

# Refined Iodised Salt Processing Plant



# ssing Plant

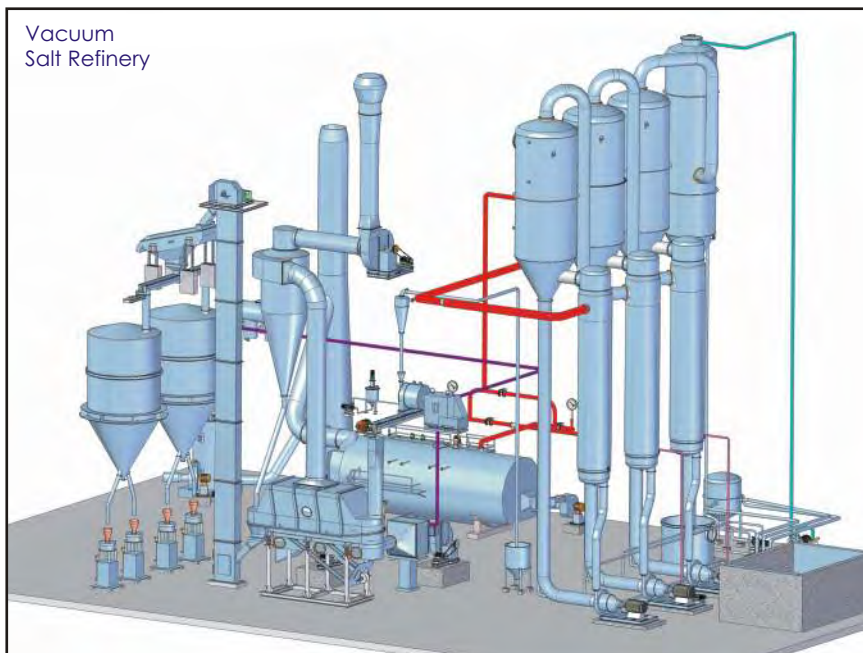
After removal of impurities, the salt cake coming out of the centrifuge gets mixed with iodine solution and dried in a fluid bed dryer < 0.2% moisture content. Anti-caking agents are added before packing.

## Vacuum Salt Refinery

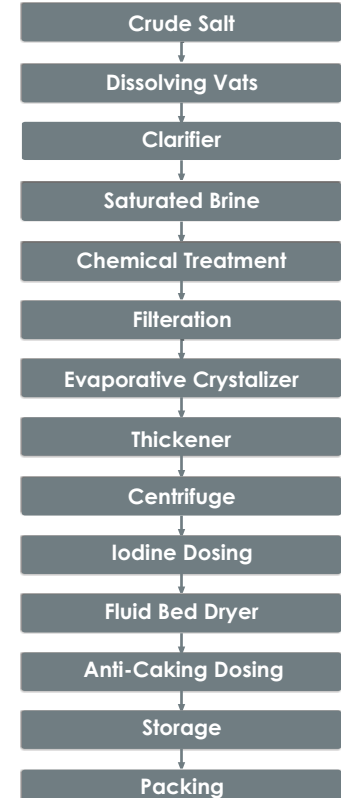
The process involves dissolving of solar salt in water and making a saturated solution of salt. The saturated brine is pumped out to a brine clarifier, where the insolubles settle at the bottom of the clarifier and clear brine solution is taken to a brine tank. In the brine tank required chemicals are added to precipitate out magnesium and calcium salts present along with the salt. The brine is then filtered and taken to the final brine tank. From this tank saturated brine is fed to the continuous evaporation plant where Crystallisation takes place and slurry is pumped out to a concentrate tank. This salt slurry is then pumped to a hydro-cyclone battery to get a slurry concentration up to 50-60%.

This slurry is fed to a centrifuge, and from the centrifuge salt cakes with 4-5% moisture are obtained. The salt with 4-5% moisture is fed to a fluid bed dryer through a screw conveyor where the iodisation takes place and the salt is dried in a fluid bed dryer up to 0.2% moisture content and cooled to ambient temperature. The salt is then taken through a bucket elevator to a sieving machine. The oversize particles are collected and sent for re-dissolving in the final brine tank. Free flowing agent is then added to the crystalline salt in a screw mixer and finally sent to a storage silo.

The salt packaging is done from the silo by FFS machine in different quantity (1 kg, ½ kg packs). It can be packed in bags also.



## Process Flow for Vacuum Salt Refinery



# Salt Process

## Introduction

Main source of salt is rocks, sea & lake. Maximum consumption of salt is in its natural form after being produced from sea or directly from rock. But with time, awareness on uses of salt have grown manifold and the demand for refined iodised salt has increased tremendously during the last few years. Refining not only helps in increasing purity of salt, but also improves flowability and use of anti-caking agents helps in maintaining quality too. During refining and drying process, iodisation is done which is important for human body to avoid various diseases. Refined salt is further graded for various applications like kitchen salt, table salt and industrial salt.

### Two types of Salt Refinery System:

- Mechanical Salt Refinery
- Vacuum Salt Refinery

### Mechanical Salt Refinery

Basic principle of mechanical salt refinery is to separate the solid & soluble impurities present in the crude salt. In this process first the salt crystals are broken down to the desired crystal size distribution. Crushing also helps to take out impurities from within the crude salt.

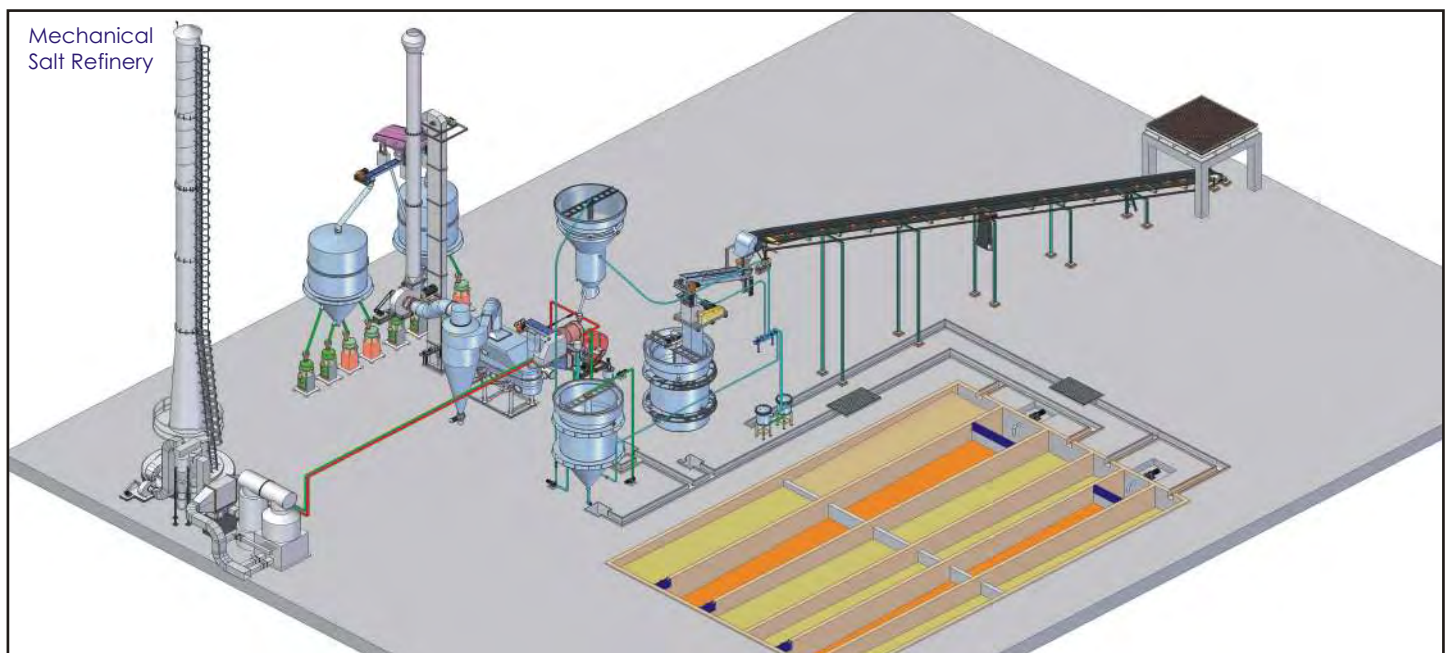
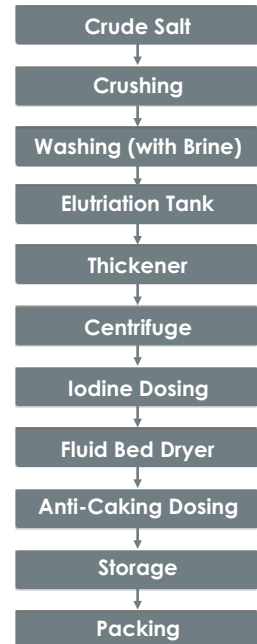
After crushing, the soluble and insoluble impurities are separated by dissolution and hydro-mechanical classification steps.

The gypsum crystals and other solid impurities like sand, earth can be separated by using agitated dissolving vat followed by counter current washing system, thickener and centrifuge.

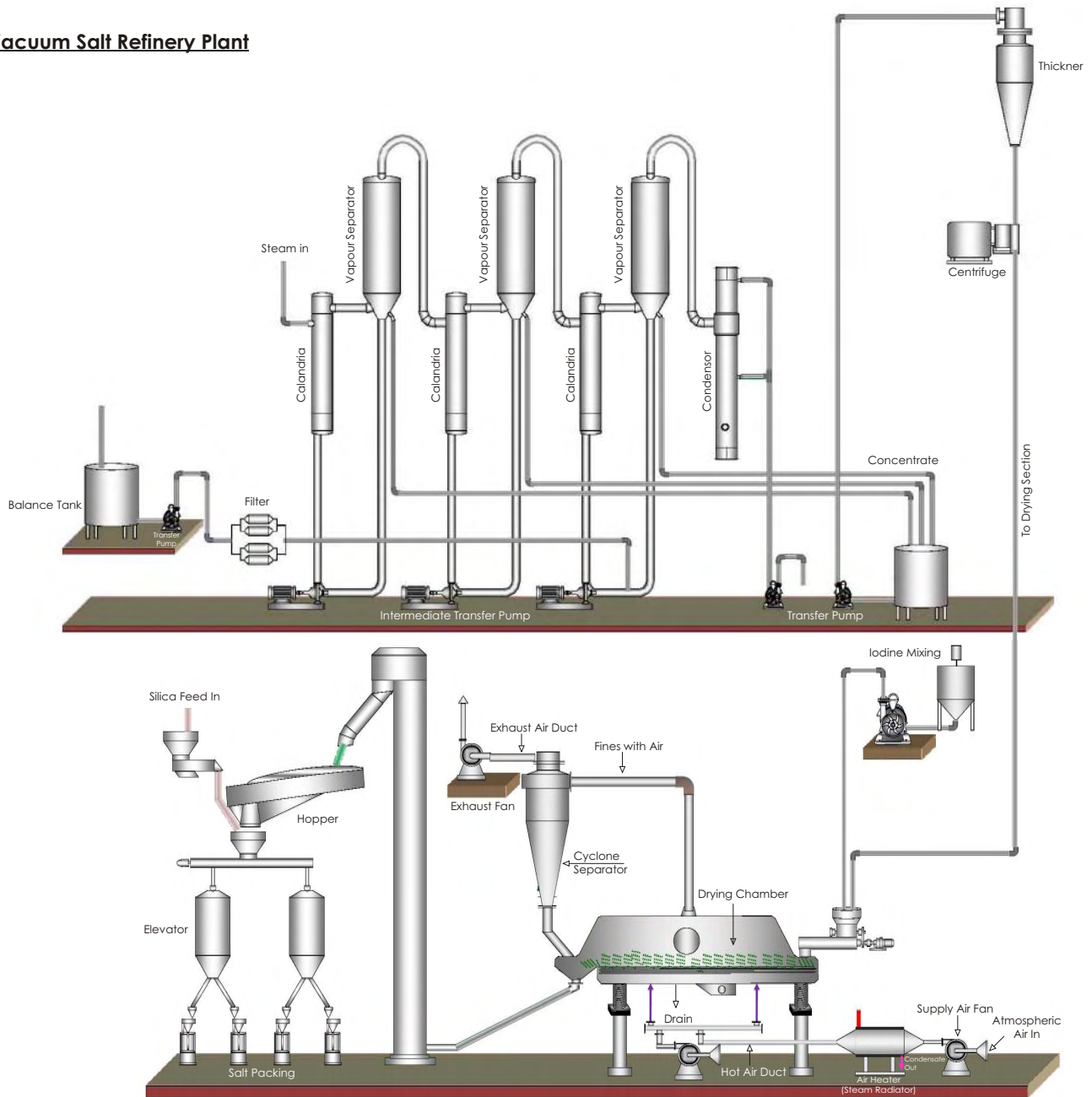
Dissolvable impurities  $MgCl_2$ ,  $MgSO_4$  &  $KCl$  remain along with the saturated brine solution until the impurities concentration equals to that of sodium chloride.

SSP standard refinery consists of three stage washing and a centrifuge. Counter current washings help removal of fine impurities and purge from the bottom of these systems removes impurities like sand, earth etc.

### Process Flow for Mechanical Salt Refinery



**Vacuum Salt Refinery Plant**



**Our Esteemed Clients**

- Indo Brine Industries Ltd., India
- DS Foods Limited, India
- Pubali Salt Industries Ltd., Bangladesh
- Ekango Salt Refineries (Pty) Ltd., Namibia
- Groupe Kadur Ltd. Algeria
- Royal Salt, Lagos, Nigeria
- Nyanza Mines Ltd., Tanzania
- Yosuf Ishaq Co. Ltd. , Afghanistan
- Yousef Ahmad Husein & Partners Co., Jordan
- Ken salt, Mombasa, Kenya
- Sea Salt, Tanzania
- BRAC Salt, Bangladesh
- Saboo Sodium Chloro Ltd., India
- Patel Salt & Marine Chemicals (P) Ltd., India



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