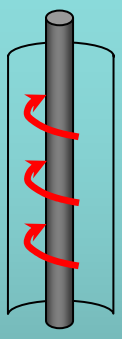

EMEW® ELECTROWINNING FOR PROFIT

EMEW®

COPPER REFINERIES

Tankhouse Bleed & Waste Streams

Electrometals Technologies Limited

EMEW® is a CLEAN, SAFE & EFFICIENT alternative to liberators. EMEW® technology delivers the following benefits:

- No sludge handling & disposal costs
- No smelting costs
- Reduced operational expenses
- Reduced capital cost
- Higher copper recovery rate
- High copper purity
- Reduces and captures arsine gas
- Complete capture of acid mist
- Modular plant
- Retrofit to existing liberator circuit
- High efficiency at low concentration levels

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COMPARATIVE CHARACTERISTICS

EMEW® simplifies the process of recovering metals by electrolysis (electrowinning). The basic principles of electrowinning are applied in many mining and metal treatment plants around the world. However, in conventional usage, the process is restricted in application due to limitations in operating versatility and high capital cost.

EMEW® extends the versatility and usage of electrowinning well beyond the capabilities of conventional plants.

	Liberator	EMEW®
Current Density	MODERATE	HIGH
Current Efficiency	LOW	HIGH
Total Gas Capture	NO	YES
Sludge Production	YES	NO
Sludge Handling	YES	NO
Acid Mist	YES	NO

Before the development of EMEW® in the early 90's, electrowinning was performed in open tanks using flat sheet electrodes. These units lack flexibility to changes in the metal concentration, or solution characteristics; they are expensive to construct and do not suit smaller scale applications. In addition, they typically emit noxious fumes generated by the electrochemical process.

In contrast the EMEW® technology delivers a major improvement in electrowinning efficiency, suits modular construction at all scales and captures all acid mist and gases for safe handling and disposal.

The EMEW® technology is ideally suited to a bleed stream recovery application, as very high efficiency is maintained down to very low levels of copper concentration. This results in maximum copper recovery, whilst maintaining cost effectiveness in the process.

EMEW® outperforms conventional electrowinning technology through a simple process of accelerating the rate at which metal ions are presented to the surface of the cathode. This significantly increases plant efficiency resulting in lower cost, higher performance levels, increased process versatility and a variety of other economic benefits.

EMEW

EMEW® is a global entity with affiliate sales & technical support offices in Australia, Brazil, Canada, Chile, Italy, Singapore and USA.

To locate a contact near you, visit our webpage:
www.electrometals.com.au

Electrometals Technologies Limited

EMEW® Product

50 g/l to 30 g/l	99.99+ % Cu
30 g/l to 20 g/l	99.99+ % Cu
20 g/l to 10 g/l	99.99+ % Cu
10 g/l to 1 g/l	98.55+ % Cu

EMEW® Advantage

- Robust Design
- No ventilation required
- Total gas capture
- Recovery in a single step
- Low depletion limits
- Small efficient plant
- Dense cathode not sludge
- Modular construction
- Low maintenance
- No moving parts

The EMEW® technology is capable of recovering many metals including Platinum, Gold, Silver, Nickel, Cobalt, Copper, Tin, Zinc and Cadmium. The broad range of applications to which EMEW® is ideally suited has resulted in EMEW® installations in North America, South America, Europe, Africa, Asia and Australia.

Electrowinning Performance Comparison

Concentration Copper g/l		Liberators		EMEW®		Required Cathode Area for 10 tpd	
From	To	Current Density	Current Efficiency	Current Density	Current Efficiency	Liberators	EMEW®
45	30	300	80	900	90	500m²	150m²
30	20	300	80	900	90	330m²	100m²
20	10	200	60	600	90	660m²	150m²
10	1	200	40	300	90	900m²	270m²
Cathode Area Required For 10 tpd Production =						2390m²	670m²

Electrometals Technologies Limited provides a full range of products and services to the metal recovery industry; from flowsheet development and process engineering to "total package" turnkey projects.

" EMEW cells are equipped with Dimensionally Stable Anodes (D.S.A.®) manufactured by De Nora Elettrodi Network. D.S.A.® is a registered trade mark of D.N.E. S.p.A."
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