

Precious Metal Recovery & Refining Equipment | 10 kg/day

Silver Electrolysis Refining Machine

80 to 92.5 percent scrap silver taken to 9999 on 10 percent dilute nitric acid alone.



A PP and titanium electrolysis cell that dissolves 925 and lower-grade silver in 10 percent dilute nitric acid, then reduces the silver back onto a rotating cathode at 9999 purity. 10 kg/day standard, 50 kg/day or customised, 1 kW.

The problem it is built for

Most small refiners either sell scrap silver at an assay discount or run a multi-step chemical refine that needs equipment they do not have. One cell, one reagent and a day gets the same 9999 result in-house, and the margin stays with the workshop.

Published specification

Parameter	Value
Product name	Silver electrolytic refining machine
Brand	XHF
Function	Refining silver with a purity of 90% to 99.99%
Input material	Waste silver of 80% to 92.5% purity
Capacity	10 kg/day (50 kg/day or customised)
Voltage	220 V / 380 V
Power	1 kW
Material	PP + titanium
Core components	PLC, pump, motor
Reagent	10% dilute nitric acid
Single package size	73 x 58 x 103 cm
Single gross weight	77 kg

Parameter	Value
Warranty	1 year
Supply ability	600 sets per year

Silver Electrolysis Refining Machine - features and applications

What is built into it

Feature	What it does
One reagent, not a reagent programme	10 percent dilute nitric acid is the whole chemistry. Copper, zinc and the other impurities dissolve; the silver is recovered electrolytically onto the cathode.
Four-round titanium baskets	Old 925 jewelry goes straight into the titanium baskets. Titanium is what survives the nitric acid without contaminating the bath.
Rotating cathode	Silver in solution is reduced and adsorbed onto a rotating cathode, which is what keeps the deposit loose enough to harvest instead of welding itself to the plate.
9999 from 90 percent feed	Feed below 90 percent needs more than one pass. From 90 percent and up the published result is 99.9 or 99.99 percent in a single refine.
No waste gas, no high-risk step	The source describes the whole route from waste silver to 9999 silver as achievable with dilute nitric acid alone, with no waste gas and no high-risk operation.

Where it is used

- Jewelry manufacturing: silver scrap, filings and defective pieces refined back to high-purity metal
- Electronics: silver recovered and purified from circuit boards, connectors and components
- Photography and imaging: silver extracted from photographic fixer and other chemical solutions
- Electroplating: silver refined out of plating baths, drag-out tanks and rinse waters
- Precious metal recycling plants processing mixed metal feed

Questions buyers ask

What purity of feed does it need?

It is designed for waste silver of 80 to 92.5 percent. Above 90 percent it takes the metal to 99.9 or 99.99 percent; below that, the source states the bar needs refining several times.

What chemicals do I have to buy?

10 percent dilute nitric acid. That is the published potion ratio and the only reagent named in the process.

What throughput can I expect?

10 kg/day as standard. 50 kg/day and other capacities are listed as available or customised.

How big is the shipped unit?

73 x 58 x 103 cm, 77 kg gross, wooden box packing, dispatched from Shenzhen.

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