

**Application/Uses/Problem being Addressed:**

High purity salt (NaCl): Edible as well as Industrial use.

Sodium sulphate:

- As filler in powdered home laundry detergents.
- In textile industry (helps in “levelling”, reduces negative charges on fibers so that dyes can penetrate evenly).
- In manufacture of wood pulp.
- As a fining agent in glass industry.
- As diluent for food colors.

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

- The leather industry has received criticism on environmental grounds. Due to high pollutant loading, this tannery effluent is not suitable for direct discharge and requires downstream treatment/ processing.
- Similarly, composition of salt brine of Rajasthan is typical and different with sea

**Process for the recovery of high purity salts-sodium chloride and sodium sulphate from crudes (sulphate-rich brine)**

brine as it does not have much calcium and Magnesium impurities and contains high level of sulphate impurities in the brine as Sodium Sulphate. The salt produced is highly contaminated with sodium sulfate and not suitable even for edible as well as industrial purpose.

The process relates to the recovery of high purity salt (NaCl) and sodium sulphate ( $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ ) from crudes such as solid waste from tannery effluents and common salt produced from Rajasthan lakes (India) containing sodium sulphate.

**IPR Status & IPR Details : IN 202011009669**

**TRL Level & Scale of Development : TRL-7**





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

The technology has been validated in CSIR-CSMCRI ESF/pilot plant and one of the commercially operated solar salt works in Rajasthan.

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.

### Status of Commercialization:

Ready for commercialization.

### Major Raw Materials Needed:

Crude salt.

### Major Plant Equipment and Machinery Required:

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

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

### 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.

