



Automobile Industry



Pharmaceutical Industry



Rubber & Plastic Industry



Chemical Industry



Food Industry



Oil & Gas Industry

• Aerospace Industry

• Steel Industry

• Agro Industry

• Paper and Packaging Industries

Industrial Dryer



KERONE

About KERONE

KERONE is one of the most admired and valuable company for customer satisfaction.

ENGINEERING



EXCELLENCE

KERONE is pioneer in application and implementation engineering.



40
YEARS
OF
MANUFACTURING EXCELLENCE

KERONE is possessing experience of 40+ years in engineering excellence.

KERONE has reported annual revenue of \$8 to \$10 Million , increasing year-on-year.



KERONE is having immense expertise in manufacturing and implementing various types of heaters and dryers.



KERONE is possessing employee strength of more than 140 experts continuously putting efforts for happy industrial heating solutions.



Our Vision and Mission



Vision

- Turn into world leader in providing specialized, top-notch quality and ecological industrial heating, cooling and drying solution across the globe.
- To attain global recognition as best of quality and environment friendly engineering solution company.

Mission

- To enhance the value of customer operation through our customer need centric engineering solution.
- We are committed to provide our customers, unique and best in class products in Industrial heating, drying and cooling segment, with strategic tie-up for the technical know-how with renowned leader in the industry specific segment.
- We are company that believes in strong ethics and timely commitment helps to build long term relationship.



Value Propositions

40+ Years Of Rich Experience

Sound Infrastructure

Adherence to Standards

Timely Delivery

Highly Customized Product

Cost Effective Solutions

Team of Experts Delivering
Quality

Great After Sale Support



Member of AIMCAL



Member of ICT



Recognized and Rated
by CRISIL

In Association with SVCH-Technologii, Moscow
(Russia)



ASCB(E) Certification
for Best practice



Member of A.M.P.E.R.E.
(Europe).



CRISIL Verified

Product Categories

Industrial Heaters

Curing Systems

Industrial Heating Equipments

RF Heating Systems

Industrial Dryers

Microwave Heating Systems

Special Purpose Machine

IR Heating System

Coating & Impregnation Plants

Process Equipments

Dehydrating Systems

Mixing Plants

Pharmaceutical Heating Solutions

Industrial Ovens

Fundamentals Of Drying

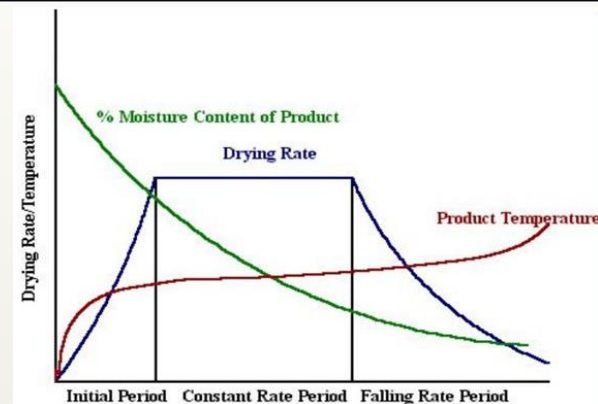
Drying has been the oldest friend of almost all type of industrial processing plants.

Most commonly drying appear as last stage/step of Industrial process for removal of water/Moisture molecules, or another solute.

Drying is in separable from many manufacturing processes such as Paper, Printing & Coating, Food, Pharmaceutical, Chemical and many others.

Drying is carried out for one or more of the following reasons:

- To reduce the cost of transport.
- To make a material more suitable for handling as, for example, with soap powders, dyestuffs and fertilizers
- 2-To improve or keep the good properties of a material, e.g. flowability, compressibility.
- To provide definite properties, such as, for example, maintaining the free-flowing nature of salt.
- To remove moisture which may otherwise lead to corrosion. One example is the drying of gaseous fuels or benzene prior to chlorination.



The first phase, or initial period: Where sensible heat is transferred to product under processing, rate of increase of the heat is very high.

The second phase, or constant rate period: Drying rate is high in this stage in comparison with the subsequent stages, and temperature increases exponentially.

The third phase, or falling rate period: During this phase, migration of moisture from the inner interstices of each particle to the outer surface becomes the limiting factor that reduces the drying rate.

Types Of Drying

Radio Frequency
Drying

Microwave
Dryers

Infrared drying

Hot Air Dryer-
Stenter

Steam
Cylinders/Cans

Spray Dryers

Rotary Dryers

Flash Dryer

Fluidised Bed
Dryers

Radio Frequency Drying

- ✓ Radio Frequency (RF) dryers are type of Electromagnetic radiating system
- ✓ Radio Frequency (RF) dryer generates electromagnetic radiation of 30-300Mhz.
- ✓ RF dryer heats materials and substances by igniting conductive molecules.
- ✓ RF dryer is similar to microwave heating at lower frequency.
- ✓ RF dryer is also known as Induction Heating and/or Dielectric Heating.

Benefits of RF Dryers :

- Quicker drying; as dries from within
- No overheating of material under process
- Distinctive materials heat at diverse rates
- Spontaneous ON/OFF control
- Environmental friendly and very clean process
- Save operational cost by saving time, energy and increased controlled heating



Microwave Dryers

- ✓ Microwave heating systems are member of Electromagnetic heating family.
- ✓ Microwaves has frequency of 2.45Ghz and 950Mhz.
- ✓ Microwave is generated from small device known as Magnetron.
- ✓ Microwave heating system has property to heat from within.
- ✓ Microwave heating systems heats volume of material hence also known as 'Volumetric Heating'.

Benefits of Microwave :

- Microwave heating process is clean.
- Microwave heat penetrates both on the surface as well as internally within the object placed for the Treatment.
- High speed of heating reduces total time of processing.
- Microwave heating process is highly controllable



Infrared Dryers

- ✓ One way to improve drying operations is to use Infrared Energy in drying process.
- ✓ Infrared heaters use IR radiating waves that fall just below the visible light spectrum.
- ✓ Infrared radiators heat and produce heat on the surface of material.
- ✓ Heat is transferred from the outer surface to the inner body.
- ✓ Infrared heating system produces heat the same as 'SUN' from a hot surface to a cold surface.

Benefits of Infrared Dryers :

- Having superior Air Handling arrangement.
- Forced airflow speeds up drying/curing process.
- High-volume circulation blower reduces energy costs.
- Separate dedicated blowers for circulation & exhaust Control Center
- Infrared dryers (IR dryers) are compact in size, hence they take up less floor area.
- Infrared Dryers (IR dryers) can have a digital keypad with a digital display.



Hot Air Dryer- Stenter

- ✓ Fabric drying is usually carried out on either drying cylinders (intermediate drying) or on stenters (final drying). Drying cylinders are basically a series of steam-heated drums over which the fabric passes.
- ✓ The stenter is a gas fired oven, with the fabric passing through on a chain drive, held in place by either clips or pins. Air is circulated above and below the fabric, before being exhausted to atmosphere.
- ✓ Hot Air dryers and Hot air Generators manufactured those can be fired by verity of fuels
 - Oil fired Hot Air dryer
 - Gas Fired Hot Air dryer
 - Solid Fired Hot Air dryer

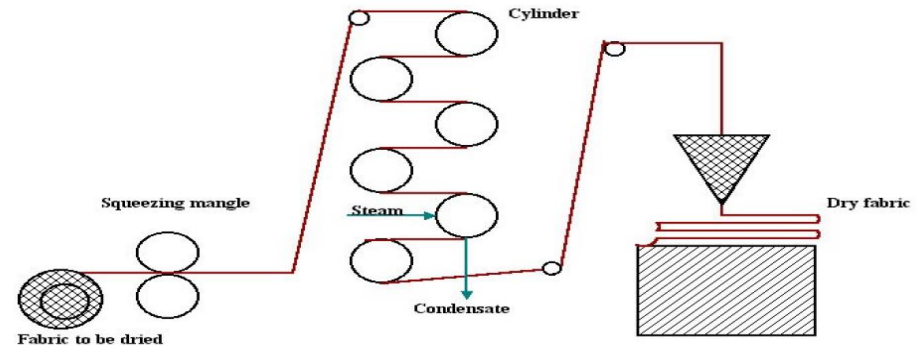


Applications:

- Hot Air Dryers finds its application in multiple industries for varied functional areas
- Food Industry:
 - Curing, Dairies, Confectionery, Fruits & Vegetable Canning, Dehydration, Pasteurizers, Vegetable Oil Refineries etc.
- Chemical & Pharmaceutical Industries
 - Dyes and Intermediates, Refineries, Lube oil plants, Oil Reclamation, Additives, Adhesives, Pesticides, Fertilizers etc.
- Textiles
 - Stanters, Curing machines etc.
- Hotels & Laundries, Kitchen
- Rubber, Tyre Retreading, Paper & Board, Leather Industries, Plastic Industries
- Cement Concrete/Mosaic Tiles Curing
- Metal Pre-treatment, Timber Seasoning, Thermocole.

Steam Cylinders/Cans

- ✓ Contact Drying- Steam Cylinders/Cans the simplest and cheapest mode of drying for fabrics.
- ✓ Contact Drying- Steam Cylinders/Cans are primarily employed for transitional drying rather than final drying and for pre-drying prior to stentering.
- ✓ Cylinders can be used to dry down a wide range of fabrics, but it does give a finish similar to an iron and is therefore unsuitable where a surface effect is present or required.
- ✓ In stenters, the fabric is width wise stretched for width fixation by a series of holding clips or pins mounted on a pair of endless chains.
- ✓ It is common for steam cylinders to have problems such as leaks at vacuum breakers, air vents, rotating joints and steam traps.
- ✓ This is a direct result of the design of the heating system which relies on passing steam and condensate into and out of each cylinder via a rotating joint.



Schematic of Cylinder drying



Spray Dryers

- ✓ The spray dryers are designed and customized to fit into need of your process need for drying requirement and process plant suitability.
- ✓ Spray drying has been one of the most energy-consuming drying processes, however the spray dryer designed and build by KERONE is optimized to utilize the energy in very efficient Mannes.
- ✓ The Spray dryers has been one that is necessary in production of dairy and food product powders.
- ✓ Spray drying is carried out by atomizing feed liquid into a drying chamber, where the little droplets are submitted to a stream of hot air and convinced to powder particles

Salient Features:

- Rapid and non-contact drying.
- Much higher initial temperature of drying medium can be used.
- High evaporation rates and thermal efficiencies are achieved.
- It can be quickly started and shut down.
- It is capable of handling volatile or inflammable solvents in a closed cycle.



Rotary Dryers

- ✓ The Rotary dryers are made up of a large, rotating cylindrical tube, usually supported by concrete columns or steel beam, it represents the oldest continuous and most common high volume dryer used across industries
- ✓ The typical arrangement of the rotary dryers are the feed materials passing through a rotating cylinder termed a drum.
- ✓ The drum is mounted to large steel rings, termed riding rings, or tires that are supported on fixed roller assemblies.
- ✓ As the dryer rotates, solids are picked up by the flights, lifted for a certain distance around the drum and showered through the air in a cascading curtain.

Feature of the Rotary Dryer :

- Efficient dryer for drying of materials with high moisture contents.
- Handles a wide size range of materials with extended residence times.
- Design permits highest possible drying temperatures.
- Drying, cooling or calcinations.
- High thermal efficiency.



Flash Dryer

- ✓ Flash dryer is used with products that dry rapidly owing to the easy removal of free moisture or where any required diffusion to the surface occurs readily.
- ✓ Drying takes place in a matter of seconds.
- ✓ Wet material is mixed with a stream of heated air (or other gas), which conveys it through a drying duct where high heat and mass transfer rates rapidly dry the product.

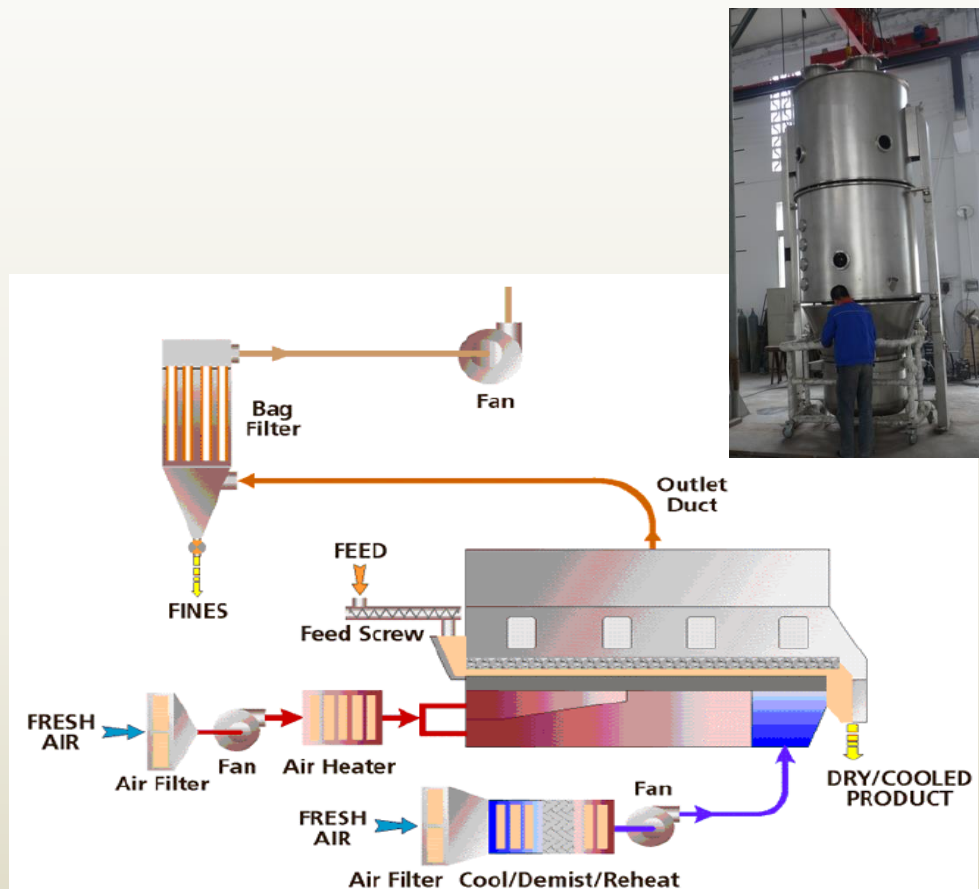
Salient features are as follows.

- Particulate matter can be dispersed, entrained and pneumatically conveyed in air. If this air is hot, material is dried.
- Pre-forming or mixing with dried material may be needed feed the moist material
- The dried product is separated in a cyclone. This is followed by separation in further cyclones, fabric sleeve filters or wet scrubbers.



Fluid Bed Dryers

- ✓ Fluid bed dryers are found throughout all industries, from heavy mining through food, fine chemicals and pharmaceuticals.
- ✓ They provide an effective method of drying relatively free flowing particles with a reasonably narrow particle size distribution.
- ✓ In general, fluid bed dryers operate on a through-the-bed flow pattern with the gas passing through the product perpendicular to the direction of travel.
- ✓ High rate of heat transfer is achieved with almost instant evaporation.
- ✓ Batch/continuous flow of materials is possible.
- ✓ The hot gas stream is introduced at the base of the bed through a dispersion/distribution plate.



Industries we are serving



Pharmaceutical



Tyre and
Rubber



Foods and
Beverages



Textile



Wood and
Paper



Ceramic and
Printing



Paints and
Chemicals



Refineries



Foundries



Glass and
Plastic



Automobile



Electronics

Industries we are serving cont...

Below are the few of industries/ Industrial applications we are serving :

Paint Baking	Powder Coat Curing	Paper Drying	Coating Drying	Paper Conversion	Printing Ink Drying
Curing of Coating on Moulds, Adhesive Drying.	Pre-drying of Dyed Fabrics	Heating of PET Perform	Thermoforming	PVC Preheating	PVC Embossing
Rubber Curing	Textile Coating & Processing	Vacuum Heating Equipments	Oil & Gas Industries	Food Processing	Pharma Industries
	Oil and Gas	Plastic Annealing	Plastic Welding	Ceramic Curing	

Industries we are serving cont...

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Paint Baking

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Paper Drying

Coating Drying

Rubber Curing

Ceramic Curing

Printing Ink Drying

Curing of Coating on
Moulds, Adhesive
Drying.

Pre-drying of Dyed
Fabrics

Textile Coating &
Processing

Thermoforming

PVC Preheating

PVC Embossing

Vacuum Heating
Equipments

Heating of PET
Perform

Oil & Gas Industries

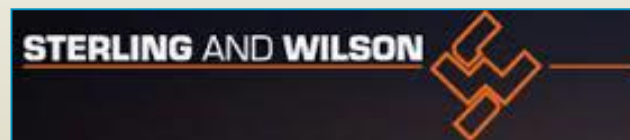
Food Processing

Pharma Industries

Oil and Gas

Plastic Annealing
and Welding

Trusted Partner of following consultants



Our Clients



Serving Across Continents





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