



THE ULTIMATE
GREEN TECHNOLOGY



DRIVING CHANGE IN THE PRECIOUS METAL INDUSTRY

ALS – AcidLess Separation® by IKOI is a revolution in the metal refining industry. It achieves silver and gold separation without any chemicals.

The ALS – AcidLess Separation® is the safest and most sustainable way to pre-refine a wide range of feedstocks such as doré from mining, jewellery scraps or by-products of other refining processes.

This **Green Technology** has obvious benefits for the environment and the communities, as well as a positive effect on the economics of the industry.



ALS- AcidLess Separation® is a pre-refining equipment to remove silver and volatile elements from Au/Ag/Cu alloys using vacuum distillation technology.

The exceptional capabilities of ALS – AcidLess Separation® technology are essential to reduce silver content on Au/Ag/Cu alloys without any chemicals and without any by-products.

In this way, the alloy can be easily dissolved in a traditional Aqua Regia process or refined using gold electrolysis.



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THE COMPACT PLANT:

Features and Benefits:

- Completely automatic
- No metal loss
- No by-products that need further treatment
- Low operating costs
- Safe and easy to operate
- Efficient and flexible in treating different feedstock
- Fast processing time
- Green and sustainable technology
- Compliance to Industry 4.0.

The ALS – AcidLess Separation® is available in different models and sizes, to suit every specific need of the precious metal industry:



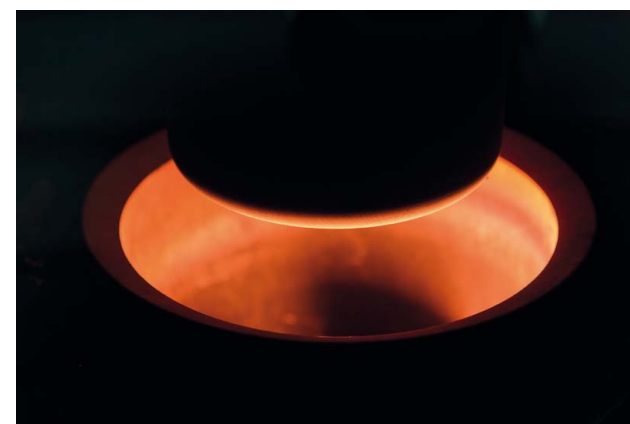
01 Single or Multiple condenser*

Depending upon feedstock composition and customer requirements, the ALS – AcidLess Separation® can be equipped with single or multiple condensers. Multiple condensers are often used to separate impurities in one stage and silver on a second and third stage, depending on the silver quantity in the feedstock.



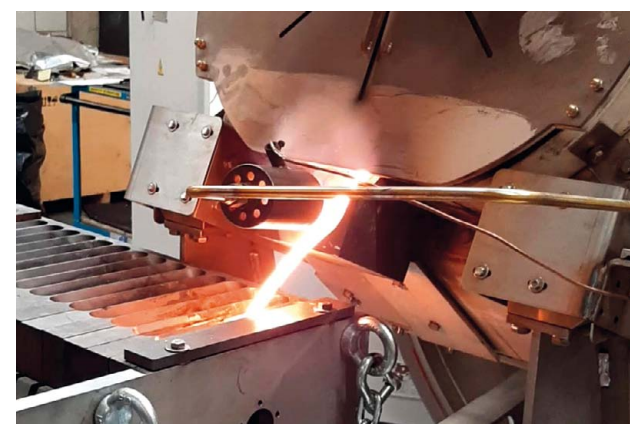
02 Fast Cooling Device*

In order to shorten the process cycle a fast cooling device can be installed on the ALS – AcidLess Separation®. The fast cooling device is an automatic system with graphite insert that can halve the cooling time at the end of the evaporation, increasing the daily productivity of the plant.



03 Crucible Tilting System

The ALS – AcidLess Separation® can be equipped with a tilting crucible. With the Tilting system, after the evaporation, the molten metal in the crucible is directly used to cast grains or anodes for the next refining stage. This solution effectively reduce the processing steps to achieve pure gold, with advantages in terms of productivity and cost.



*Multiple condensers and Fast cooling device not available with Tilting version.

PATENTED GREEN TECHNOLOGY

The ALS – AcidLess Separation® system is the result of years of Research and Development and field experience. The plant key technology (Worldwide Patented) is the combination of controlled evaporation under vacuum and the condenser design that is capable to separate volatile components and silver and deposit them in solid metal form. The plant does not need any additional component or chemicals for the process, therefore no by-products are produced.

The process is simple, efficient and environmentally friendly.

HIGH OPERATIONAL EFFICIENCY

The ALS – AcidLess Separation® has very low operating cost and fast processing time. These two features, combined with the capability to avoid any precious metal loss, allow the users to achieve an exceptional operational efficiency.



TECHNICAL DATA

	ALS 30		ALS 60		ALS 100		ALS 125		ALS 175	
Fast Cooling option	Base	Tilting	Base	Tilting	Base	Tilting	Base	Tilting	Base	Tilting
Feedstock capacity per batch (kg)**	30	30	60	60	100	100	125	125	175	175
Multiple condenser option	✓	-	✓	-	✓	-	✓	-	✓	-
Fast Cooling option	✓	-	✓	-	✓	-	✓	-	✓	-
Tilting device option	-	✓	-	✓	-	✓	-	✓	-	✓
Weight Loss g/Kg	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01
Crucible Material	Graphite									
Heating technology	Induction									
Power Supply	230/400V 3-ph 50-60 Hz									

IKOI is the leader in the pyrometallurgical processes for the precious metals refineries, mints and jewellery market, thanks to our technology for vacuum distillation, melting & casting, heat treatments and crystallization.

Our Vision is to create a Safe, Efficient and Green way to Process Precious Metals and our Mission is to bring Innovative and Sustainable Technology to Precious Metal Industry.

With more than 300 plants installed in more than 50 countries, we are a reference point for the industry.