



Clarksville Smelter

Resources for a changing world



Operation at a glance

The Clarksville zinc refinery is located four kilometers southwest of Clarksville, Tennessee, beside the Cumberland River. Clarksville is located within 900 kilometers of the United States' industrial heartland, including Chicago and Detroit. A large portion of the U.S. zinc market lies within one-day delivery distance from the Clarksville smelter by road.

Fast facts...

Location

– Clarksville, Tennessee, USA

Technology

– roast, leach, electrolysis (RLE) smelting

Products

– special high grade (SHG) zinc, zinc alloys and sulphuric acid

Employees

– 244

Production 2011

– 110,000 tonnes zinc metal

Production Capacity

– 122,000 zinc tonnes

OVERVIEW

The Clarksville smelter is a medium scale and relatively modern smelter that was commissioned in 1978.

The Clarksville smelter was specifically designed to recover zinc from the high zinc content, low impurity Tennessee Valley zinc concentrates produced by the Tennessee mines. The Clarksville refinery has a long history of treating these types of concentrates and is logistically very well located for supply by Nyrstar Tennessee Mines. The processing of local concentrates from Nyrstar Tennessee Mines is improving the zinc recovery rate at the Clarksville smelter (owing to low iron content) and has resulted in significant freight savings compared to other facilities.

The Clarksville smelter is currently the only primary zinc producer in the United States and has an established reputation as a supplier of quality SHG zinc and alloys. By-products include cadmium metal, sulphuric acid, copper sulphate, an intermediate copper cementate and synthetic gypsum.

In addition to concentrates, the Clarksville Smelter has traditionally been supplemented with roast oxides as convenient means of introducing additional zinc capacity to the smelter. The commissioning in early 2011 of a new oxide washing facility eliminated the need to import oxide materials from Europe and has allowed the Smelter to treat Local North American sources of material instead.

The Smelter has ISO accreditation for both its environmental management program (ISO 14000) and for product quality (ISO 9001). Located adjacent to the Cumberland River, Nyrstar maintains a 1 km wide buffer zone of wetlands and farming between the river and operating areas. The buffer is managed in cooperation with state wildlife agencies to provide a habitat for native waterfowl and mammals.



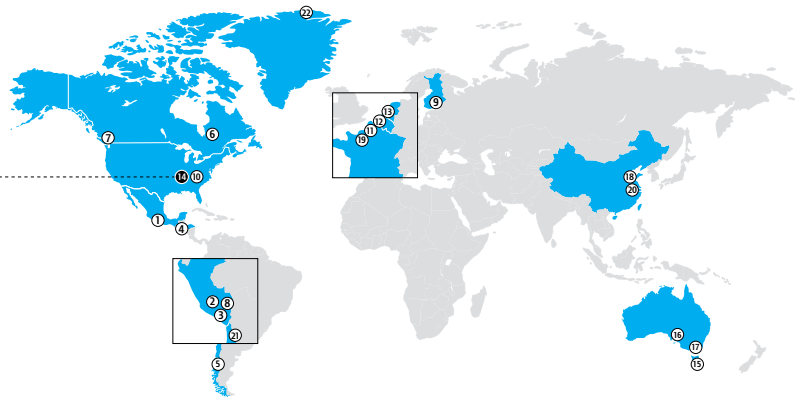
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Clarksville, and the world of Nyrstar

Clarksville, TN, USA



- ① Campo Morado, Mexico
- ② Contonga, Peru
- ③ Coricancha, Peru
- ④ El Mochito, Honduras
- ⑤ El Toqui, Chile
- ⑥ Langlois, Canada

- ⑦ Myra Falls, Canada
- ⑧ Pucarrajo, Peru
- ⑨ Talvivaara (Streaming Agreement), Finland
- ⑩ Tennessee Mines, USA
- ⑪ Auby, France
- ⑫ Balen/Overpelt, Belgium

- ⑬ Budel, The Netherlands
- ⑭ Clarksville, USA
- ⑮ Hobart, Australia
- ⑯ Port Pirie, Australia
- ⑰ ARA (Interest 50%), Australia

- ⑱ Fohl (Interest 50%), China
- ⑲ Galva 45 (Interest 66%), France
- ⑳ Genesis (Interest 50%), China
- ㉑ Herencia (Interest 10.24%), Chile
- ㉒ Ironbark Zinc Ltd. (Interest 26.5%), Greenland

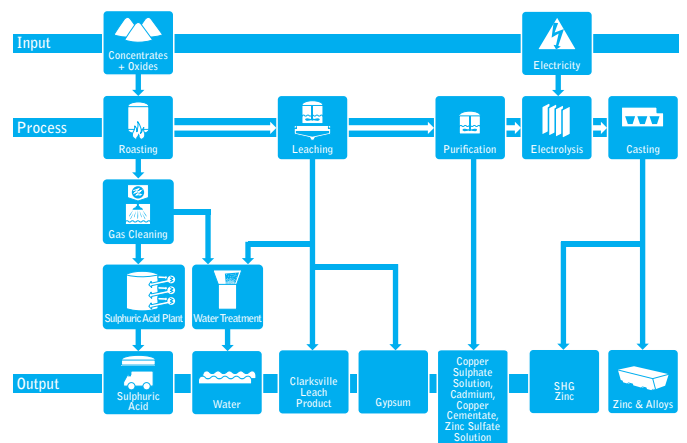
MINES/STREAMING AGREEMENTS
 SMELTERS
 OTHER OPERATIONS
 DEVELOPMENT

THE WORLD OF NYRSTAR

Nyrstar Clarksville is part of Nyrstar, an integrated mining and metals business with market leading positions in zinc and lead, and growing positions in other base and precious metals; essential resources that are fuelling the rapid urbanisation and industrialisation of our changing world. Nyrstar has mining, smelting, and other operations located in Europe, the Americas, China and Australia and employs over 7,000 people. Nyrstar is incorporated in Belgium and has its corporate office in Switzerland. Nyrstar is listed on NYSE Euronext Brussels under the symbol NYR.

Nyrstar is committed to providing a safe environment for our employees, minimising our smelters' and mines' impact on the environment and contributing to the communities in which we operate.

PRODUCTION PROCESS AT CLARKSVILLE



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nyrstar.com