

## Manufacture of sodium chloride and potassium chloride of any percentage ratio (low sodium edible salt) from mixed salt/bittern and manufacture of pure potassium chloride therefrom

### Application/Uses/Problem being Addressed:

The process is for recovery of low sodium salt and potassium chloride (a fertilizer).

### Salient Technical Features including Competing Features/Impact:

The excessive exertion in the present day world has created lot of health problems in humans such as hypertension. Sodium is responsible for increasing nerve impulses and low sodium salt, primarily a mixture of sodium chloride and potassium chloride is useful for those persons who have been advised to eat less sodium on account of medical ailments. Realizing the demand of low sodium salt which is commonly prepared by homogeneous mixing of NaCl and KCl, CSIR-CSMCRI has developed a cost effective process for the production of low sodium salt using the bittern, the mother liquor left out after production of salt in solar salt works. The process involves the desulphatation of bittern using cheap agents like distiller waste liquor of soda ash plants

and processing the desulphated bittern for the recovery of low sodium salt via the intermediate product carnallite. The low sodium salt of required specifications can be made by controlling the ionic composition of desulphated bittern during its processing.

The process comprises of desulphatation of bittern (by-product of salt industry), evaporation of bittern in solar pans and processing of solid mixture with water to produce a mixture of sodium and potassium chlorides and optionally preparing “free flowing” and iodized salt or Potassium Chloride, by known techniques.

### Business Scope & Opportunity (in terms of scale, cost, market, etc.):

The technology for Low Sodium Salt process has been validated in CSIR-CSMCRI ESF/pilot plant and one of the commercially operated solar salt works in Tamil Nadu for one of the multinational companies.

TRL Level & Scale of Development

TRL-7

IPR Status & IPR Details

US 6890509B2, CA 2473900A1, CA 2473900C, CN 1304292C, CN 1617834A,  
US 20030143152, WO 2003064323A1, WO 2003064323B1



The process/technology is ready for technology transfer and can be implemented on commercial scale. The product has high demand in industrial sector.

**Environmental Considerations, if any:**  
Eco-friendly.

**Status of Licensing:**  
Technology is ready for transfer.

**Techno-Economics**  
To be worked out based on proposed capacity

**Status of Commercialization:**  
Ready for commercialization.

**Major Raw Materials Needed:**  
Sea/Subsoil bittern.

**Major Plant Equipment and Machinery Required:**

Material handling equipment such as pumps, belt conveyors, ridger, harvesters, loaders, crushers, tractors, trailers, washery, etc.

**Technology Package:**

- Basic technical details for design of commercial plant.
- Demonstration of process.
- License fee and other financial details would be provided on specific request.

