

# INTERNATIONAL MANGANESE INSTITUTE

Annual Conference

NATURAL MANGANESE DIOXIDE

LUIS MORENO

June, 2002

Shanghai, China

# **NATURAL MANGANESE DIOXIDE NMD**

**The Natural Manganese Dioxide is obtained from the mining of the manganese ore in the form of MnO<sub>2</sub>. There are no chemical processes involved to upgrade the ore. In order not to affect the natural characteristics of the ore, such as the electrochemical properties performed in the dry batteries, only a washing process is normally used by the industry**

## **USES:**

- DRY BATTERY MANUFACTURING**
- PIGMENT IN CERAMIC INDUSTRY**
- ADDITIVE IN ZINC REFINING**

**The use in battery manufacturing represents 80 % of the total use of NMD.**

# Natural Manganese Dioxide

## MARKET SITUATION:

- C-Zn battery production still shows growth. 1-2% per year.
- Restructuring of the battery industry continues. Manufacturing groups are concentrating the production in locations based on economy of scale, efficiency and labor cost.
- Battery Industry more demanding in quality related issues due to strong competence between Zn-C, H.D. and alkaline batteries, as well as the need to have products environmentally friendly.
- Ceramic industry NMD consumption based in the fashion established by architecture.

# Natural Manganese Dioxide

## TREND:

- The NMD demand will be maintained in the medium-long term.
- Demand of Zn-C batteries in the emerging markets, where the purchasing power is not enough to afford the price of the alkaline batteries.
- The battery industry will continue demanding low impurities NMD based on the restrictions to use inhibitors for environmental reasons.

# Natural Manganese Dioxide

## **SUPPLY:**

- The market is being reasonable well covered by the actual suppliers.
- The prices had been showing stability for long time. In the last to years, materials from two different origins, offered at extremely cheap prices, have been causing pressure in the market.