ELECTROLYTIC REFINING

Gold Puification Equipment

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ELECTROLYTIC REFINING

Silver Puification Equipment

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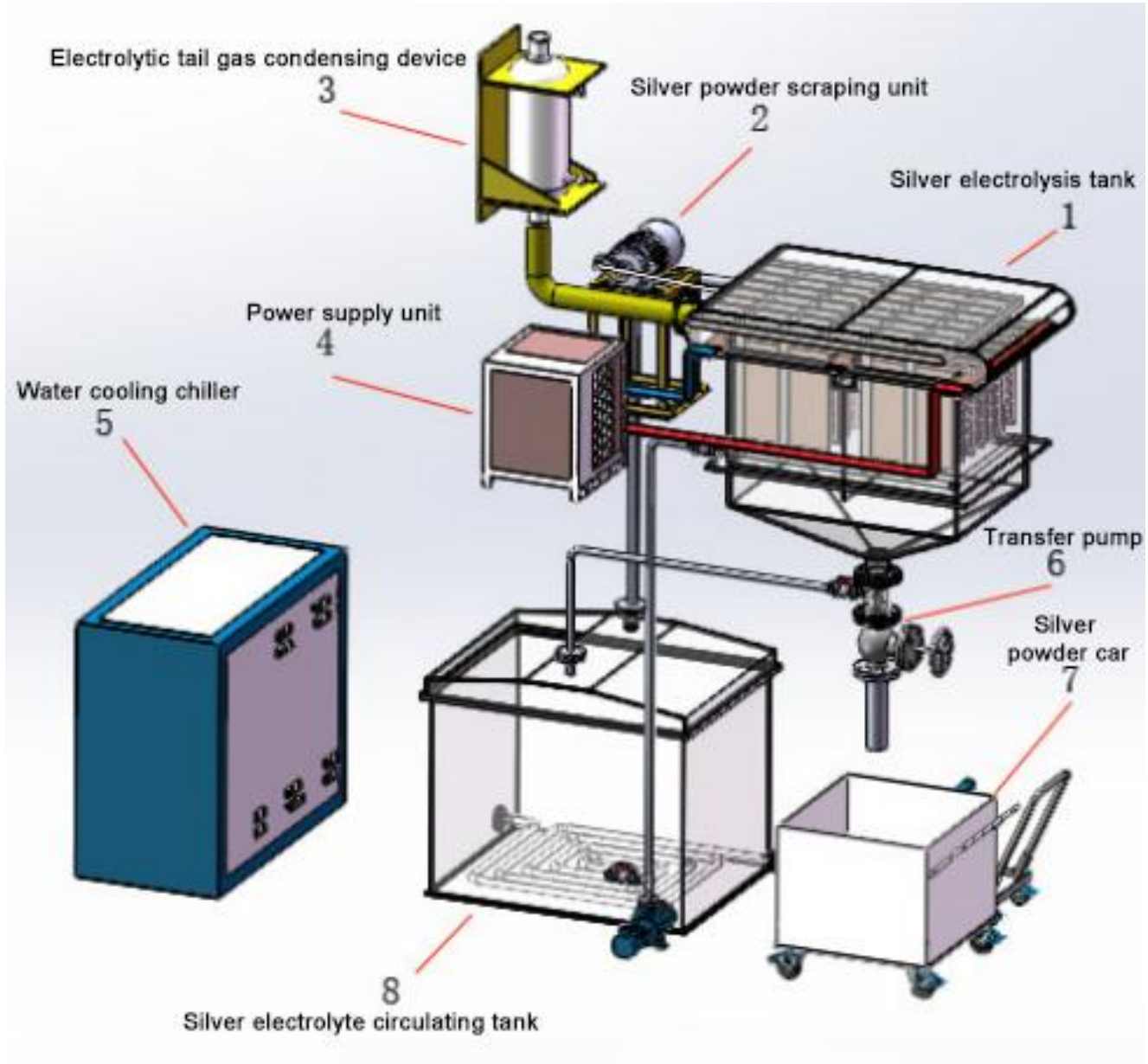
Details

Layout Diagram(Can be Customized)



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Comparison Table

Feature	Aqua Regia Method	Electrolysis Method
Process Type	Chemical dissolution	Electrochemical process
Chemicals Used	HNO_3 + HCl (3:1 ratio)	Acidic/alkaline electrolyte (e.g., H_2 SO_4)
Suitable Metals	Au, Pt, Pd	Au, Ag, Pt (varies by setup)
Purity Achievable	99.5%-99.99%	99.9%-99.999%
Speed	Fast (hours)	Slow (days for large batches)
Energy Consumption	Low (room temp.)	High (requires electricity)
Waste Production	Toxic fumes (NOx, Cl_2), acidic waste	Less chemical waste, metal sludge
Safety Concerns	Highly corrosive, toxic gases	Electrical hazards, electrolyte handling
Equipment Cost	Low (glassware, fume hood)	High (power supply, specialized cells)
Scalability	Suitable for small-medium batches	Better for industrial-scale production
Byproduct Recovery	Requires additional steps	Easier (e.g., anode slime collection)
Skill Requirement	Moderate (acid handling experience)	High (electrochemistry knowledge)

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Features

- **High Purity** – Produces metals up to 99.99% purity (e.g., silver and gold electrolysis).
- **Scalability** – Ideal for large-scale operations (e.g., industrial gold/silver refining).
- **Less Chemical Waste** – Reduces reliance on acids like aqua regia, minimizing environmental impact.
- **Automation-Friendly** – Continuous processing with minimal manual intervention.

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Application

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