



# SINGLE FLUID HEATING COOLING SYSTEM

Environment Friendly Engineering Solution Company



In Association with SVCH-Technologii, Moscow (Russia)

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

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

# About Kerone

KERONE now renowned name in serving specialized need of customers with best quality and economical process Heating /cooling and drying products, manufactured in high quality environment by well trained and qualified workforce(special purpose machineries) .

KERONE is pioneer in application and implementation engineering with its vast experience and team of professionals. KERONE is devoted to serve the industry to optimize their operations both economically and environmentally with its specialized heating and drying solutions.

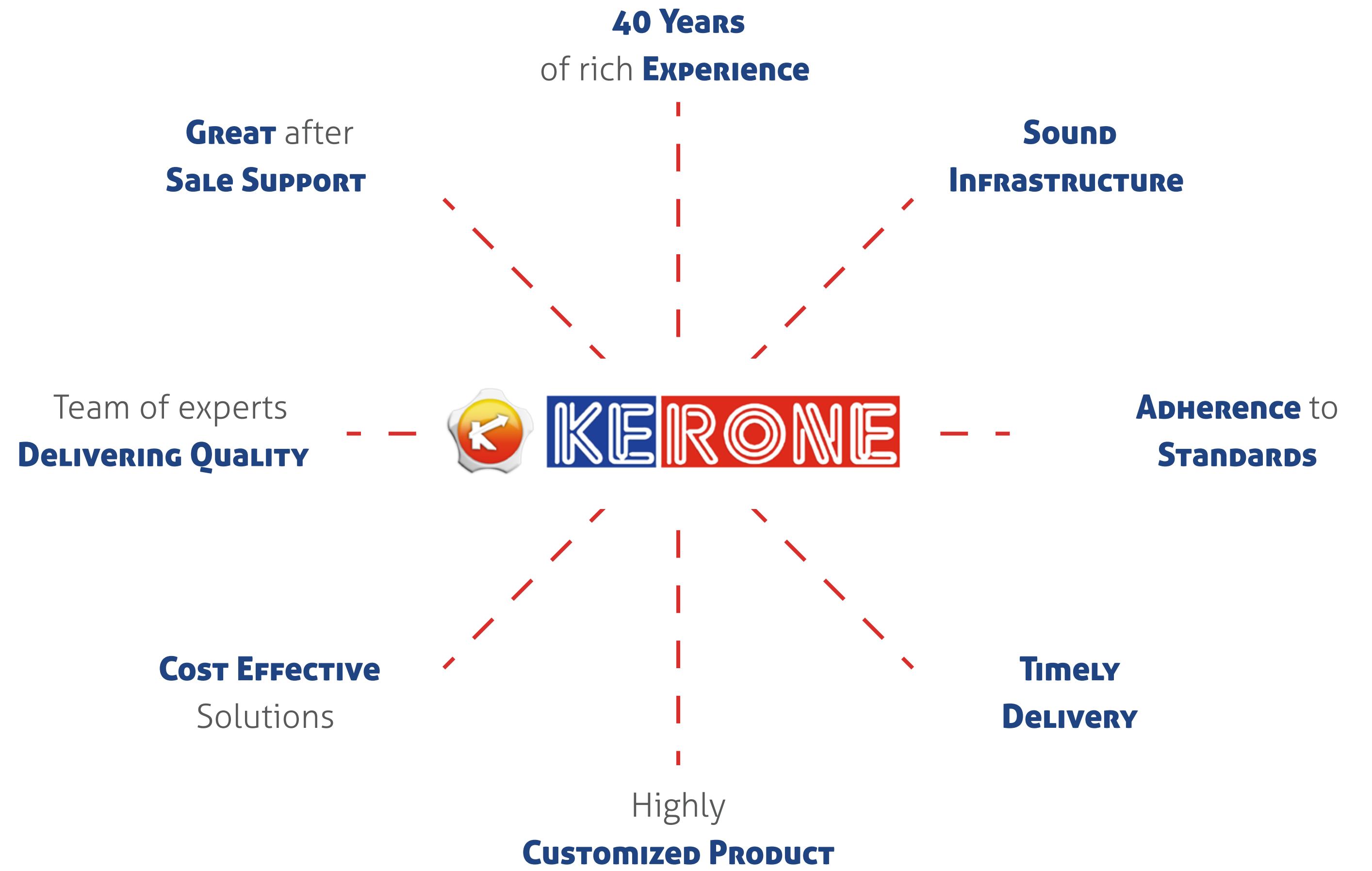
**“Enhance the value of customer operation through our customer need centric engineering solution”**

## *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.

## *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.



# Introduction to Single Fluid Heating Cooling System

Active Pharmaceutical Ingredient (API) manufacturing involves batch reaction, work-up, distillation, crystallization, hydrogenation, layer, separation, filtration and drying as unit processes. Again, batch reaction involves heating and cooling stages ranging from  $-50^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$ .

Traditionally, this was being done with multiple utilities such as chilled brine, chilled water, cooling water, hot water, low pressure steam, high pressure steam, thermic fluid etc.

KERONE is pioneer in designing, manufacturing and installation of various types of specialized heating, cooling and drying systems those are designed strictly as per the process requirement of client by our veteran team of engineers.

KERONE is well known for the superior quality and advanced technology products, hence we manufacture Traditional Heating & Cooling Systems to advance technology system.



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## Limitations

- Different heat transfer fluids (HTFs) may require separate coils, heating and cooling jacket zones or external heat exchangers.
- Time consuming changeover of HTFs and associated risks of human error.
- Cross contamination of HTFs.
- Multiple utilities can corrode the reactor jacket.
- Condensate recovery is not feasible.
- Inefficient management of HTFs leading to inaccurate temperature control.
- Process parameter deviations adversely affect product quality.
- Complicated mechanical design, and Increases capital/maintenance costs.

## Advantages

- Accurate temperature control to  $\pm 1^{\circ}\text{C}$  without risk to your reactor.
- Rapid heating and chilling profiles can be designed, reducing batch times.
- Repeatability and accurate recordable..
- Measurement for meeting FDA requirements.
- Programmable heating and cooling ramps for accurate unsupervised operations.
- Smooth, continuous temperature control, with no gaps because there is no fluid changeovers.
- Savings on expensive raw materials can be made because the yield is maximized without adding excess reactions..
- Fully automatic capability, hence less manpower required.

## Features

- Temperature range -  $35^{\circ}\text{C}$  to  $250^{\circ}\text{C}$  with precise temperature control,  $\pm 1^{\circ}\text{C}$ .
- Rapid heating or cooling, reducing batch time.
- All wetted parts are in stainless steel.
- Totally enclosed skid & mounted on wheels for easy mobility.
- No switching between jacket service fluids, preventing cross- contamination, corrosion or thermal shocks to the vessel.
- Remote control panel with flameproof enclosures (suitable for gas group IIA, IIB)
- Automation System is controlled by PLC system which can be integrated with SCADA

# Trusted Partner



# Our Clients



**KERONE**

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