

Precious Metal Recovery & Refining Equipment | 3-4 kg/24h

Copper Electrolysis Refine Machine

Scrap copper anodes in at 80 percent, cathode copper out at up to 99.99 percent.



An automatic copper electrolysis refining cell: impure 80 percent copper as the anode, titanium basket and cathode sheet with scraper, copper sulfate electrolyte, a 1000 A / 12 V rectifier and 15 kW of connected load in a 1300 x 800 x 850 mm PP tank.

The problem it is built for

Copper-bearing scrap from a jewelry or plating operation is usually sold at a discount because nobody on site can certify what is in it. Refining it to cathode copper on the premises turns an assay argument into a weighed, saleable product.

Published specification

Parameter	Value
Product name	Copper electrolytic refining machine
Brand	XHF
Function	Refining copper with a purity of 80% to 99.99%
Capacity	3 to 4 kg/24h (customisable)
Dimension	1300 x 800 x 850 mm
Material	PP + titanium basket + copper sheet
Voltage	380 V / 50 Hz
Rectifier	1000 A / 12 V
Power	15 kW
Weight	500 kg
Electrolytic solution	Copper sulfate solution
Cathode	Cathode sheet with scraper
Anode	Impure 80% copper with titanium basket
Pump	Acid and alkali corrosion resistant circulation pump
Core components	PLC, motor, pump
Warranty	1 year

Copper Electrolysis Refine Machine - features and applications

What is built into it

Feature	What it does
Anode dissolves, cathode grows	Impure 80 percent copper is the anode and a titanium plate the cathode. The dissolved copper redeposits as metallic copper at 95 to 99.9 percent.
Running cost published, not estimated	With the electrolyte held at 10 to 20 grams of copper per litre, the electricity budget is 3000 to 3500 kWh per tonne of copper. Lower copper content in the bath means higher consumption per tonne.
15 kW for the whole refine	Intelligent electrolysis control keeps the draw at 15 kW, which is a modest load for a process that ends at 99.9 percent.
Fully anti-corrosion build	PP tank, titanium basket, acid and alkali resistant circulation pump. The design assumption is continuous service in a copper sulfate bath.
Cathode sheet with scraper	Deposited copper is scraped off the cathode rather than requiring the plate to be pulled and stripped by hand.

Where it is used

- Metal recycling plants refining scrap copper to cathode grade
- Jewelry and plating operations recovering copper from their own waste streams
- Mining and metallurgy projects needing a small-scale refining step
- Manufacturing sites producing copper-bearing offcuts in volume

Questions buyers ask

What copper content does the anode need?

More than 80 percent, with as little as possible of the miscellaneous metals that shorten the working life of the electrolyte. Anode size is made to your drawings.

How often does the electrolyte need changing?

It depends on the cleanliness of the feed. Low-copper, high-impurity material can need a solution change every refine; clean high-copper blocks let the solution be reused several times.

What determines the final purity?

The source is explicit: cathode copper purity depends on the cleanliness of the electrolyte. The range quoted is 95 to 99.9 percent, with up to 99.99 percent stated for the function.

Can the capacity be increased?

Yes. 3 to 4 kg per 24 hours is the standard build and the capacity is listed as customisable.

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