



METALS

SPECIAL OXIDE PILOT PLANT

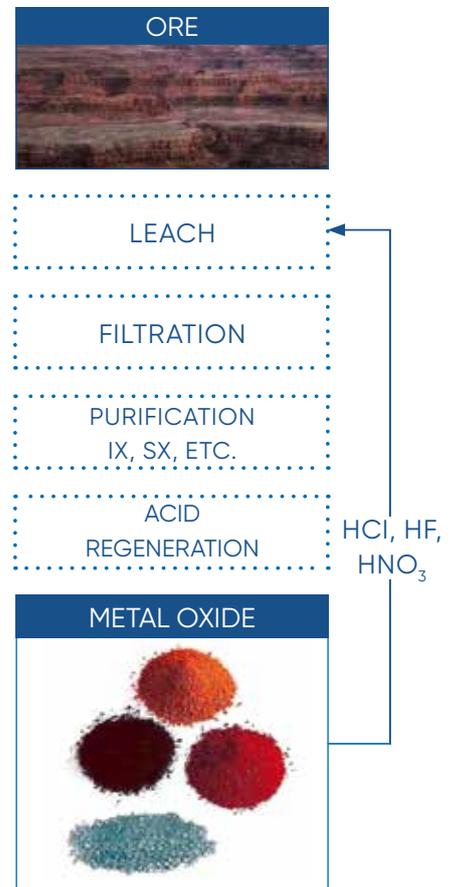
**DEMONSTRATE YOUR PROCESS
WITH ANDRITZ SPRAY ROAST TECHNOLOGY**

ANDRITZ

ENGINEERED SUCCESS

Experts in process development

Are you looking for a closed loop leaching process? Do you have unused metal ore fractions or solutions? Together we develop your process and prove technical feasibility on a pilot scale. We produce valuable metal oxide samples for product demonstration and further investigation. Benefit from our expertise!



FEATURES

- Spray roast acid regeneration pilot plant
- Test production of metal oxides (Fe, Mg, Co, Ni, Mn, Al, special and mixed oxides)
- Regeneration of HCl, HNO₃ and HF
- Modular design to adapt for your specific test requirements
- Capacity: 40-70 l/h of metal solution (typical 100g Me/l)
- Plant location: St. Pölten, Austria



DECOMPOSITION IN THE REACTOR (EXAMPLE)

Material	In	Out
Iron	$2 \text{FeCl}_2 + 2 \text{H}_2\text{O} + \frac{1}{2} \text{O}_2$	$\text{Fe}_2\text{O}_3 + 4 \text{HCl}$
Nickel	$\text{NiCl}_2 + \text{H}_2\text{O}$	$\text{NiO} + 2 \text{HCl}$
Cobalt	$3 \text{CoCl}_2 + 3 \text{H}_2\text{O} + \frac{1}{2} \text{O}_2$	$\text{Co}_3\text{O}_4 + 6 \text{HCl}$



Processed feed solutions

ESTABLISHED TECHNOLOGY FROM STEEL PICKLING PROCESS FOR MAGNESIUM OXIDE, NICKEL OXIDE, COBALT OXIDE, ALUMINUM OXIDE, MIXED OXIDES, AND OTHERS

HYDROCHLORIC ACID REGENERATION PLANTS

Over 200 plants built
Spray roaster or fluid bed type
Up to 20,000 l/h single plant capacity

PYROMARS: MIXED ACID REGENERATION PLANTS (HNO₃ + HF)

22 plants built
Special roaster type
Up to 8,500 l/h single plant capacity

METAL OXIDE PLANTS

18 plants built
Special roaster type
Up to 25,000 l/h single plant capacity



mixed oxides

ferrite **Ni**

TiO₂ serpentine

mining processes

magnesia

waste processing

FeCl₃ **Fe**

ferric chloride

Mg iron

synthetic rutile

ore beneficiation

Mn **Al**
alumina **FeCl₂**

cobalt

ilmenite nickel



ENGINEERED SUCCESS FOR FLAT PRODUCT PROCESSING

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ANDRITZ

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