

*International's New Triple Superphosphate assures more*

# complete ammoniation

ONE look shows you why International's new Triple Superphosphate offers such a big advantage in ammoniation. Its improved fineness of texture; uniform, dust-free particles; and correct chemical structure assure maximum ammoniation in minimum time — help cut your manufacturing costs. International's new Triple Super is made by an improved process from high quality rock. Result: a high analysis product

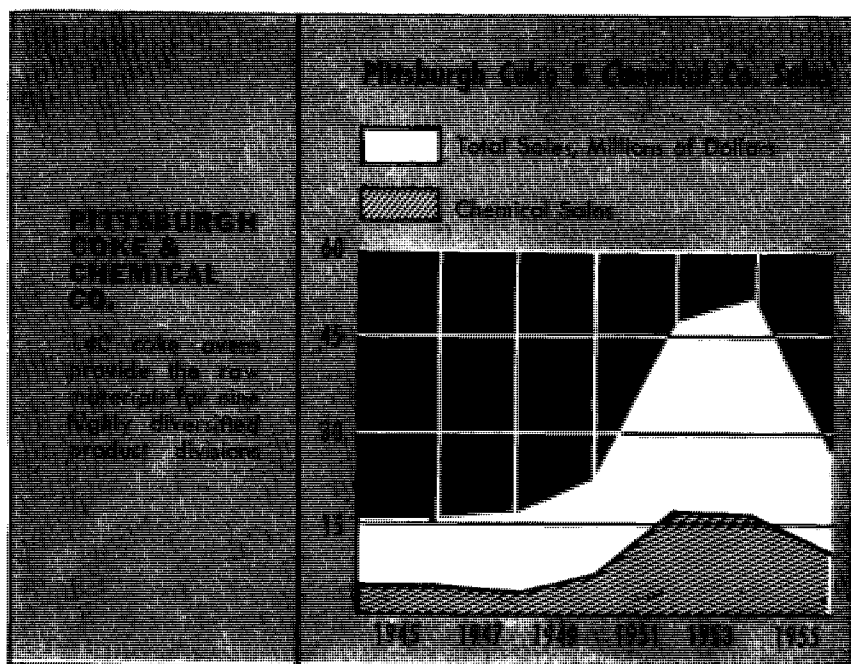
(46% A.P.A. or better). Special conditioning before shipment helps prevent setting up en route. This, plus improved particle size, means less grinding before mixing, more economical handling, better texture in your finished products and high product performance. International's new Triple Super is ready for immediate delivery to your plant. Write or wire the Phosphate Chemicals Division for samples and quotations.



**INTERNATIONAL MINERALS & CHEMICAL CORPORATION**

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only materials manufactured at Neville Island. In fact, this plant is the very heart of PC&C. It is here that coal arrives and is processed into coke, pig iron, cement, plasticizers, activated carbon, and many other valuable chemical starting materials and products.

To manufacture this variety of materials and products, Pittsburgh Coke has organized, from time to time, several divisions. They include the coke and iron and cement divisions, and the Neville Concrete Pipe Co. Also, the activated carbon, fine chemicals, coal chemicals, plasticizers, and protective coatings divisions.

Production integration of the island is obtained from the basic starting material coal. Annually over a million tons of coke are produced in 140 ovens. In turn these ovens consume about 1.4 million tons of coal in the process. Pittsburgh Coke's own blast furnaces use a large part of this coke for the production of 600,000 tons of pig iron. The remainder is sold for metallurgical use.

All through the coking process, valuable chemical bearing gases are collected in large mains above the ovens and transferred to the chemical plants for further processing.

Meanwhile, the blast furnace slag is used to produce cement. Hence, the slag is conveyed directly from PC&C's blast furnaces to the cement plant. Present capacity is 1.8 million barrels annually which includes pozzolan, portland, and mortar cements.

With cement on hand it is easy to see why there is a concrete pipe plant on the island. Known as the Neville Concrete Pipe Co., this division manufactures a broad line of prefabricated concrete products. These range from

small concrete blocks to large experimental concrete curtain wall panels weighing several tons each.

Turning to materials of more direct interest to the chemical industry, an exclusive PC&C process converts coal directly into activated carbon. These small coal-derived particles resemble tiny hard black sponges and are so porous that a single pound contains 125 acres of absorbant surface. This product finds use for a variety of industrial processes including catalysts supports, air purification, sugar decolorization, as well as for use in gas masks.

### Chemicals from Coal

As was pointed out earlier, gases from the coking operation are piped to the chemical plants for further processing. Here the gases are processed into a variety of chemicals such as sulfuric acid, benzene, pyridine, and ammonium sulfate. Tar products from the coking operation are converted into pitch, tar acids, creosote, and phthalic anhydride. These conversion processes, needless to say, require a good deal of integration. These pre- or postprocessed materials are utilized by the plasticizer, agricultural, and fine chemical divisions. Here again, the company's position in the chemical field is strengthened by a closely integrated structure. The fine chemicals plant, for example, has the full range of the company's coal chemicals as a raw material source.

Integration is also apparent in the transfer of phthalic anhydride from the coal chemicals division to the plasticizer plant. Agricultural chemicals also use coal chemical division's benzene and phenol in the production of insecticides,

weed killers, and brush killers. Ammonium sulfate, for fertilizer use, is also a coal chemical product, but is not marketed by the agricultural chemicals division.

### Research and Development Activities

Research at Pittsburgh Coke encompasses the improvement of present products and processes as well as the investigation of new ones. An interesting aspect of the company's research is that production personnel work directly with research personnel and vice versa. In some cases there is a complete interchange of personnel among these departments. In this manner, each appreciates the problems of the other and in turn, according to Pittsburgh Coke, will stimulate research and enable PC&C to maintain a competitive position.

Since competition is extremely keen in agricultural aids, shortly after inception of the agricultural chemicals division. PC&C began to develop a well-balanced research staff. This now includes chemists, biologists, and even biochemists, all working in the field of agricultural chemistry. In order to accelerate its research program, Pittsburgh Coke purchased, early in 1955, the well known Ethyl Corp. research "package" containing many potential agricultural discoveries.

Besides laboratory facilities, PC&C maintains greenhouses for screening tests by the research group. However, final product evaluation of new insecticides and herbicides is accomplished through grants in aid to U. S. colleges and universities and by cooperative programs with federal and state agricultural experiment stations.

### New Fungicide Being Tested

Typical of new products currently completing this field testing program is a new fungicide B-622. Field tests carried out over the past three seasons on this new material, a chloro-triazine, indicates unusual promise for use as a fungicide on tomatoes and potatoes for the control of blight and mildew.

In addition to agricultural research and development work, Pittsburgh Coke maintains active research programs in activated carbon, coal chemicals, plasticizers, fine chemicals and other products of the company. PC&C is definitely out to broaden its product position in a number of fields. These fields are plasticizers, agricultural chemicals, including selected weed and insect killers but not fertilizers, protective pipe coatings, fine chemicals, and activated carbon.

To gain position in these lines Pittsburgh Coke's research organization has been expanded tenfold since World War II and its sales force even more.