CHAPTER I

Preparation of Iron Oxide Red Pigment

Pigment grade iron oxide red is of two types - natural and synthetic. The natural iron oxides red pigments are popularly known under the trade names 'Gulf Red', 'Spanish Red Oxide' and 'Red Earth'. Of those, the Gulf Red is the most popular one with an iron oxide content of about 65%. Other natural red oxides are less commonly known. The natural red iron oxides were popular before the advent of synthetic iron oxides.

Synthetic iron oxide reds are prepared chemically and have several advantages over their natural counterparts. They are softer in texture, their particle size and shape can be controlled. They have higher colour strength, opacity and spreading power. They can be obtained in a variety of shades. Last but not least, is their purity. The synthetic iron oxides can be obtained with a purity as high as 99% plus.

Of all the shades of iron oxide red, those corresponding to colours made by a host Coomans company under Bayors 110 and Bayors 220 are the most popular ones. These experimental conditions are described in terms of process flow block diagrams.

Figure-67 is the diagram for Bayors 110 and Figure-68 is the diagram for Bayors 220.
FeCl₂  Ca(OH)₂

AIR

REACTOR (6 hours)

FILTER

FILTRATE REJECT

RESIDUE

DRIER

ROTARY KILN 700-800°C (0.5 to 1.0 hour)

RED OXIDE (BAEYERS 110)

FIG. 87 PREPARATION OF IRON OXIDE RED PIGMENT TO BAEYERS 110.
Figure 88: Preparation of Iron Oxide Red Pigment to Baeyer's 220.