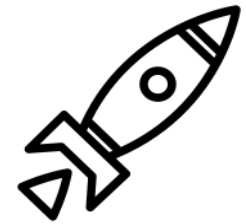








KERONE

Complete Engineering Solutions...

About KERONE

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

KERONE is pioneer in application and implementation engineering.

KERONE is possessing experience of 45+ years in engineering excellence.

KERONE has reported annual revenue of $18 to $20 Million , increasing year-on-year.

KERONE is having immense expertise in manufacturing and implementing various types of engineering solutions.

KERONE is possessing employee strength of more than 280 experts continuously putting efforts for happy industrial engineering solutions.

Our Vision and Mission

- Vision

  - Turn into world leader in providing specialized, top-notch quality and ecologically sustainable industrial heating, cooling , drying and engineering 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

Highly
Customized Product

Sound
Infrastructure

Adherence
to
Standards

Timely
Delivery

Team of experts
Delivering Quality

Cost Effective
Solutions

We are in collaboration with...

Member of AIMCAL	Member of IHEA	Strategic Partners of Emitech Italy	IRQAO Certified For Quality
Recognized and Rated by CRISIL	CRISIL Verified	Member of A.M.P.E.R.E. (Europe)	ASCB(E) Certification for Best practice

We are Certified by...

ROHS

VDE

CE

BIS

UL

ISO 9001:2008 | ISO 9001:2015 | OHSAS 18001 | EMS 14001

CO_2 Autoclaves

What is Autoclave?

An autoclave is a machine used to carry out industrial and scientific processes requiring elevated temperature and pressure in relation to ambient pressure and/or temperature. Autoclaves are used before surgical procedures to perform sterilization and in the chemical industry to cure coatings and vulcanize rubber and for hydrothermal synthesis. Industrial autoclaves are used in industrial applications, especially in the manufacturing of composites.

DEFINITION

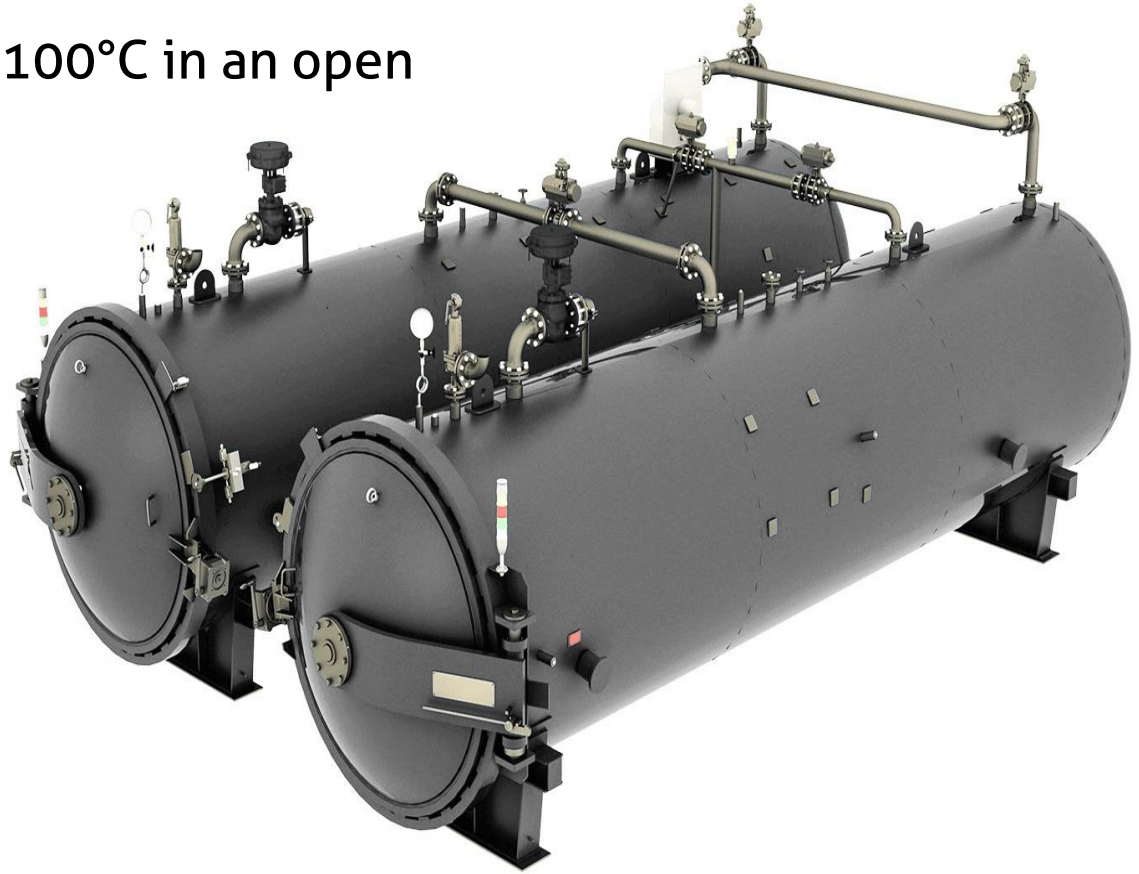
Autoclave is a pressurized device designed to heat aqueous solutions above their boiling point at normal atmospheric pressure to achieve sterilization.

Auto ⟶ self

Clavis ⟶ self locking device

Working of Autoclave Machine

- Liquid Water cannot be heated above 100°C in an open vessel.
- Boil At 100°C
- Water heated in a sealed vessel
- Pressure rises
- Boiling point of water is raised



Usage of Autoclave

- Microbiology
- Medicine
- Veterinary science
- Dentistry
- Metallurgy
- Sterilization of lab equipment

Principle

- Boiling point of water is directly proportional to the pressure when the volume is constant.

Pressure $\propto$ **Temperature**

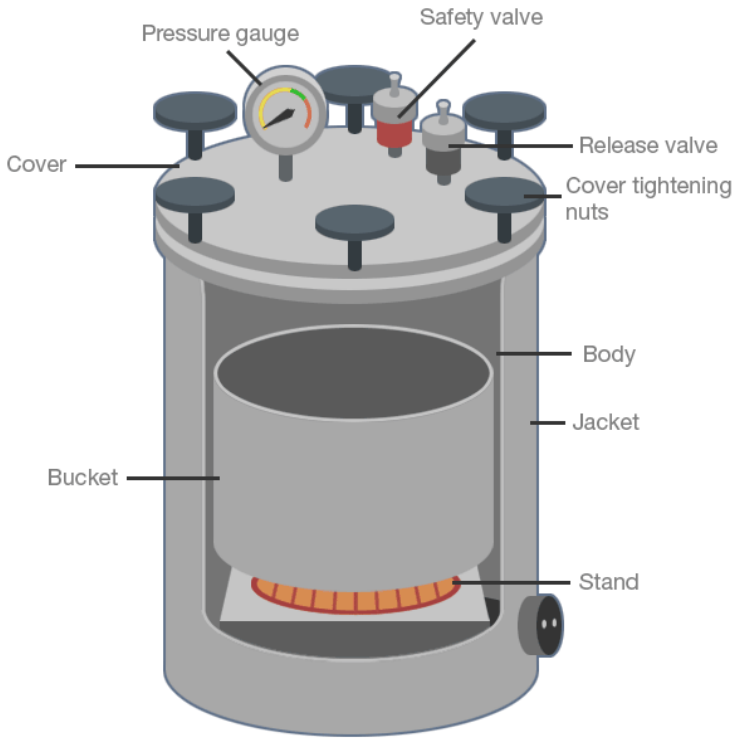
- When pressure is increased in a closed vessel the temperature increases proportionately. i.e. for about 15 pounds of pressure per square inch (Psi) the temperature rises to 121°C.

- This pressure and temperature is kept constant for 20 minutes during autoclaving.

- It is sufficient to kill all the vegetative forms and spores of the organism.

PURPOSE OF THE AUTOCLAVE

- To prepare materials for bacteriological cell cultures(test tubes, pipettes, Petri dishes, etc.) without contamination.
- Prepare elements used for taking samples. (needles, tubes, containers).
- Sterilize contaminated material.



Construction

- A cylindrical vessel made of gun metal.
- Controller with time and temperature programmable by user.
- A backlit alphanumeric two line 32 character LCD display.
- Low water level, sensor open/short alarms and cut off.
- Lid is fitted with pressure gauge, safety valve, safety fusible plug manual exhaust valve, vacuum breaker.
- Lid ensure an air tight closure in the autoclave.
- A perforated plate, which is used for keeping the material to be sterilized.
- Drain valve for easy draining and cleaning.
- Moulded Rubber Gasket and Stainless Steel carrier along with heater cover stand.

CO_2 Pressure in autoclaves

- Pressure disinfestation is harmless to humans and the environment. CARBO carbonic acid stops insect pests without leaving residues.

- Contamination of food raw materials by insect pests and their larvae and eggs causes great damage. CARVEX pressure disinfestation with CARBO carbonic acid of raw materials for food (e.g. cereals, spices, almonds, nuts, dried vegetables and fruits, certain types of vegetables, seeds and oilseeds), pet food, tobacco, herbs, tea and medicinal drugs works 100% without poison.

- CARVEX pressure disinfection cleans without leaving residues, is gentle on the product, and is toxicologically harmless and environmentally friendly. The high efficiency and rational handling improve work safety. CARVEX pressure disinfestation is officially tested.

Advantages CO_2 of pressure autoclaves

- Compact construction
- Quick-opening closure system for the shortest possible processes
- Customised design
- Proven and easy-to-maintain design for durability and reliability
- Efficient process control for reduced operating costs and emissions
- The sophisticated technology enables a fast and reliable installation
- We are glad to assist with the installation and commissioning with our staff on site.

Different types of autoclaves

✓ Heat autoclaves:

The most common source for autoclaving is heating. Here the autoclaves should maintain a temperature of at least 246 degrees for half an hour. Both dry heat or steam heat are used. For steam heat autoclaves, heated water vapors are used. Dry heat autoclaves are used for moisture sensitive surgical products or instruments.

✓ Gas autoclaves:

Also known as chemical calves, gas autoclaves use a vapor solution to sterilize its contents. Formaldehyde gas and Ethylene oxide are the sterilizing agents used in gas autoclaves. They consume lesser heat and take lesser time to complete the cycle.

✓ Ultraviolet autoclaves:

They produce UV light causing organisms.

Different types of autoclaves

✓ Cold sterilization autoclaves:

They use a cold sterilization liquid to They use a col sterilize the contents.

✓ Laboratory autoclaves:

They are used for general lab work, component and stability testing, core hardening, drying glassware, and sterilizing.

✓ Stovetop autoclaves:

In such autoclaves, the tools should always be separated to allow the steam to penetrate the load evenly. It is the simplest
autoclave.

Limitation

✓ Safety

- A very high-pressure environment
- Autoclave cracks or leaks, scald the autoclave operator.
- An industrial autoclave can operate at an even higher temperature.

✓ Environment

- Environment of autoclave carefully prepared.
- Condensate releases is extremely hot, have a supply of cold water so the condensate does not melt the drainpipes.

✓ Cost

- Building a large autoclave is expensive, because it needs insulation, water supply and sturdy metal construction.
- Cannot easily be disassembled into smaller parts.
- Steam autoclaves do not supply enough heat for some industrial processes, so need another fuel,
  her fuel, such as gas or oil.

✓ Equipment

- Reliable sterilizer
- Melt plastic equipment with its steam.
- Can't sterilize some cloth and linens without destroying them.

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ESSAR STEEL
TATA MOTORS
SAINT-GOBAIN GLASS
SUZLON
ALSTOM
Jasubhai ENGINEERING
GM
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Kalyani
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Serving Across Borders…

KERONE

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