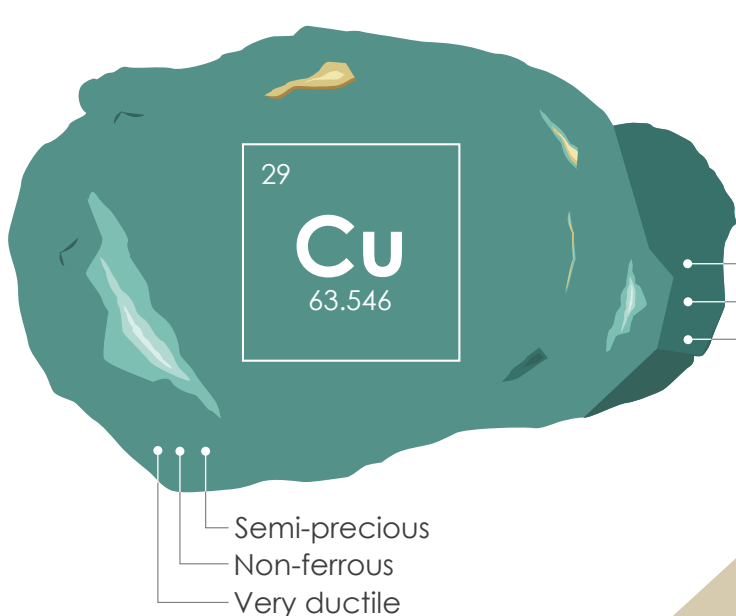


WORLD COPPER PROCESSING

Transforming Copper Ore into a **Refined Product**



Semi-precious
Non-ferrous
Very ductile

Malleable
Corrosion-resistant
Good thermal and electrical conductivity

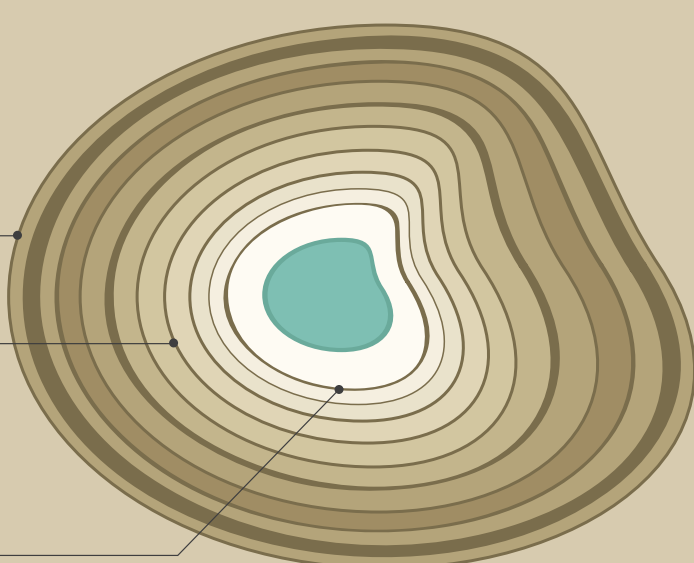
2015 global copper production:
19.1 Million Tons



Chile was the top producer by a landslide, accounting for almost **1/3** of the output.

Of the 19.1 million tons, 3.9 were produced via **Solvent Extraction Electro-Winning (SX-EW)**.

Stats From: The World Copper Fact Book 2016, International Copper Study Group Directory of Copper Mines and Plants - July 2016



PRODUCTION METHODS

Mined copper goes through a variety of processing techniques before it is ready to be made into any copper products. Once mined, higher quality sulphide ores are processed into a more concentrated form, referred to as copper concentrates. This ore type is then refined via pyrometallurgy.

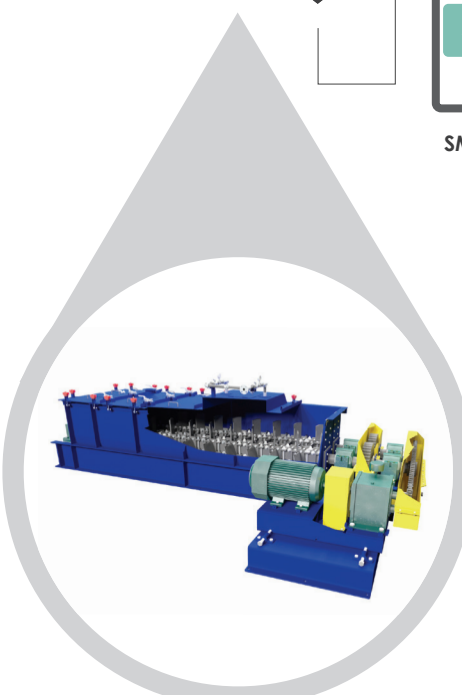
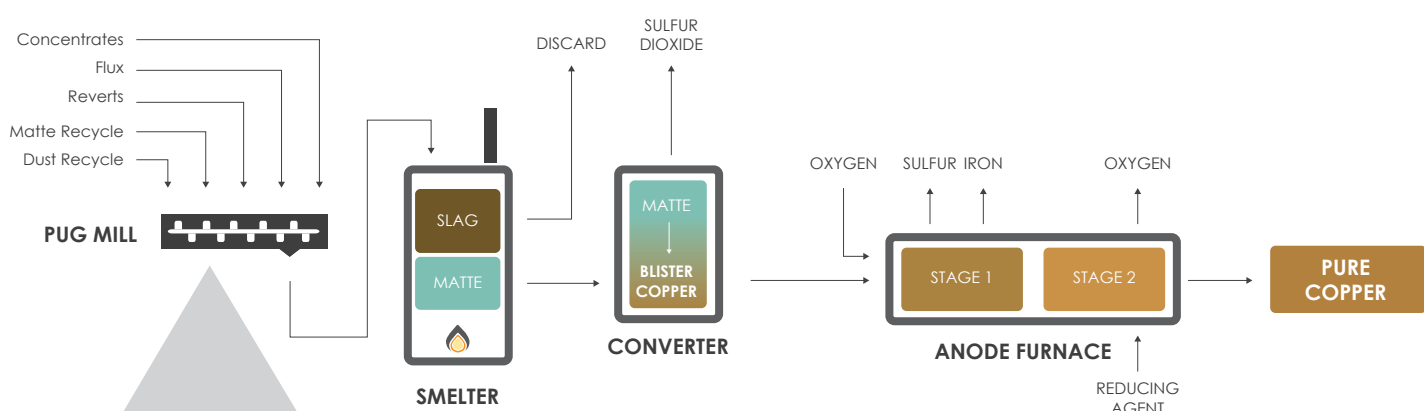
Low-grade sulphide ores and oxide ores are processed via heap leaching and typically refined via the increasingly popular hydrometallurgical approach - SX-EW.

PYROMETALLURGY

AKA: Copper Smelting

Used for: Sulphide Ores

Process Type: Thermal



FEECO Pug Mill

EQUIPMENT SPOTLIGHT: THE PUG MILL (PADDLE MIXER)

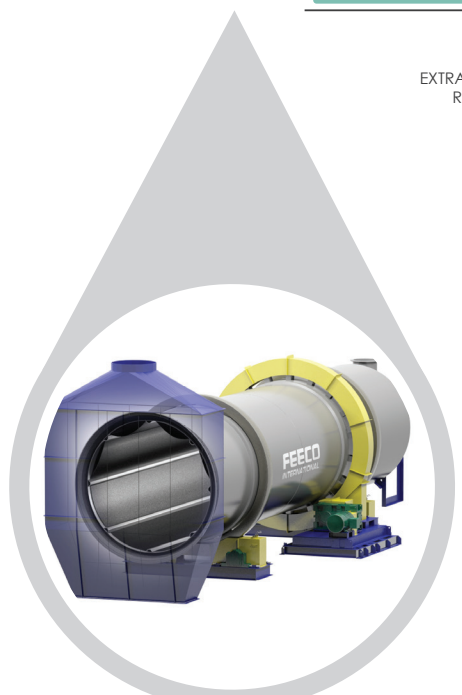
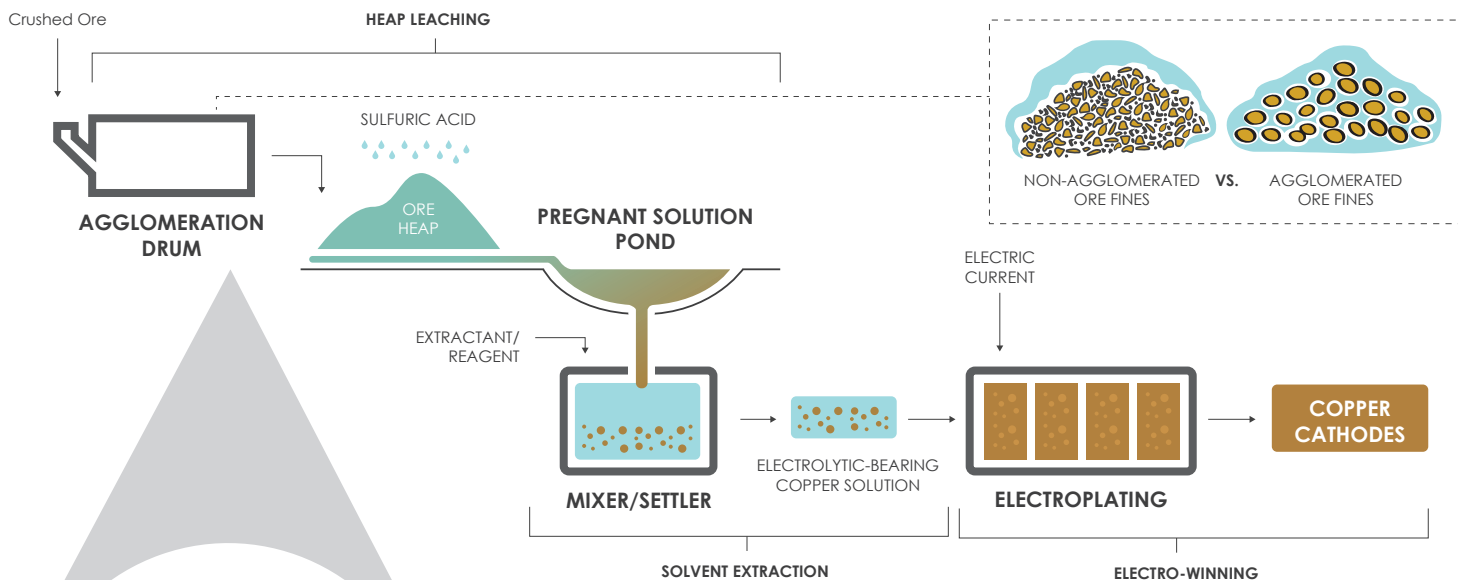
Pug mills serve to mix and condition feed components for the smelter. Mixing not only conditions the agglomerates and de-dusts the material, but it also ensures a uniform product.

Pug mills increase efficiency in the smelting process so much so, that companies often will purchase two mixers (one as a spare). Learn more at: FEECO.com/copper-pug-mills/

HYDROMETALLURGY

AKA: Solvent Extraction Electro-Winning (SX-EW), Copper Heap Leaching, Leach Solvent Extraction Electro-Winning (L-SX-EW)

Used for: Oxide Ores and Low-Grade Sulphide Ores



FEECO Agglomeration Drum

EQUIPMENT SPOTLIGHT: THE AGGLOMERATION DRUM

Agglomeration drums help to maximize recovery rates by making ore fines more uniform in shape and size, which allows the leachate to more effectively percolate through the heap (as seen in the illustration above). The agglomeration step also serves to begin the leaching process prior to the heap. This increases overall efficiency and ultimately, recovery rates. Learn more at: FEECO.com/copper-ore-agglomeration/

COPPER PROCESSING SOLUTIONS

FEECO is a leader in copper processing. We provide custom pug mills for copper concentrates, and agglomeration drums for the heap leaching/SX-EW process. Our agglomeration drums are utilized in some of the world's largest and most environmentally advanced copper mines.

We can also provide all of the handling equipment to support the process.

For more information, contact us today at FEECO.com/contact

