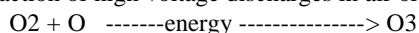


Chemical free & environmentally friendly material

Ozone

A material from the pastwith futuristic applications

Discovered in the 19th century Ozone, a allotropic form of activated oxygen generally produced during lightning storms and continuously occurring in the stratosphere due to action of ultraviolet (UV) rays, is being rediscovered in the 21st century. This naturally occurring compound may be artificially produced by the action of high voltage discharges in air or oxygen as follows,



This unstable form of oxygen breaks down to oxygen molecules and oxygen atoms which have a high oxidation potential. If we examine the oxidation power of Ozone by measuring its REDOX potential we find that O₃ is about 5 times more oxidising than oxygen and about twice as much as chlorine. This high potential increases its reactivity with other elements and compounds. Ozone is about 20 to 50 times more reactive than chlorine and permanganates as is well documented by its high kill rate of micro-organisms (Funguses, Bacteria & Viruses). This high kill rate equates to smaller retention times and storage tanks for the same level of disinfection as other oxidants. In other words the capital cost for building these tanks and treatment plants is considerably reduced.

Ozone is a God given gift to all developing nations, most of which lack adequate chemical handling, storage, transportation infrastructure and production facilities. Ozone requires only electricity which is readily available from hydro, solar, wind or fuel electric generators. For the developed countries O₃ will allow decentralisation of services which will provide greater flexibility and better cost management.

Here is non exhaustive list of Ozone applications where data & references are available:

Ozone chemical free treatments and applications

| <u>Waste water effluents</u> | <u>Industrial /Agriculture</u> | <u>Food Industry</u> | <u>Others</u> |
|------------------------------|--------------------------------|---------------------------------------|-------------------------------|
| Domestic/Municipal | Cooling towers treatment | Drinking & water bottling | Smoke & odour treatment |
| Pulp & paper | Boiler water treatment | Grain silo disinfecting | Semiconductor wafers clean |
| Mining (Cyanide, Arsenic) | Chilled water treatment | Fruit & vegetable storage | Laundry water recycling |
| Pharmaceutical (Phenol) | Cutting fluids recycling | Meat storage | Med. instrument sterilisation |
| Textile | Barn disinfecting (air/water) | Slaughter house disinfecting | Hospital air sterilisation |
| Leather | Hydroponics | Fruits & vegetable wash | Aqua-culture |
| Petroleum/Petrochemicals | Animal waste treatment | Food containers sterilisation | Paper pulp bleach |
| Electroplating | Water dripping treatment | Wine/Beer SO ₂ replacement | Sour gas desulfurisation |
| Heavy metal precipitation | Animal drinking water | Chicken egg wash | Zebra mussels treatment |
| Landfill leachates | Irrigation water disinfecting | Ozonated meat grinders | Rubber recycling,.....etc. |

This begs the question: if O₃ is so good why is it not widely spread? The answer is simple. Up until recent times mid-range Ozone generators were very expensive costing an average \$ 7000 US/Lb/day. Today, with advent of new materials, power supplies, high frequency generator prices are starting to go down to around

\$ 4000 US/Lb/day and are expected to decline further still to \$ 2000/Lb/day or even lower in the near future. At this price level Ozone will compete with the other oxidising alternatives such as Chlorine, Hydrogen peroxides,.....etc.

The time has come when this chemical free technology is an affordable reality.

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OZOMAX FEATURES & ADVANTAGES

FEATURES

ADVANTAGES

AIR COOLED or
WATER COOLED

Ozomax Air cooled models are easy to install and maintain because no complicated water cooling is required with the pre/post treatment of the cooling water.

Ozomax ozonators can be also water cooled with a closed loop indirect cooling avoiding direct cooling problems

AIR FEED or
OXYGEN FEED

Ozomax can be either Air fed or Oxygen fed to produce more than 2% by weight concentration with Air & up to 10% by weight with Oxygen. This high concentrations in the gaseous phase provide high solubility of O₃ into the water and increase drastically the reaction rates.

POWER CONSUMPTION

Ozomax's power consumption per unit weight of ozone is one of the lowest in the market in all categories and the lowest in the mid-range category. The power listed in catalogues includes electrical consumption for the fan or blower cooling. With the introduction of high frequency power supply further power consumption reduction will be attained.

COST OF GENERATORS

Ozomax's price per gm of ozone produced is the lowest in the market. This is due to its simple patented design and ease of material availability

MAINTENANCE

Ozomax's generators when installed as specified will give years of reliable performance with minimal maintenance cost.

SERVICEABILITY &
EXTENDIBILITY

Ozomax's system will require no special tools to maintain and replace used tubing or lamps. No complicated or exhaustive training is required to maintain Ozomax's generators.

Due to the modularity of the Ozomax's generators it can be expanded to increase its capacity easily by 10 to 30 % depending on the model.

APPLICATIONS

Most of water & Air treatment applications are studied & being studied in Ozomax's labs world wide with the generation of mathematical computer modeling to provide performance predictions of overall systems, this is unique to Ozomax an Ozone generator manufacturer.

WARRANTY

One full year warranty against any manufacturing defects which can be extended if client purchase service contract.

INNOVATION

Ozomax owns USA, Canadian and Chinese patents & patent pending on the generators and applications.