# NON-FERROUS METAL WORKS of the WORLD

9th Edition

Metal Bulletin

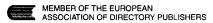
# Non-Ferrous Metal Works of the World

Ninth Edition 2000

Edited by: Anne-Marie Moreno

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#### **Foreword**

If I had to choose one single aspect that has characterised global business in recent years it would surely be the rapid growth in industry concentration. The metals' industries major consumers in the electronic, automotive, engineering and other downstream sectors have followed a path towards consolidation in a bid to provide their customers – the consuming public – with less expensive, high quality goods, supported by a global distribution and service network.

This trend has impacted back up through the supply chain to the makers of basic goods – metals included – who, responding to their need to produce high quality metals and metal items at increasingly lower cost, have in many instances sought economies of scale and more streamlined operations through merger and acquisition activity.

This process was already in train when we published our last Non-Ferrous Metal Works of the World, but there is no doubt that in the past two years or so it has rapidly gained momentum, leading to changes in ownership among some of the world's major established metals producers. At the same time, there have been new entrants to the metals producing arena such as investment funds seeking to pick up low-cost assets, or trading concerns looking to offset narrowing margins through involvement in production facilities.

Following on from the first wave of mergers two-three years ago, we have seen heightened M&A activity in the base metals sector: Grupo México and Asarco, Alcoa and Reynolds and Alcan and algroup, to name but a few. Even in countries like Russia conglomerates such as JSC Russian Aluminium have emerged.

All this has required a thorough overhaul of the Non-Ferrous Metal Works of the World database. The depth and breadth of the directory continues to grow and this ninth edition is no exception. Entries have been extensively updated and we are very grateful to all those companies that took the time and effort to respond directly to our requests for information.

The major industry mergers or take-overs are all at a different stage of integration at time of publication and, from an editorial standpoint, have been dealt with differently. Thus we see that the former Cyprus Amax is now listed as a part of Phelps Dodge, and the big Russian smelters such as Bratsk and Krasnoyarsk are to be found under the Russian Aluminium banner. Conversely, Alcoa and Reynolds are still – for this edition – listed separately, as are Billiton and Rio Algom.

Useful cross-references abound, however, and will point the reader in the appropriate direction, and the "additional information" section at the end of each entry will give an indication as to the status of any merger, acquisition or disposal activity, or indeed name change.

Reflecting the increased openness and move towards internationally accepted standards of corporate practice and governance, companies in areas such as the CIS and China have provided for this edition a greater depth of information than in the past – both on plant and product range as well as contact details. It would seem that today, even companies in the most remote parts of the world are contactable via email.

The metals industry is a global one – in this latest edition of the Non-Ferrous Metal Works of the World there are companies listed in some 100 different countries, and many are transnational in scope. Our front cover photo, for instance, was provided by an Asian company that has producing operations in no less than three continents of the world – Korea Zinc. We are very grateful to the company for providing us with the picture which shows a view of its zinc refining complex at Onsan in South Korea.

As always we would like to hear from readers if they have any supplementary information on their companies or know of new plants in their part of the world that have escaped our canvass.

Ann-Marie Moreno Editor

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We have combined the best SMS and Demag technologies, designs and process technologies to form a wide-ranging complete package. Our eight Divisions provide optimally adapted state-of-the-art plant engineering with efficient automation systems for economical processes which,

at the same time, fulfil the most exacting demands for high-quality products. These activities also result in innovative products for new applications with considerable market potential. Our integrated proposals are all based on the best technologies, extensive know-how and an unsurpassed number of existing installations.

Against the background of the massive changes in the manufacture and marketing of metallurgical products, innovative complete technologies are more important than ever for the growing requirements in the next century. You can reap the benefits of our complete technologies from one source, namely, the least amount of coordination, excellent process reliability and maximum efficiency.

#### **Our Divisions**

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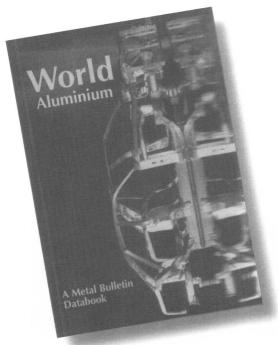
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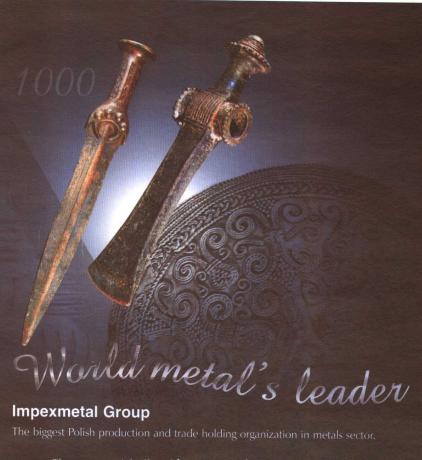
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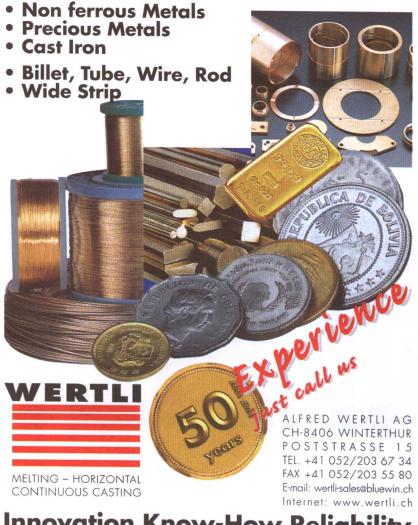
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**Innovation Know-How Reliability** 

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# Do you see environmental safety as a cost, or a sales benefit for your product?

Tightening environmental regulations and a growing customer preference on environmentally sound products and production methods are beginning to affect metals industry world-wide.

With this in mind, Outokumpu constantly strives to make sure that environmental soundness is an integral part of every metals technology product it markets. So you can rest assured that environmental risks leading to financial losses are minimized.

#### The cleanest smelter in the world

Joint efforts between Kennecott Utah Copper and Outokumpu lead to the development of a unique Kennecott-Outokumpu Flash Converting Process. The use of flash smelting and converting allows the company to recover 99.9 % of the sulfur.

#### Saving energy in ferrochrome production

Steel belt sintering technology offers substantial savings in the production of ferrochrome. The use of homogenous sintered pellets reduces energy consumption by 20 % per produced ton, increases chrome recovery by 10 % and offers 15 % higher furnace productivity.

Process is closed, so the carbon monoxide generated

in the furnaces is recovered and used to fuel other processes. Emissions and the need for external energy are therefore considerably lowered.

#### Filtration the natural way

The beauty of nature's own solution to solid-liquid separation lies in its sim-

plicity. Through capillary action only liquid follows through the ceramic filter media. The miniature pores allow no air or solids to penetrate. Filtrate is crystal clear, and energy savings of up to 90 % can be realized, as thermal drying and air blowing are eliminated. Also, these two phases might otherwise cause emission problems.

#### **Technology proven in practice**

Outokumpu technology is tested and perfected at company's own metal production facilities. Common denominators

to all Outokumpu technology are energy savings, lower capital investments or improved productivity, and often all three. Conformity with the environmental approach of using Best Available Technology is another value adding feature as well

For more information about plants, special equipment and technology for mineral processing, extractive metallurgy, continuous casting and metal forming of non-ferrous metals and ferroalloys, please contact us.



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Internet: www.outokumpu.com

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