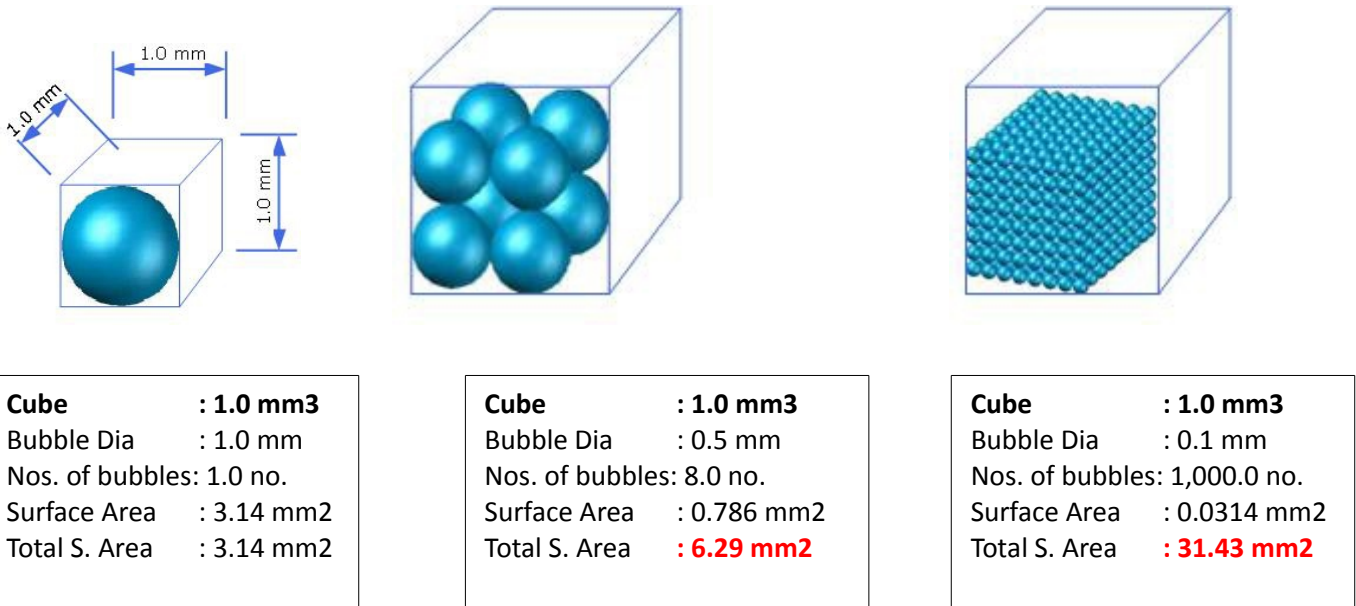


## Fine Bubble Titanium Dome Diffuser

Ozone gas produced by the Ozone generator has to be dissolved in the water medium. The quantity of Ozone which is actually dissolved in water is only useful. The most optimum technique of Ozone gas dissolution in water decides the Ozone gas to water transfer efficiency. One of the techniques of dissolving Ozone in water is by using fine bubble diffuser. The efficiency of this fine bubble depends upon maximum surface area which comes in contact with the water medium. Finer the size of bubble more in the surface area which comes to contact with the water medium for gas to liquid transfer. In fig No.01 it can be seen that finer the bubble more will be the number of bubbles in the same volume & more overall surface area.

### Ozone Bubble Size Calculation:



**Fig 1: Fine Bubble Calculation**

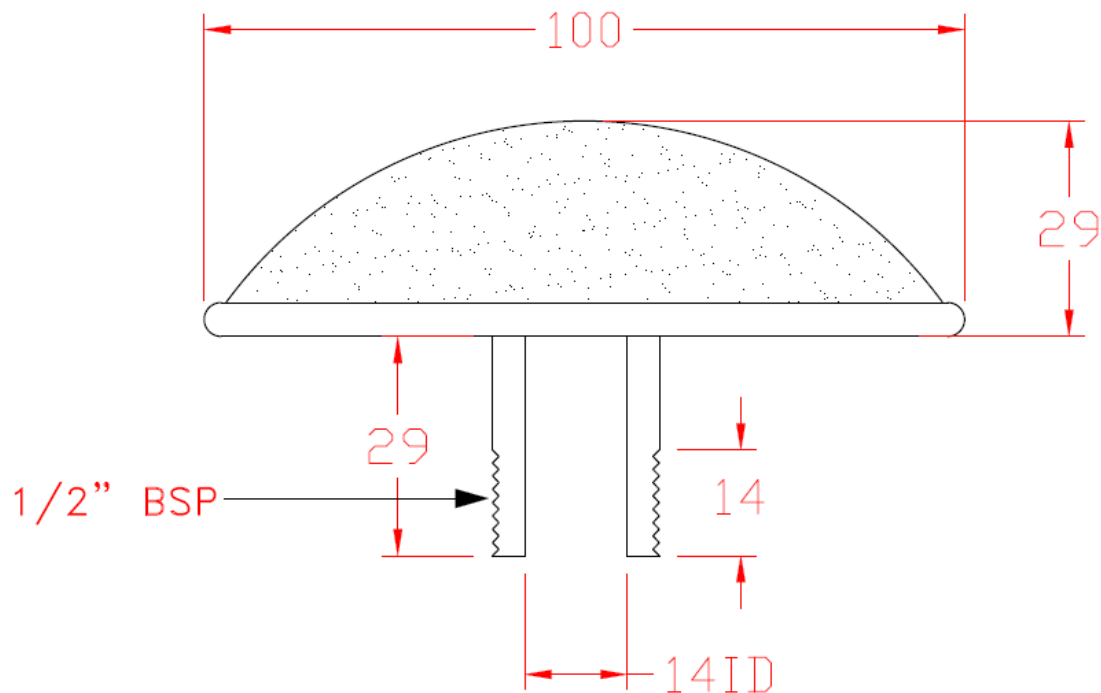
The fine bubbles of Ozone travels from bottom to top this is the only part where Ozone bubble can get dissolved in water, when depth of water is limited on less the travel distance of these bubble is also less & transfer efficiency is poor. Also when water depth is less the back pressure exerted by water on these bubble is also less due to which it demands for stable & long time generation of finest Ozone bubble. In the process when these bubbles travel from bottom to top, they get combined with adjoining once. This way there size increase, which eventually reduces the surface area per unit area of water & as a result transfer efficiency. Also when these bubbles reach at the surface they eventually burst on the surface of the water. In this way Ozone gas which is in bubble from escapes in air, losing the produced Ozone gas.



**Fig. 2: Titanium Dome Diffusor**

These fine Ozone bubbles are produced using, specially designed Titanium dome diffusor for the Ozone application, refer Fig.2. Dome diffusor mechanically produces possible finest bubbles/ The Ozone gas when passes through the micro porous holes, over the period of time increased the pore size. Eventually increasing the bubble size & reducing the Ozone gas transfer efficiency.

To maintain the pore size material of construction is of Titanium, which has very high resistance to Ozone. This results in generation of micro porous hole for a very long time, maintaining the Ozone transfer efficiency. Generally the life of diffusor is 5,000 working hours. Standard operation time is 10 – 15 minute per batch & if diffusion is used for 2 hours /day [08 batches per day], it can last for more than 6-8 years.



**Fig. 3: Titanium Dome Diffusor**