

JS INTERNATIONAL INDUSTRIAL LIMITED

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Natural Potassium Sulphate (SOP) Production Flowchart

POND OPERATIONS



BRINE EXTRACTION

Potassium rich brine is pumped from beneath the surface of salt lakes in Xitanier Province. China.



SODIUM REDUCTION

Sodium Chloride is precipitated in evaporation basins and the potassium rich brine is transferred to another basin.



CONCENTRATION

The brine is concentrated to schoenite crystallisation point by natural evaporation in large shallow ponds.



HARVESTING

Raw Schoenite is harvested using clean, single purpose earthmoving machinery and trucked to refining plant.



REFINING PLANT OPERATIONS



CRUSHING

The obtained Schoenite was crushed by a automatic feed crusher with auger.



DISSOLVING

Fully Dissolve the Schoenite Powder with water and then adding the Natural Muriate of Potash prepared by Carnallite and finally obtain the mixed solution containing K^+ , SO_4^{2-} , Mg^{2+} , Cl^- .



CONCENTRATION

According to the principle of Phase Equilibrium, the Potassium Sulphate Crystal will be concentrated from the mixed solution and the Magnesium Chloride was still remained when the concentration of this mixed solution reached the point of Phase Equilibrium of Potassium Sulphate.





FLOATING

The Crude Potassium Sulphate Crystal was obtained from the separation process of Solid and Liquid by adding the flotation agent (octadecylamine hydrochloride, 0.5Kg/MT) to the saturated solution. (Flotation agent just has the ability of capturing and do not participate in any reaction)



Separation

Separate and transfer the crude Potassium Sulphate Crystal.



DISSLOVING AND RECRYSTALLIZATION

The purified Potassium Sulphate Crystal was obtained from the process of removing bubble and recrystallization by dissloving the Crude Potassium Sulphate with water. (The process of removing bubble can also removing the residual flotation agent)



DRYING

The Potassium Sulphate Powder was obtained by transfering the purified Potassium Sulphate to Drying equipment.



GRANULATION

The Granular Potassium Sulphate can be obtained by transfering the Potassium Sulphate Powder to Granulation equipment with Dry method.



TESTING+PACKING+STORING

After testing, the Potassium Sulphate Powder or Granule can be packed with bags and stored, and then waiting for delivery.