

The Barytes Ore crusher creates a din worse than a million coffee grinders as the boys shovel in the reddish barium ore. Here it is (picture) crushed preparatory to going in to the roasting oven for the first step in transforming the crude ore into barium sulphide. The roasting oven in the picture below consists of two parts. The large cylinder at the rear is motor driven and revolves slowly so as to keep the load in motion. The load consists of the crushed barium ore mixed in certain proportion with coal, this proportion depending upon the chemical analysis of the batch.

The furnace in front throws an intense heat over the tumbling mass back in the cylinder which is maintained for a number of hours. The ore has now changed both in color and in chemical composition. It is now called black ash and the room in the picture below is called the Black Ash Dept. The cylinder is topped so that the heavy doors are at the bottom which you see at the side of the cylinder in the picture. The contents are removed and taken to the tanks.

The Black Ash is now washed with hot water which dissolves out the soluble barium sulphide, one of the two component ingredients which make lithopone. The barium liquor, as it is called, is filtered and put thru a purifying process that is most exacting because upon its purity depends the whiteness and fastness to light of the finished product, lithopone. Few people realize the extent to which our business is built upon intricate chemical processes. The paint mills grinding their daily output are in reality but the final assembling process in the making of paint. Much has gone before.

There are, of course, two types of paint manufacturers. Most companies purchase pigments, oil and other ingredients and are simply formulators and grinders of paint products. Sherwin-Williams stand pre-eminent in the other class because we go right back to the original sources and make our pigments, selling large quantities over and above our own requirements to paint makers all over the country. The making of lithopone is a most interesting example both of the way in which we go direct to Mother Earth for our raw material supplies and of the very complicated chemical processing required to bring the ore thru to the pigment Phil Steyer's boys grind into Flat-Tone Washable Wall Paint.

From our mines in Magdalena, New Mexico, we obtain an ore which we process at our smelters in Coffeyville, Kansas and produce a grade of zinc sulphide that meets our specifications better than any material we could buy on the market. This chemical, as we make it, particularly rich in zinc and quite possibly might not suit the manufacturer of some other line of chemicals nearly as well as the materials generally sold. But our mines produce this ore and our smelters process it in exactly the best manner that will make the highest quality of lithopone.

Years ago painters had few materials to work with than they do now. White lead for example was used for outside house paint, for inside flat wall paint and for enamel undercoaters. It is common to conclude that no single material can do all jobs equally well. Thus patient effort and art have brought about such needed improvements and economies in paint production. Flat-Tone is a tremendous improvement over old lead and oil paint for outside use and S-T Flat-Tone is the specialized paint which is accepted as superior to white lead for interior decorating. There are those who would have us take this wonderful pigment, lithopone, and combine it with zinc and barytes to use for outside painting, but lithopone is a pigment not best suited to outside weather exposure even when strengthened with zinc. Even our perfected lithopone which is fast to light and not subject to darkening characteristic of inferior lithopone is recommended by us exclusively for such interior paints as Flat Wall Paint, Save-Lite Mill Whites, and enamel undercoaters, because lead and zinc paints make better outside paints.

The making of lithopone is a highly technical operation, but we shall try to outline the process simply and briefly so that Channelson readers may have a better appreciation of Flat-

Flat-Rite, Enamel Undercoater and products made upon a base of S-T Lithopone.

There are several batteries of wooden vats such as you see in this picture. Thru one series is passing the purified barium liquor already described. Thru another series is a liquor made from the zinc sulfate prepared down in Coffeyville, Kans, from mine ore taken from our mines in Magdalena, New Mex. This liquor, too, has gone thru a painstaking process of purification and is run into wooden vats to prevent contamination.

These two liquors meet and a chemical reaction takes place which results in the settling out of a white powder which is gathered and placed as a paste in huge furnaces. There it is calcined, or roasted for many hours. When the process is completed the material is withdrawn in cake form and this caked pigment is broken up and fed into the hopper where it is crushed and ground for its final "ordeal" in the high heat "mufflers" you see in the picture below. When you go thru the plant you are shown samples of lithopone after the first roasting to compare with the final product and even untrained eyes can detect the great purity of color and intensity of white in the finished product.

Down in the Liquor room there were a number of tests we witnessed to show how every gallon of the liquor is watched so that no contamination of any kind can slip by which would result in an off shade of lithopone when the product is finished.

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