



# Latsha Technologies

“Technologies for Suppliers of Safe water “

## Chlorination

- POTABLE WATER
- SEWAGE TREATMENT
- INDUSTRY WATER

## LATSHA ORGANISATION

Latsha Technologies is an Indian based company located in Industrial heart city of Chennai. Our company specializes in manufactures and supplies, including installation factory made plant, equipment and chemical for treating industrial water, waste sewage ultrapure and potable water treatment and supply.

Founded in 2014, with modern technologies and employing highly qualified personal throughout all operations it is well established as a leader in the field of water and waste treatment

## INTRODUCTION

Chlorination is widely used for disinfecting water, far exceeding other methods for producing the world's supply of drinking water free of pathogenic Organisms.

Most public utilities chlorinate before water is released into distribution system, and in many countries, it is mandatory to add chlorine to the supply of drinking water. Other organizations such as World Health and the united nation sponsor aid programs for new chlorinated water supplies, and during emergencies ,relief agencies use chlorine to stop the spread of disease from contaminated water.

Chlorinating water has been ,and remain significant in improving the health of the world's population since first used publicly in 1910.No other single factor has an equal record of protecting the number of people from the dangers of consuming unsafe water

Chlorination will continue to remain an important part of everyday life, for without safe water most of us would suffer from disease and ill health. In maintaining this need, Latsha works to provide safe chlorination technologies to equally responsible supplier of safe water

It is a shared responsibility, respected by other for the benefit of many.



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## How Chlorinator works

Chlorine added to water forms an acid which is a biocide that in certain quantities and after sufficient time, destroys pathogenic organisms making the water safe to drink

## Safe to consume

The chlorine in the water consumed by humans, converts to chlorides ,or salts, not as foreign substances but as safe addition to natural occurrences

## Advantages

Chlorine is a safe disinfection that is both economical and reliable to use . It leaves a trace amount in the water so that its effectiveness can be measured as well as remaining to combat further contamination. These benefits when added to its long record of success and easy access to scientific information makes chlorination the obvious choice of treatment

Proper application of chlorine produces bacteria-free drinking water. It also reduces spoilage thereby increasing shelf life of vegetables, meat, poultry and other foods cleansed with water. Stops the spread of disease in swimming pools, controls slime and algae in cooling water and prevents many other problems caused by micro organisms.

Chlorination uses five basic methods to treat water. By far the most common method uses **Chlorine (CL<sub>2</sub>)** as gas held under pressure in cylinder. For safety reasons it is mixed under vacuum within an ejector to form a concentrated solution before dosing into water to be treated

The other forms of chlorine used in water treatment and described elsewhere are :

- Chlorine dioxide (**CLO<sub>2</sub>**) is gas produced at its point of application by two reactive chemicals .Its disinfection power is not affected by pH and results in a neutral taste and odourless water making it suitable for particular applications
- Electrolytic sodium hypochlorite (ESH), or referred to as onsite chlorination, is produced at the point of use from common salt by electrolyzing brine. Increasing popular as an alternative to the other forms as it requires no chemical or safety precautions.
- Sodium hypochlorite (NaOCL) is in liquid form and normally diluted with water before dosing with a metering pump. It is commonly used in colder climates as an alternative to gas
- Calcium hypochlorite Ca(OCL)<sub>2</sub> obtained in dry form and dissolved in water before dosing with a metering pump. It is used mainly in warmer climates as an alternative to sodium hypochlorite
- Disinfection such as ozone, ultra-violet, iodine, bromine silver and other are also used. whilst not as common as chlorine they play an important part , having benefit and advantages over the use of chlorine in certain application

## Latsha Chlorination plant

Latsha Supplies chlorination equipment and plants for drinking water supplies , water and sewage treatment , and industrial water treatments

The scope of work covers the supply of standard equipment, and the design and supply of simply and complex installations from design stage through to commissioning. All work is carried out by experienced and qualified process engineers, aided by computerized technology and CAD design facilities. Advice is provided on any matter relating to safety and reliability as well as the control principle for specific enquires.

The scope includes large and small chlorinators, cylinders and drums, equipment for automatic control, standby facilities, health and safety protection and chemical handling.

All the chemical ,mechanical and electrical equipment including the construction of the plant installed under the control of Latsha, is in accordance with the standards set by internationally recognized organization ,and where specified plant is handed over , ready –to-work complete with spares , piping and valve ,markings , warning labels , operating and maintenance instructions, testing and commissioning.

## GAS CHLORINATOR

Chlorination Equipment designed as per IS: 10553./Chlorine Instituted Std. The LATSHA Chlorinator All-vacuum Operated, solution feed type, designed for mounting directly / wall mounted/ pedestal mounted.

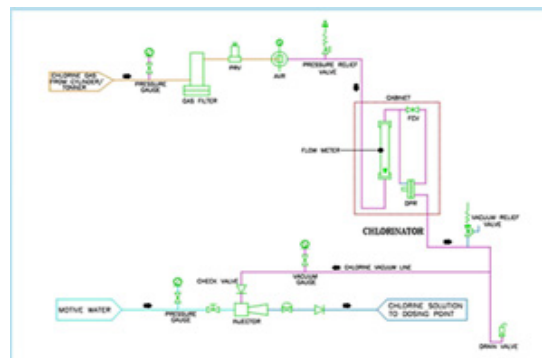
Ranges from 100gms to 200kg/hr

IS:10553 Part-2 (1983 ) Vacuum Feed type Chlorinators (CED 24 Public Health Engineering )STD

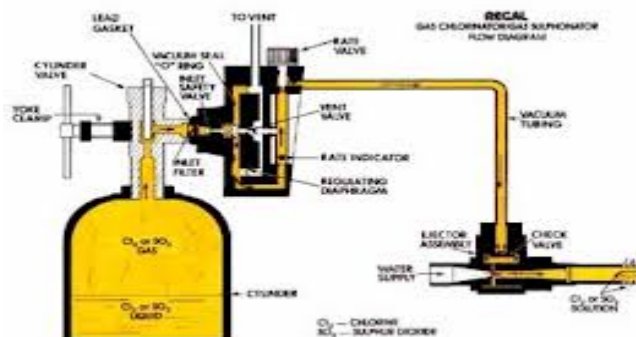
## FRAME MOUNTED CHLORINATOR



## SAMPLE P&ID



## CYLINDER MOUNTED CHLORINATOR



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## CHLORINATION PLANT IMAGE



## GRAVITY FEED GAS CHLORINATOR

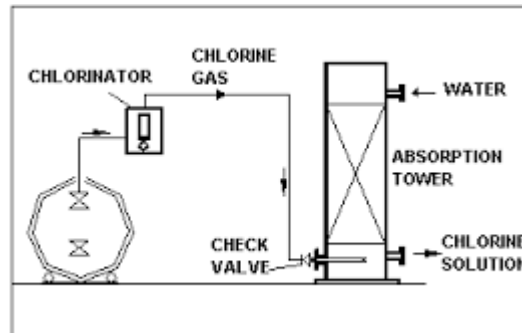


## CHLORINATORS ACCESSORIES



We have gained expertise in delivery a quality range of Gravity Feed Chlorinators that is manufactured using high grade raw materials. Our range of gravity feed chlorinator is extensively used across the globe for sterilizing process

IS:10553 Part-4 (1983 ) Vacuum Feed type Chlorinators (CED 24 Public Health Engineering )STD



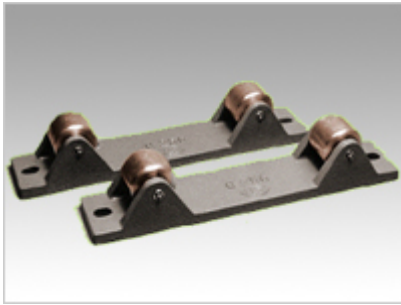
- Ensures continuous and constant quantity of chlorine solution by using a packed Absorption Tower.
- Capacity normally ranges from 200 Gms/hr to 40 Kgs / hr of Chlorine. [Higher capacities can also be provided on request ]
- Simple design, very easy to operate and maintain.
- Fewer spares, less operating costs.
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- Yoke & Additional Tonner Valve as per IS : 3224
- Coiled Copper Tube
- Manifold valve/ Isolation valve /Chlorine Valve
- /Cylinder Valve as per IS: 3224
- Pressure Reducing Valve
- Gas Filter
- Ball valve
- Pressure Relief Valve

- Chlorine cylinder and one ton container wrenches manufactured to the Chlorine Institute standards.
- Wrenches
- #635 - 1-1/4" Open-End x 3/8" Square, Valve Wrench
- #635X - 1-1/4" Open-End x 3/8" Square, Valve Wrench, Twisted

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**TONNER ROLLER SUPPORTS**



**TONNER ROLLER SUPPORTS OR TRUNNIONS**

Function: To hold the Ton Containers securely in Place and also to facilitate the Positioning of Ton Containers, so that the inbuilt Valves [Gas side and Liquid Side] lie one over the other vertically

**TROLLEY TYPE AIR BREATHING APPARATUS WITH TWO FACE MASK**



**DOUBLE STAGE SELF CONTAINED OPEN CIRCUIT AIR BREATHING APPARATUS**



**GAS MASK WITH CANISTER FOR MINOR LEAK**



The Gas Mask with Canister is designed to enable the wearer to breathe fresh air in a contaminated atmosphere, after absorption of impurity of inhaled air by the chemicals filled in the canister. These are applicable for small leaks only. The gas mask incorporates exclusive design features conforming to IS: 8523 : 1977. Canister type respirators must never be used in atmosphere containing less than 16% oxygen.

**COMBINATION EYE WASHES/SHOWER EP-520. ISO9001. ANSI**



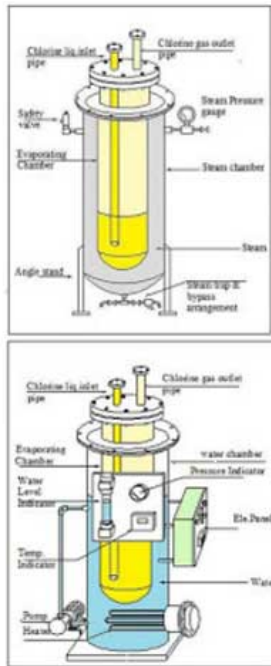
**SPECIFICATIONS**

Head: 10ABS plastic in Safety Yellow head, ABS plastic eye wash. Valves: Shower valve is making of the 1 corrosion- resistant brass galvanized ball valve. Eye wash valve is making of the 1/2 corrosion- resistant brass galvanized ball valve. Water supply and outlet: 11/4IPS. Flow control: Shower: 105-114L/Min. Eye Wash: 9.8L/Min. Hydraulic pressure: 0.2MPA~0.8MPA Original waster: Clean or leached water.

## LATSHA TECHNOLOGIES CHLORINE EVAPORATORS

Chlorine evaporators are for use in connection with large-scale chlorination or intermittent chlorination plants where the amount of chlorine consumed per unit of time is higher than the amount that can be produced in the chlorine cylinders and/or tanks by the process of natural evaporation. Natural evaporation produces an amount corresponding to roughly 1% of the content of all chlorine containers connected at the same time. The evaporator consists essentially of an evaporator coil placed in an Electrically heated water-bath, the temperature of which is controlled. Depending on the version, 30 or 220 kg/h liquid chlorine can be converted into the gas phase. The water-bath is equipped with a level probe and a magnetic valve for constant level monitoring, and with an electrode for low level control. If the low level electrode is activated due to insufficient water supply, the evaporation heating is switched off immediately and the quick-acting shutoff valve at the evaporator outlet is closed. The quick-acting shutoff valve is a ball valve which is operated either pneumatically by spring return or electrically by accumulator return. In the case of a pressure or voltage loss the ball valve "closes" within seconds.

The temperature is maintained by means of a contact thermometer at between 68° and 72°C. The regulating contact thermometer has two break contacts, which cut off the current to the heating rods in two steps after the required evaporator temperature is exceeded, and reconnect the current supply depending on the chlorine consumption. The temperature of the water can also be read from the contact thermometer. The evaporator is equipped with two thermostats for maximum and minimum temperature monitoring. These contacts respond if the temperature falls below 60°C or exceeds 80°C. The latter causes an immediate shutdown of all heating power as well as an acoustic and visual alarm



If the temperature falls below 60°C, this causes an immediate closure of the quick-acting valve at the evaporator outlet, thus preventing any liquid chlorine from entering the metering system as a result of further cooling. A contact pressure gauge with a minimum "make" contact (lack of chlorine) and a maximum break contact (chlorine pressure and thus possibly also temperature too high) is set to 1.5 and 12 bar, respectively. The minimum "make" contact can either produce an acoustic signal indicating a lack of chlorine or at the same time activate the chlorine tank change-over device to switch to a full container. The maximum break contact produces an acoustic and visual alarm and switches off the evaporator heating immediately. If the chlorine pressure - due to incorrect operation of the evaporator - exceeds 15.5 bar, the safety disk alarm will respond. This immediately directs the flow of chlorine gas into a collecting vessel or into solution tanks provided for the purpose. The alarm contact switches off the heating at the same time. The heated water container and the evaporator coil are both steel. They are protected against corrosion by the cathodic protection method. The evaporation coil is integrated in a support frame. The front consists of a plastic enclosure with a panel cutaway section, with detachable cover panels at the sides.

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## CHLORINE GAS NEUTRALIZATION SYSTEM

### DESCRIPTION

Chlorine gas leak neutralization system consists of:

- ❖ MSRL /FRP PP CAUSTIC SOLUTION STORAGE TANK
- ❖ FRP PP ABSORPTION TOWER HAVING PALL RINGS
- ❖ CAUSTIC PUMPS
- ❖ MS FRP BLOWERS
- ❖ FRP PARTIAL/FULL HOODS
- ❖ FRP DUCTING
- ❖ CHLORINE GAS LEAK DETECTOR RELAY
- ❖ BASED CONTROL PANEL



**CHLORINE LEAK ABSORPTION SYSTEM**

Increased and widespread uses of chlorine in modern technology and the accompanying demand for a dependable safety equipment to combat chlorine leakage has necessitated the development of a suitable chlorine Leak Absorption system.

According to the "Compressed Gas Cylinder Act" Government of India, it is necessary to obtain a storage license when five or more containers are to be stored.

### System Design

The moment the Chlorine leak is detected by any of the sensors, the blower would start automatically sucking the Chlorine air mixture through the hood on leaking ton container and only air through the other hoods on the non-leaking ton containers or through the ducting laid in Chlorine Ton Container room. Simultaneously the caustic re-circulation pump would start working, taking the caustic solution from the tank and pumping it to the top of the tower. This caustic solution gets sprayed through the nozzles in the tower over the PP pall rings. The gas air mixture travels in the tower from bottom towards the top whereas the caustic solution travels from top towards the bottom. Hence with this counter current travel, the Chlorine gas gets neutralized by the caustic solution as the packed portion provides the required contact tank. The air discharging at the blower outlet is practically free of Chlorine gas. The Suction of Blower is connected at the Tower Outlet on top of the Tower. In this way the complete system is under small vacuum which is much safer. The over flow pipe of of caustic tank is just dipped in a water level more than the suction capability of blower. This creates a seal so that air cannot be sucked through the pipe dipping in water seal tank.

By any chance if the first blower does not start automatically, there is a provision through the control panel that the damper on the suction of this blower closes and the standby blower starts when its damper opens automatically. Similarly for the caustic re-circulation pumps if one does not start, the other would start automatically. In this way the leaked Chlorine gets automatically neutralized without any manual operation. However, the system is to be switched off manually when sensor does not show presence of Chlorine in the atmosphere. We have number of installations of Chlorine Gas Leak Absorption Systems in India safeguarding the chlorine storage & chlorine in the process.

**This system is designed for neutralizing chlorine gas leaking from one ton container in one hour time.**

The tank and the scrubber fabrication is as per BS4994.

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## LATSHA Products list:

1. Gas Chlorinators (Vacuum Type / Gravity Type Chlorination systems)
2. Chlorinators Accessories spares \_Coil Copper tubes , Lead washer/Gaskets , Chlorine valve, Chlorine Isolation Valve ,Manifold Valve, Instrument Isolation Valve , Pressure Reducing Valve, Safety Valve , Gas Filters, Etc
3. Electro Chlorinators
4. Electrical Evaporators
5. Steam Evaporators
6. Auto Chlorine Absorption System
7. Chlorine scrubbing system
8. Auto Chlorine Tonner Leak Detection system
9. FRP Vessels
10. Chlorine cylinders /Tonners
11. (Petroleum and Explosives Safety Organisation) Storage, Handling certification Licenses
12. All Type of Valves ( IS : 3224 Valves , Ball valves IS: 3224 Valves , CS Ball valves ,Electric/Motorised Auto shut off valves , Electric /Motorised Auto change over valves, Pneumatic Auto shut off valves , Pneumatic Auto change over valves, Control valves, Butterfly valves / Diaphragm Valves / Check valves, PP Diaphragm Valves , PP Ball Valves , PP Butterfly Valves, PP Check Valve
13. Safety Accessories: Self Air Breathing Apparatus ( 30 /45 Minutes), Air Compressor , Emergency KITA & B, Emergency Eyes wash showers.
14. Handling Accessories: Tonner Roller supports, Lifting Beam with adjustable Hooks, Electric Hoist,
15. Monitory and Testing Devices: FRC Analyzer, Portable Chlorine Leak Detector, Chlorine Leak Detector, Chlorine Testing Kits, pHMeter
16. Centrifugal Blower
17. Booster Pumps / Dosing Pumps, Etc...

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