold to crucible
- Precipitation of gold

Hypochlorite method for extraction of gold is recognized as the best method in terms of environmental friendliness, health and cost effectiveness

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