

Langeloth Metallurgical Facility



Ferromolybdenum ready for delivery to customers

The largest ferromolybdenum producer in North America, Langeloth is the first site to commercially convert MoS_2 concentrates to technical molybdenum oxide.

The Langeloth complex, located 40 kilometres (25 miles) west of Pittsburgh, Pennsylvania, is a world-class facility with a long history of producing high-quality metallurgical products used mainly in the steel and chemical industries. The facility has roasting capacity of 35 million pounds of molybdenum per year. Four multiple-hearth furnaces are used for the conversion of molybdenum disulfide concentrates into technical grade molybdenum oxide (tech oxide), which is sold in powder or briquettes or converted into pure molybdenum trioxide or ferromolybdenum. Two other furnaces process spent catalyst material containing other metals.

A large portion of the molybdenum concentrates processed at the Langeloth facility comes from the Corporation's Thompson Creek Mine. The Corporation buys concentrates from other mining companies to process and sell in the market, and it also roasts concentrates on a toll basis for third-party customers.

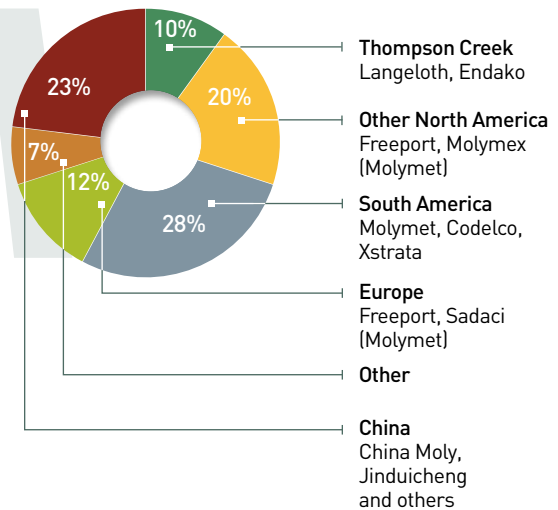
The roasters, which operate at temperatures up to 650°C ($1,200^\circ\text{F}$), convert molybdenum disulfide concentrate (MoS_2) into tech oxide (MoO_3) with a sulfur content of less than 0.1%. The roasters yield gases with sulfur dioxide (SO_2). The sulfur dioxide is

converted to sulfuric acid (H₂SO₄), a byproduct that is sold to industrial customers. As a result of this pollution-control initiative, sulfur dioxide emissions for molybdenum processing at the Langeloth complex have been reduced by more than 99%.

Some of the tech oxide is further processed into ferromolybdenum, an alloy consisting of about 60% molybdenum and 40% iron. Ferromolybdenum is preferred by some steel mills and cast iron foundries in their manufacturing processes.

A portion of the tech oxide produced at the Langeloth complex is converted into a higher oxide grade known as pure molybdenum trioxide. The process involves

World Molybdenum Roasting Capacity



Molybdenum briquette production facilities

sublimation using a special electric furnace where tech oxide is heated until it vaporizes. On cooling, the vaporized oxide returns to the solid state but with virtually none of the impurities inherent in the tech oxide. This pure molybdenum trioxide is used for super alloys, chemicals and catalysts.

The Langeloth facility is the largest ferromolybdenum producer in North America, the first site to commercially convert MoS₂ concentrate to technical molybdenum oxide, and the first site to produce pure molybdenum trioxide by sublimation. The site has 147 acres with an infrastructure to support additional projects.