



Sustainability | Value | Aspire | Achieve | Reliability



EVAPORATION AND DRYING

[www.svaarprocess.com](http://www.svaarprocess.com)

# ABOUT SVAAR

SVAAR Process Solutions Pvt. Ltd., is ISO 9001:2015 company who delivers best solutions at optimum cost within Evaporation and Drying Technology. In short span of time we have proved our ability by spreading our wings in different industrial sectors like Dairy, Sugar, Food & Beverages, Starch, Chemicals, Pharmaceuticals, Distillery, Pulp and Paper, Waste water etc.

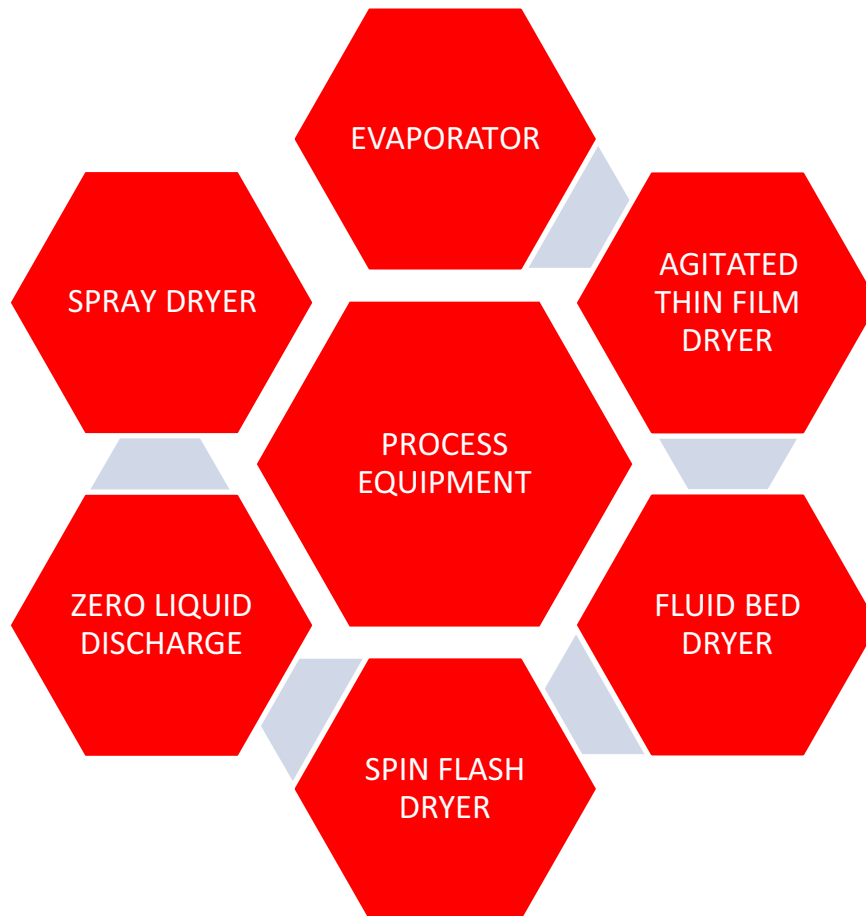
At SVAAR, we have successfully installed and commissioned several evaporation plants across India and target to reach globally soon. Our expert team has excellently revamped and enhanced existing evaporation and drying plants of reputed companies so as to attain increased performance level and desired industrial standards.

What makes us unique is our expertise in working with exotic metals like Titanium etc. and consistent efforts to exceed established quality standards in industry.

We incorporate latest technology and new design features in our proposed process plants which enable user to run plant at minimum human interface, low utility consumption and less maintenance.

SVAAR can offer evaporation plants up to seven effects with an evaporation capacity up to 400TPH and Spray drying plant up to 60 TPD capacity.

## OUR CORE TECHNOLOGIES



## INDUSTRIES WE SERVE



DAIRY



BEVERAGES



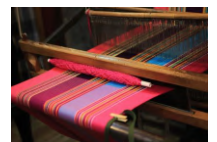
STARCH



SUGAR



FOOD



TEXTILE



DISTILLERY



COCONUT



PULP & PAPER



CHEMICAL

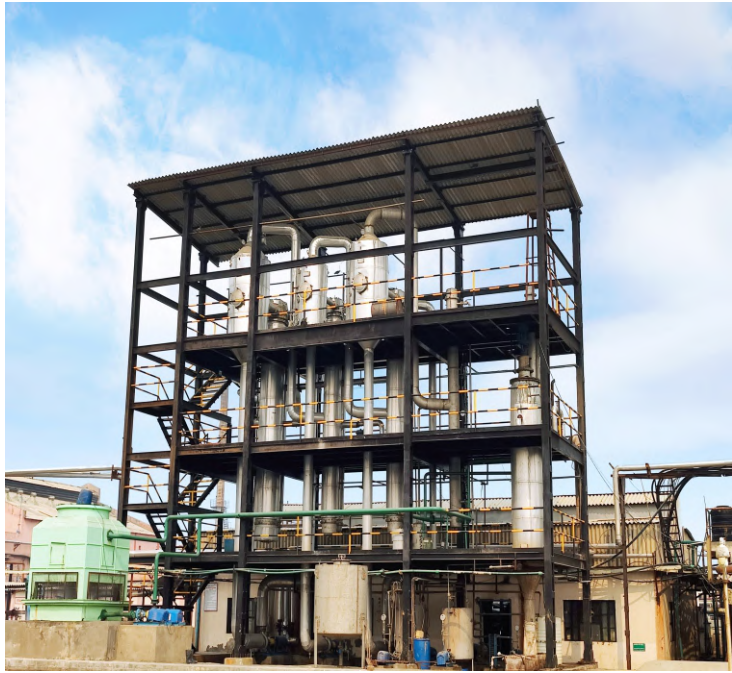


PHARMACEUTICAL



WASTE WATER

# TUBULAR EVAPORATOR



Evaporation is removal of solvent as vapors from solution while concentrating solution.

SVAAR offers wide range of tubular evaporator for various Industrial sectors like Dairy, Sugar, Food, starch, Chemicals, Pharmaceuticals, Distillery, Pulp and Paper etc.

SVAAR Process Solutions can offer evaporator upto seven effects with an Evaporation capacity upto 400TPH. We can achieve 82 % Solids concentration for liquid glucose in starch industry where as we can also achieve upto 75% concentration of black liquor, typically a by product in pulp and paper Industries.

SVAAR can offer Evaporation plant with Thermal Vapour Recompression (TVR) as well as Mechanical Vapour Compression Technology (MVR).

Falling Film Evaporator are widely used in Process, Chemical, Food, Dairy and Paper Industry. These kind of evaporator are very useful in concentrating heat sensitive material.

These type of evaporator can easily operated at very low absolute pressure which makes it most important type of evaporator for industrial processes.

SVAAR efficient distribution system makes it flexible in using for wide range of applications.

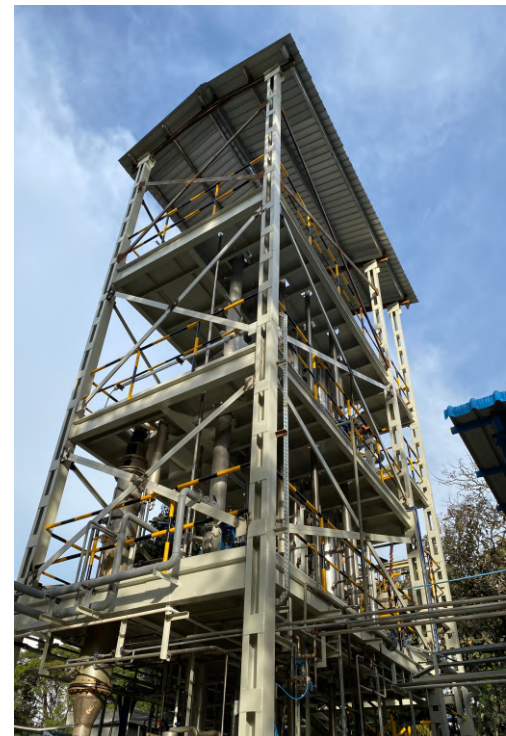
SVAAR can offer Falling Film Evaporation plant with Thermal Vapour Recompression as well as Mechanical Vapour Compression Technology.

SVAAR has supplied FFE for Dairy and Starch industries.



In Force Circulation Evaporator force is used to drive the liquid through the evaporator tubes thus producing high tube velocities. Efficient design results in controlled temperature difference and tube velocities that gives optimum heat transfer. Forced Circulation Evaporator are recommended for viscous, scaling and salting liquids.

SVAAR Forced Circulation Evaporators are widely used for crystallization and salting purpose. FCE can be accompanied with Stripper and Agitated Thin Film Dryer. SVAAR has Supplied numerous Force circulation Evaporators for Effluent concentration and Zero Liquid Discharge.



## SPRAY DRYER

Spray Drying is a unit process which converts solution, suspension or paste into dried particulate form by spraying the fluid in hot drying medium. Spray drying may proceed concurrently, counter currently, or as a mixed-flow process. Spray Drying can be achieved in stages depending upon the product quality.

The Feed is atomized using a rotating wheel or a nozzle, and the spray of droplets immediately comes into contact with a flow of hot drying medium, usually air. Selection of the atomizer is solely dependent on the required final product quality and particle size.

SVAAR offers single, two and three stage Dryer. Three stage dryers are often used when the final product agglomeration is required.

Spray drying is used to dry pharmaceutical fine chemicals, foods, dairy products, blood plasma, numerous organic and inorganic chemicals, rubber latex, ceramic powders, detergents, and other products.



## FLUID BED DRYER



Fluidized Bed Dryer is essentially equipment in which a continuous feed of wet particulate material is dried, cooled by contact with hot or cold air that is blown through to maintain the material in a fluidized state.

Fluid Bed Dryers are often inlined with Spray Dryer process in two or three stage drying. SVAAR offers Fluid Bed for food and chemical drying applications.

Fluidized Bed Dryers (FBD) are used extensively for the drying of wet particulate and granular materials that can be fluidized, and even slurries, pastes, and suspensions that can be fluidized in beds of inert solids.

They are commonly used in processing many products such as chemicals, carbohydrates, foodstuff, biomaterials, beverage products, ceramics, pharmaceuticals in powder or agglomerated form, healthcare products, pesticides and agrochemicals, dyestuffs and pigments, detergents and surface-active agents, fertilizers, polymer and resins, tannins, products for calcination, combustion, incineration, waste management processes, and environmental protection processes.

## SPIN FLASH DRYER



Flash Drying systems is in which particulate solids are dried during transport in a hot gas stream usually air or combustion gases. The simple flash drying system includes six basic components: the gas heater, the wet material feeder, the drying duct, the separator, exhaust fan, and a dried product collector. The wet particles are fed into the hot gas stream sometimes with special mixing devices. The stream flows up the drying tube. The gas velocity must be greater than the free fall velocity of the largest particle to be dried. The gas velocity in relation to the particle velocity is high.

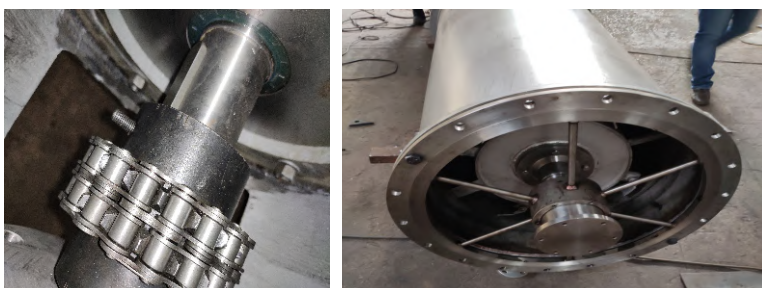
Thermal contact between the conveying air and the solids as mentioned above is usually very short and therefore flash dryers are most suitable for removal of external moisture (surface moisture) and are less suitable for removal of internal moisture. At the end of the drying process a dust separation arrangement is installed. For this purpose cyclone dust separators, fabric filters, electrostatic precipitators, wet scrubbers, and fabric filters are used. Flash dryers are used in various Sectors of the chemical, pharmaceutical, ceramic, gypsum, wood, and mining industries.

## AGITATED THIN FILM DRYER

Agitated thin film dryers (ATFDs) are widely used in chemical, pharmaceuticals and food industries to produce dry free flowing powder. The combination of short residence time, high turbulence and rapid surface renewal permits the agitated thin-film dryer to handle the heat-sensitive, viscous and fouling feed streams successfully.

The process fluid enters in the unit tangentially above the heated zone and distributes evenly over the inner surface of wall by rotating action of the rotor. The rotor blades spread the feed over the entire heated wall and generate highly turbulent flow conditions in the thin layer of liquid. The feed progressively passes through the phases like slurry, paste, wet powder and finally powder of desired dryness.

ATFD can be used as multi-utility equipment. ATFD is sometimes inadvertently referred to as ATFE - Agitated thin film evaporator, Wipe Film Evaporator, Scrape surface Evaporator when the desired product is a concentrated liquid.



# PROCESS EQUIPMENT



SVAAR offers process, mechanical design and manufacturing for process equipment's such as storage vessels, heat exchanger, distillation column, reactors, separator etc.

Our expert team is well versed in manufacturing of chemical process equipments in various grades of stainless steel, carbon steel, duplex steel and exotic metals like titanium, hastelloy, incoloy.



To reinforce our emphasis on quality, we use internal quality assurance/control system adhering to ASME or equivalent standard and only after stringent quality inspection/tests equipment's are dispatched to customer site.

Design Analysis and Detailed Engineering of fabricated process equipment such as per International and Indian Codes of practice and standards. Collaboration with customers in selection and finalization of construction features, materials for special applications.



SVAAR's proprietary equipment's are **Evaporator, Spray Dryer, Fluid Bed Dryer, Vapour Separator, Cyclone, Bag Filter, Heat Exchanger, Reactors, Condensers, Distillation Column, Tanks, Silo's.**

#### Workshop Manufacturing Capacity:

- 51000 Sq ft Manufacturing Facility.
- Well Equipped with machinery required for heavy and exotic metal fabrication.

#### Design & Manufacturing Codes:

- ASME Sec.VIII Div-1.
- TEMA
- PED



# AFTER MARKET SERVICE

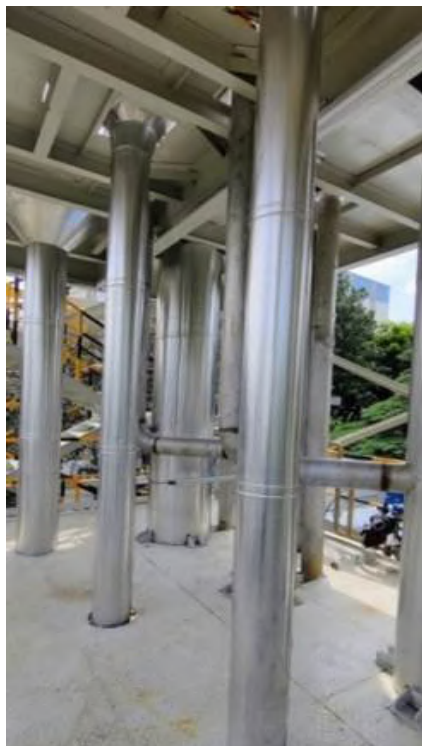
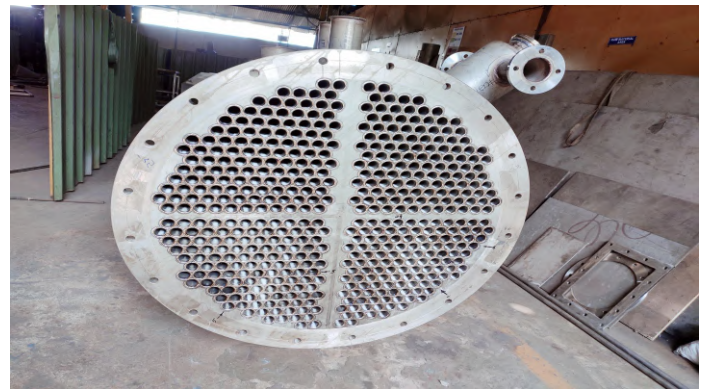


There are more than thousands of existing evaporators and dryers for many applications in chemical and process industries.

On numerous occasion these plants faces challenges, which requires enhancement for many reasons.

SVAAR has a dedicated team focusing on enhancement of existing evaporation and drying plants.

Our proficiency within evaporation and drying enable us to provide the ideal solution based on our experience in process design, engineering and installation.



- Plant Relocation: There may be chances of plant relocation due to dispute, SVAAR is capable of dismantling of equipment and erection of the plant as per the previous layout.
- Capacity Enhancement.
- Plant Revamping.
- Energy Optimization.
- Plant Audit.
- Installation
- Operation and Maintenance
- Spare Parts





# **SVAAR**

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