

Under the Konimeter Microscope the particles were rounded in appearance. The "Attapulgius Fines" appeared more crystalline and angular, and had a greater proportion of particles five microns or less in size than did the "Filtrol". The counts indicate that more dust results from dumping Attapulgius Fines than from dumping Filtrol activated clay.

Dumping fifty pound bags of "Milwhite" (90% through 200 mesh), a Texas contact clay, into the feed hoppers to the inductors or mixing chambers is an exceedingly dusty operation. Samples taken during this operation had as high as 14,046,720 particles ten microns or less in size per cubic foot. Samples taken in the middle of the room just after thirty bags had been dumped into the hopper had 55,647,040 particles per cubic foot. Under the Konimeter Microscope, about 90% of these particles appeared slightly crystalline, and were five microns or less in size; 10% were round, semi-opaque, ten to twenty microns in size. There were also a few scale like particles.

Fourteen men with an average service credit of six years are involved in this operation. Three men are exposed to the dust during six hours of each eight hour shift for nine of the fourteen shifts during the 85% of the time the filtering plant is in operation. They wear M. S. A. "Comfo" respirators.

After extensive study and investigation the local management has made arrangements to receive the clay in tank cars similar to those manufactured by the General American Tank Car Company. These cars are self-unloading and will discharge into an enclosed hopper. The clay will then be transported to storage bins by means of a screw conveyor completely enclosed in ten-inch tubing. It will be withdrawn from the bottom of the bins, passing through weighing scales, into the inductors where it will be mixed with the oil. This will provide a completely closed system and should eliminate all air contamination.

C - BONE BLACK OR CHARRED BONE:

Refined wax is filtered through bone black or charred bone to improve its color. This material is obtained from various meat packing firms in finely woven coffee bags that hold about 150 pounds each. An open belt conveyer and elevator carry the bone directly from the reactivating furnace to the covered filter charging hopper. Metal chutes lead directly from this hopper into filters which hold about 3,000 pounds of bone black. Upon completion of filtration the bone is washed with "Varsol" steamed for about 24 hours, washed with hot water, steamed for two hours more, and then dumped upon belt conveyers which carry it to the reactivating furnace which is gas fired. The bone goes through the furnace at a temperature of about 1100 degrees Fahrenheit and at the rate of about 250 pounds per hour. Bone black can be used over and over again. Three men one on each shift, with an average service credit of fifteen years, are engaged in this operation. Their period of exposure to dust is about one hour per shift. The greatest amount of dust produced results from the open conveyers, particularly in dumping the material from the furnace onto the conveyer belt. Samples taken during this operation had as high as 11,044,800 particles of ten microns or less in size per cubic foot. Considerable dust (14,273,280 particles per cubic foot) also arises from the open hatch of the filter charging hopper during filling. An eight-inch motor driven exhaust fan has been installed to suck back the dust from where the elevator buckets dump the reactivated bone into the chute to the charging hopper. The dust loss from this filtering operation is estimated to be about 1500 pounds per month.

Under the Konimeter Microscope about 65% of the dust particles of samples taken during the reactivation of bone black appear to be black, opaque, scot-like, and are five microns or less in size; 5% are rounded, semi-opaque, ten microns, or more in size. The angular crystalline and light grey particles which constitute about 30% are probably