

AMERICAN POTASH COMPANY LEADS IN U. S. CHEMICAL INDUSTRY

In an endeavor to acquaint our many customers in the Philippine Islands with the various manufacturers being represented by us, we are arranging to run articles from time to time in this magazine, incorporating essential details of products manufactured, scope or extent of activities, size of plants, etc., together with brief history of these suppliers.

It is felt that with this information being made available to our customers it will be the means of their receiving important details and data regarding the origin and manufacture, as well as the high standards of inspection, sources of supply, and background of the various products handled by Marsman Trading Corporation.

In this issue, the first of these articles, a brief outline of "The American Potash & Chemical Corp.", manufacturers of "TRONA" Brand Soda Ash, is presented.

AMERICAN POTASH & CHEMICAL CORP.

The American Potash & Chemical Corp. is one of the largest manufacturers of chemicals in the United States. Its plant is located at Trona on Searles Lake, California, 185 miles northeast of Los Angeles, in the northern portion of the Mojave Desert. Searles Lake is the source of the brine used by the corporation as a raw material in the production of "Trona" Soda Ash and other chemicals. The lake was first discovered in 1862, and a plant for the refining of borax was operated intermittently until 1895. The present corporation was formed in 1926, and an expansion program was soon started. The present plant employs 1,150 men, and has a capacity of 150 tons of Soda Ash per day, in addition to around 1,000 tons of other high grade chemicals.

The most modern methods of production and refinement are used in obtaining "Trona" Soda Ash from the Searles Lake brine. Every care is taken to in-

sure purity for the finished product and safe delivery to the consumer. The Trona process for the manufacture of Soda Ash (or Sodium Carbonate, its chemical name), as well as the other chemicals produced, is essentially one of evaporation followed by fractional crystallization. The brine is removed from wells sunk in the porous salt body of the lake. It is pumped about four miles to the plant where it is mixed with the various end liquors resulting from the previous operation of the process. This mixture is then fed into triple effect evaporators, and vacuum pans, which are somewhat similar to but larger than those used in sugar refineries. Triple effect evaporators are employed because of their efficiency and adaptability to the process involved. The flow of steam through these units is counter to the flow of brine so that the final evaporation is accomplished at the highest temperature. This procedure is necessary to retain the potash and borax in solution as the liquor becomes more concentrated, as these salts are more soluble at high than at low temperatures. The solubilities of the carbonate, sulphate, and chloride of sodium are relatively much lower, and the larger portion of these salts is precipitated and removed from the evaporator system by means of salt traps and filters. Potassium chloride, and borax are crystallized and purified successively from the brine solution. The sodium chloride and a chemical and mechanical mixture of sodium carbonate and sodium sulphate, having been removed from the evaporation cycle by means of vacuum filters, are processed to produce commercial soda ash and sodium sulphate products.

The various products manufactured at Trona are stored in warehouses or concrete silos especially constructed for their protection against moisture and contamination. All storage facilities are equipped with modern conveyor systems and adequate loading trucks to facilitate the handling of large quantities of salts in short periods of time. The chemicals are carried to and from

storage by belt conveyors, from which control samples are automatically secured and immediately analyzed in an adjacent laboratory. The final shipping samples are likewise automatically obtained by the continuous diversion of a small portion as it is delivered in a steady flow to the packing machines or to the cars being loaded in bulk.

An efficient research department located at Trona is constantly working on problems connected with the improvement of existing processes and products, and the development of new products.

"Trona" Soda Ash is an important chemical used in the flotation process for maintaining the alkalinity, and is well known to flotation operators throughout the mining world. "Trona" Soda Ash is a product of unusual purity. It contains no sodium bicarbonate as made, and is produced as 99.5% Na_2CO_3 , or Sodium Carbonate.

Soda Ash is the common name for commercial Sodium carbonate, which is the most important industrial alkali. For household use it is called "Washing Soda", as distinct from "Baking

soda", which is Sodium hydrogen carbonate. Soda Ash is less expensive than caustic soda, and is used for cleaning, for softening water, in glass to prevent fogging, in the wood pulp industry, for refining oils, in soaps, and it has many other applications. It is used with lime as a flux in melting iron as it greatly increases the fluxing action of the lime. The soda slag will carry as high as 11% of sulphur as compared with only 2 to 3% in the lime slag. Soda ash is a grayish-white powder or lumpy substance with a melting point of $1,560^\circ \text{F}$. It comes in two grades, containing 48 and 58 per cent of alkali, Na_2O , respectively. The 58% grade is marketed as "light" or "dense", the latter being twice as heavy per unit volume as the light. The dense variety is preferred where bulk is desired, as in glass.

A full stock of "Trona" Soda Ash, 58% Light as required in Flotation Processes, is being maintained in the Marsman Trading Corp. bodegas in the Philippine mining districts, while supplies may be obtained through the various Marsman Trading Corp. branches throughout the Islands.



**FOR RAINY SEASON
PROTECTION**

*"Filson Clothes
for the Man
Who Knows"*

Complete Stocks in
Manila—Baguio—Paracale

C. C. FILSON CO.

—oOo—

Philippine Agents:

Marsman Trading Corp.