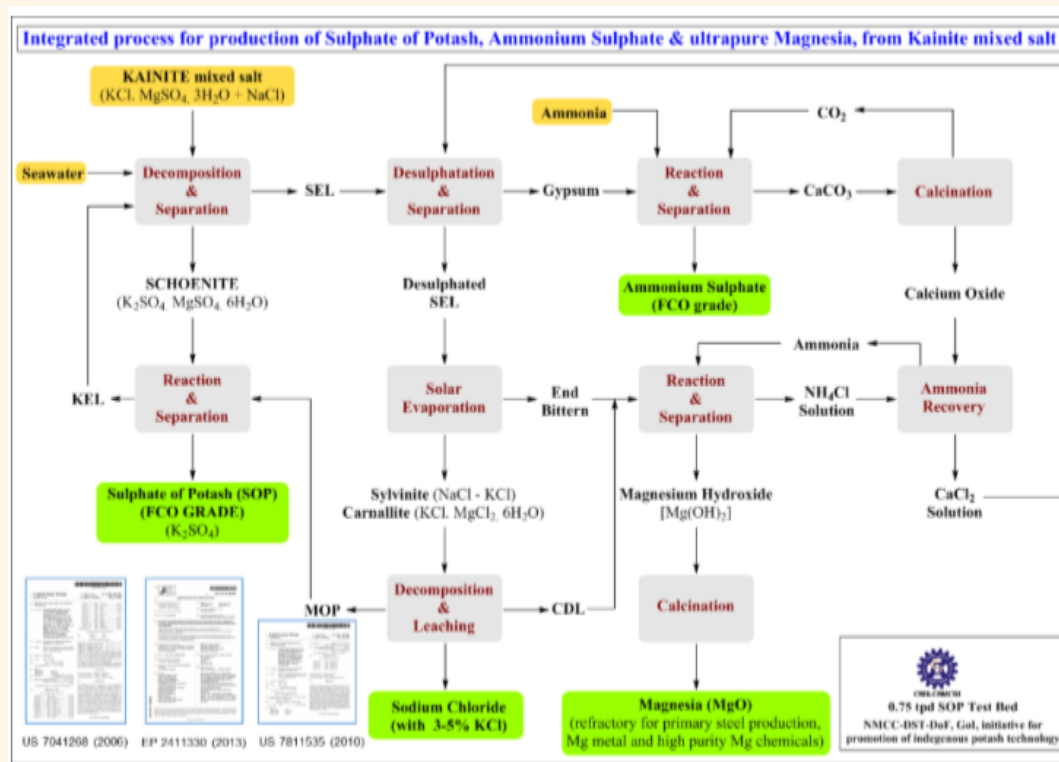


Technology Systems Programme

5.) SOP

Under a Department of Science & Technology (DST), Government of India sponsored programme, CSIR-Central Salt and Marine Chemicals Research Institute (CSIR-CSMCRI) is setting up a 0.75 TPD test bed – for scale-up, demonstration and validation of institute’s internationally patented technology for co-production of sulphate of potash (SOP – FCO grade), ammonium sulphate (FCO grade) and ultra-pure magnesia, utilising K-rich mixed salts obtained from sea bittern. The project culminated through a joint initiative of National Manufacturing Competitiveness Council, Department of Science & Technology and Department of Fertiliser on promotion of Indigenous potash technology.



In CSIR-CSMCRI’s integrated process (granted patents: US 7041268, EP 2411330, US 7811535), kainite type mixed salt, obtained from evaporation of sea water/bittern, is used for production of sulphate of potash. MOP (Muriate of potash, potassium chloride) required in the process is recovered from intermediate stream. Gypsum and magnesium chloride rich brine, generated in course of MOP production, were converted to ammonium sulphate and ultra-pure magnesia respectively. The process does not employ any organic chemicals and satisfies “Zero Discharge” criteria.



Sea brine (liquid obtained after salt production)



Progressive crystallization through solar evaporation



Kainit-type mined salt ($KCl \cdot MgSO_4 \cdot 3H_2O + NaCl$)



The test bed was inaugurated on 10th April, 2014, by Padma Vibhushan Prof. M. M. Sharma in the august presence of Padma Bhushan Dr. T. Ramasami, Secretary-DST and DG-CSIR.