Zinc from Secondary Sources

EZINEX® Process

Title: The EZINEX® Process – An Innovative System for Zinc Recycling

Paper presented at: National Workshop on Industry and Environment; February 5th-6th, 1999; Ahmedabad, India

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Abstract: Zn bearing materials containing chlorides , fluorides and alkali metals, such as electric arc furnace (EAF) dust, Waelz oxides, galvanizing ashes, bras foundry and converters fumes, are little attractive, both technically and economically, to be processed in an ISP or in a Zn sulphate electrolysis.

The EZINEX Process, based on a new and original electrochemical system, is an opportunity for the treatment of the above described materials. The electrolyte, based on a chloroamino complex, allows the recovery of a high purity zinc cathode and a heavy metals cement that can be processed elsewhere. The iron contained in the leaching residue can be fed back to the EAF furnace.

The EZINEX Process has been initially developed in order to solve in an economical and comprehensive way the environmental problem related to the treatment of EAF dust.

The entity of the problem has accelerated the development of the process and in a few years we passed from laboratory bench scale, to a pilot equipped with an industrial electrolysis cell, to an industrial prototype having a capacity of 2,000 t/y of zinc cathodes

The plant, erected at Ferriere Nord mini mill located in Osoppo – Italy, after about 1 year from the start up, started regularly working and meeting the expected performances. In the meantime other zinc bearing materials have been tested in the plant with positive results.