O-MEGA Frequently Asked Questions (FAQ's)

If you have a question that is not listed above, please contact us at info@vapex.com or use our quick Information Request Form.

Can I use an O-MEGA to replace my chemical scrubber?

Answer: In some cases, small cfm air flow scrubbers have been replaced with O-MEGA systems. The hydroxyl radical fog produced by the O-MEGA needs a 7 to 10 second reaction time to break down offensive, airborne Hydrogen Sulfide (H_2S). Most often, the air going into a chemical scrubber is traveling at a rate too high to allow for this reaction time. An O-MEGA system could be used to reduce the load on a scrubber rather than replace the scrubber.

Some customers, in very odor sensitive areas, use a scrubber as a polishing stage to back up the O-MEGA, with the O-MEGA doing the heavy lifting. This significantly reduces the need to replace costly scrubber media. This two-step odor control configuration also provides a back up if one system is temporarily down for repair or maintenance. Vapex does not recommend using and O-MEGA prior to a bio-scrubber system.

A benefit of the O-MEGA is the ability to turn it up or down as needed; how does that work?

Answer: Each O-MEGA model is rated for maximum output. Generally a customer should choose the smallest (and least expensive) model to treat the maximum expected Hydrogen Sulfide (H_2S) reading. That said; each O-MEGA model can be simply adjusted down to as low as 40 percent to 50 percent of its maximum output.

After a week or two of operation, the O-MEGA hydroxyl radical fog typically reduces the grease and biofilm in the well enough to allow the unit to be turned down. This not only saves wear and tear on the product, but it also prevents any excess ozone (not needed to treat H_2S) from being present in or escaping from the reaction chamber.

How do I know which O-MEGA model is the right size for my application?

Answer: The size or model of the O-MEGA required to treat odors depends on several factors including volume of air space, surface area, turbulence of the waste stream, peak levels of H_2S, and air flow. As facilities and environments can vary significantly, it is best to contact a Vapex sales representative to help determine the correct model for your application. Please call our toll free sales line at 1-888-907-0004, e-mail sales@vapex.com, or complete the Information Request Form on our website.

What is in the fog created by the O-MEGA?

Answer: The patented nozzle used by the O-MEGA creates tiny water droplets containing hydroxyl ion ($^{\bullet}OH$) radicals. In this (bubble) form the $^{\bullet}OH$ radicals become one of the most efficient hydrogen sulfide (H_2S) oxidizing agents. The fog is 99 percent water by weight.

Click Here, to see the chemical content of the fog.

Are there any other helpful effects of the O-MEGA fog, beyond odor reduction?

Answer: Yes. Corrosion is commonly caused in concrete wet wells by the acidic conditions created by hydrogen sulfide. With the continuous application of the O-MEGA's neutral pH fog, the pH conditions in the well will become more neutral and less acidic.

Also, in many cases the O-MEGA can be installed to prevent buildup of Fats, Oils, and Grease (FOG) in wet wells and other similar wastewater containers. The O-MEGA does not create an emulsion but oxidizes the fatty acids; therefore, they do not re-form downstream and no downstream processes, from headworks to disinfection, are affected. Because the make-up and amount of grease varies so much depending on the location of the pump station, Vapex does not guarantee this grease reduction benefit in all locations.

What about any negative effects of the fog?

You probably already know that exposed ferrous metals in your infrastructure will rust in a humid environment like a pipe or well holding wastewater. The water-based fog produced by the O-MEGA will increase the humidity in the areas of the chamber not normally exposed to the wastewater. This is not usually a problem because most pump stations, screens and other areas treated by the O-MEGA are made of metals that are rust proof.

Also, the by-products of the reaction between the O-MEGA fog and the Hydrogen Sulfide (H_2S) produced by the wastewater can, over time, harden and then crack the natural rubber exterior of power cables used by a small number of pump manufacturers on their submersible pumps. To avoid this, the pump cables located inside the wet well should consist of a synthetic material compatible to sulfuric acid >10% and ozone; or they can be sleeved with a discharge hose made of PVC material.

For more information, Click Here.

I heard that the O-MEGA uses ozone to treat H_2S odors, not hydroxyl Ion radicals. Why is that?

Answer: This statement is not accurate. Inside the O-MEGA cabinet, a very low volume at high concentrations of Ozone is created and fed to the nozzle. At the nozzle, the ozone is combined with air and water to form the hydroxyl ion radical and released into the treatment area as very small fog droplets. As the fog reacts with the H_2S, Sulfur compounds are generated and this reaction is then diluted within the fog water particle, condensed, and returned to the waste stream.

For more information, Click Here.

Is there any risk of undiluted ozone leaking from the O-MEGA cabinet?

Answer: Vapex strives to continuously upgrade its products to incorporate the best and safest technologies available. The newest ozone generation technology has no leak potential and is capable of handling pressures of up to 160psi – well beyond the O-MEGA system's oxygen concentrator output of 5psi and ozone at only 5psi. This new ozone generator has built-in monitoring and self-correction technology that adjusts to changes in temperature and pressure and includes an auto shut-OFF when conditions are not correct. Vapex tested this technology in 2009, and incorporated the new ozone generators beginning in 2010, for all O-MEGA models. However, should some unforeseen event occur, Vapex recommends utilizing an outdoor exhaust vent for all indoor installations.

Isn't Ozone harmful to my health?

Answer: Yes. While ozone is an oxidant, not a poison, it does present some health risks at sufficient exposure levels (refer to MSDS and NIOSH information below). However, when the O-MEGA system is used properly, there is no exposure to such ozone levels. Should some unforeseen event occur to cause an ozone leak, the system should be immediately shut down. The unique and noticeable odor of ozone serves as a safety indicator.

The O-MEGA system is not designed to release pure ozone. Rather, by the time the ozone generated in the O-MEGA cabinet is combined with air and water through a patented nozzle to form the hydroxyl radical fog entering the treatment area, it is highly diluted. The fog as applied over the waste stream in an enclosed area consists of 99 percent water by weight. The O-MEGA system is not designed for the hydroxyl radical fog to be dispersed into an environment in which people are continuously present. If entry into the area being treated with the fog is necessary, it is best to force ventilation into the enclosed area before entry, just as you would for ventilation of Hydrogen Sulfide (H_2S) gas. Remember even if the fog has removed the odors the reactants are still present and constantly being generated at the source. Before entry, Vapex recommends turning OFF the O-MEGA and allowing the airspace to ventilate for 15 to 30 minutes. Then, follow the confined space entry procedures posted for that location.

Any emission via reaction terminating vent stack should be significantly below any levels of concern to the surrounding area.

Click here for ozone MSDS information or visit the National Institute for Occupational Safety and Health (NIOSH) pocket guide for ozone at http://www.cdc.gov/niosh/npg/npgd0476.html.