





Ozark Smelting and Mining Company Plant
Makes Distinctive Landmark on Kansas Plain.



FIRES OF COFFEYVILLE FUSE CHEMICAL MAGIC



Master Chemists like
Vernon Horn guide
Ozark's many intricate
technical processes.

ON the plains of Kansas, there arises a group of towers and shafts that somehow reminds one of a mystic Bagdad, and the chemical magic performed there out-does that of the famous Arabian Nights Metropolis.

Here some 250 men and women, using fire, whirlwinds, and lightning-like charges of electricity for their tools, wrest from nature many pure chemicals and metals needed in our modern life.

In 1906, a small, one-block zinc oxide furnace. Today a plant covering 80 acres, devoted to the production of leaded zinc oxide, lithopone, zinc sulphate, and cadmium metals. S-W's Ozark Smelting & Mining plant history speaks for itself, and is a tribute to the guiding genius of such men as Mr. O. O. Gordon, H. J. Hain, now Vice President of the Sherwin-Williams Co., Robert Brown, W. E. Cortis, Charles E. Deeds, and Ray A. Thomas, the latter having been superintendent since 1936.

A leaded zinc oxide plant at first—1926 saw the addition of facilities for the manu-

facture of zinc sulphate. In 1930 and 31 a lithopone plant was added which had to be doubled in size by 1937 to meet the demands.

For raw ores of lead, zinc and iron Ozark calls on all parts of the west, on Mexico, Canada, and even far away Australia, while its coal, coke, chatts, sulphuric acid, barytes ore and natural gas come from its home State of Kansas and its neighbors, Missouri, Oklahoma and Arkansas.

Materials at hand, the magic begins. First, crushed to uniform size, some ores must be roasted to remove unwanted chemicals. To do this, the crushed ore is fed into a huge steel brick lined roaster consisting of twelve self-supporting refractory brick hearths. As the ore is moved to the center of one hearth, it cascades to the hearth below. The temperature of the ore rises, sulphur is changed to sulphur dioxide and is discharged into the atmosphere. This gas fume carries with it a certain amount of dust, so it is passed through an electrical precipitator where the dust particles are charged with 75,000 volts of electricity, which causes them to collect on steel plates, from which they are returned to the roasters, while the dust-free gas is allowed to escape.

Next the lead, roasted zinc ores, coal, chatts and other ingredients are carefully

weighed and mixed to obtain the desired grade of pigment.

For leaded zinc oxide, the proper mix is placed on a bed of coal in a special furnace. Careful levelling and controlled air blast draft govern the burning so that as the temperature rises the leaded zinc oxide is carried off by fume laden gases, and is collected by means of pipe lines and taken the 750 foot distance to the bag houses. A large fan keeps the fume-laden gases moving, and discharges them into the collection bags, which filter out the pigment and allow the fume-free air to escape. Each bag house contains 800 20" x 30' bags, and can collect 35,000 pounds of finished pigment daily, ready to be packed in bags carrying the familiar label "Ozlo Leaded Zinc Oxide."

For Zinc Sulphate, roasted, sulphur free zinc ores are leached in sulphuric acid. The resulting slurry is pumped through a series of tanks and filters to purify it and remove all suspended solids. This zinc sulphate liquor is then evaporated either by evaporating pans or rotary dryers, leaving a white crystalline cake or granular residue. Crushed and sized it is ready for use in many ways, from the manufacture of rayon to insect sprays.

For lithopone, barytes ore and coke, mixed, crushed and screened, is burned in big 60' rotary kilns to make "black ash." Quenched with water, the "black ash" slurry is filtered and purified to make barium liquor. This is added to zinc sulphate liquor and the resulting precipitate is crude lithopone. This crude lithopone must be calcinated, milled, thickened, filtered and re-dried before final sizing and grinding takes place.

Sounds simple, doesn't it? Guess it is easy when you know how, and Coffeyville sure has the "know how" when it comes to doing chemical magic on a production basis.

CLOSE-UPS ILLUSTRATE SOME OF COFFEYVILLE'S INTERESTING PROCESSES

Moving ore and slag is big job. Here we show "Fat" Beaver and "Mexican" John loading, with Herb Long handling the magic mechanical donkey.

With all the care of a master baker, E. A. Thiele Sr., Roaster Foreman, checks weights of ore cars as they move to their appointed mixing stations.

Busy mixing "furnace charges", we meet Joe Moyo. A popular fellow, Joe spends spare time helping Coffeyville Jr. College students with their Spanish.



