

Airborne 10 – Surfactant Induced Absorption Technology

Breathing fresh air into your environment

Eliminate bad smells and please your neighbours, staff, customers and the authorities.

What is an offensive odour?

They are gases, which are travelling at thousands of kilometres an hour. Hard to believe. Yes it is but try this out. Put a container with something very smelly inside in a room with little or no air movement remove the lid and move to the opposite side of the room, it will not be long before you can smell it, the substance has reached your olfactory nerves.

If it is travelling at such speed why is it not instant?

The speed a gas molecule travels at is proportional to its mass, the smaller the mass the faster the speed, but the air is full of other molecules which are continuously crashing into each other, so our offensive odour molecules can not travel in a straight line and after millions of collisions it finally reaches you. How do we know that they have these collisions, well very simply this is what air pressure is, put more air molecules in a tyre and the pressure goes up.

How does Airborne 10 work?

It alters the solubility and also the effective area or interface of the water droplet by something in the order of 500 000%. It achieves this by having its hydrophilic (water loving) end in the water and its hydrophobic (water hating) end in air. This happens immediately the droplets are formed, this means that our 50 micron droplet

that had a surface area of 7,855 square microns and effective volume of 65,458 cubic microns has now got an effective area of 39,275,00 square microns and an effective volume of 8,182,227 cubic microns. Now when we go back to our collisions we can see why this is important. The bigger the effective volume and the area of our droplet the more effective it is at catching the pollution molecules, the mass of our water droplet is huge in comparison and is just about floating in the air. When we look at the size of our pollution molecules Hydrogen Sulphide, for example, has an atomic mass of 34.08 this means that it is less than 1,000,000,000th the size of our 50 micron droplet, even a very big pollutant molecule like Skatole with a molecular weight of 131.17 is very small by comparison when they collide with our droplet they are caught forming a solute. This makes the droplets heavier so they drop to the ground where they are broken down by the natural bacteria present.

Air Assisted Nozzles

Our revolutionary air atomising nozzle is a self-clean non-drip completely stainless steel unit, which means very low maintenance and no corrosion enabling us to offer a 10 year guarantee on this product. It uses only 5 litres of water per hour and less than 1cfm of air, making this an extremely environmentally efficient nozzle.



Using this system, we can treat a small area or a whole works from one control unit. These nozzles can be used in conjunction with timed, zoned or wind directional systems to ensure maximum cover at a minimum cost.

Ok, so far so good. But why don't we make our droplet sizes even smaller?

Well what we have found is that if they are too small they will flash evaporate into the air that is no good, as they are lost for our purposes.

We can now see the importance of having the correct droplet size but how do you achieve this. This really is horses for courses and depends on many variable factors, but one thing to consider is the ability of the equipment to consistently deliver the correct droplet size. The best would be in the order of 80% the worst considerably less.

It is a false economy to buy cheap atomising equipment that will either not do the job consistently or because of the droplet efficiency will be very expensive to run.

Description of technology.

The removal of pollution from the air by absorption into water, enabling biodegradation of the pollution to proceed, in an extremely cost effective manner.

Airborne 10 uses the piggyback effect of one surfactant on another to achieve a broad spectrum Hydrophile Lipophile Balance. This means it tends to be schizophrenic in character adjusting its

self to the environment it's in at the time. It is able to absorb both acidic and alkali pollutants at the same time. At dilution rates previously unheard of, it removes a range of Air pollutants so large that to date we have been unable to list them. Airborne 10 in its diluted form also uses the Kinetic Laws of matter to trap the gas molecules in 2 different ways. (1) Energy is transferred from the normally hotter gas phase to the cooler droplets when they meet. This removes some of their kinetic energy. (2) The laws of mechanics, which apply to the collisions of molecules, indicate that the molecules will have the same kinetic energy. The kinetic energy of a molecule is $0.5mv^2$ where m is the mass and v is the velocity. Therefore at a particular temperature a heavy molecule moves more slowly than a light molecule, because as the mass increases the velocity decreases. When a V.O.C. or gas pollutant molecule collides with our 50-micron droplet (which is made up of molecules in a liquid state) it meets a mass millions of times its own and is absorbed to form a solute. This also has the effect of speeding up the biodegradation process by presenting the pollutants to the bacteria in a water-soluble form.



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