Odour Control Solutions

Odour Control - The Facts

In certain industrial and commercial environments, unpleasant smells can be a constant source of aggravation both for those tasked with managing the level of odours, and for those experiencing them. So what are odours and how do they affect the environment around us? And more importantly, what technologies are available that can help?

What causes odours

Odours are caused by 'volatile organic compounds' (VOC's) present in the atmosphere, which are then detected by humans by sense of smell or 'olfaction'. Odours can be complex and extremely stubborn! Furthermore, because humans are able to detect odours at extremely low levels, a small amount of odour present in the air can cause a huge amount of trouble.

There are many different types of odours, over 200 in fact, but some of the most common in industriaL, commercial, or waste management environments include hydrogen sulphide (rotten egg odour), ammonia (urine odour,) methyl mercaptan (rotten cabbage/food odour), trimethylamine (rotten fish odour), and many more. These kinds of odours tend to be a result of the presence of bacteria or other organic material, and often can be easily detected by humans at only a few ppm. That means that there only needs to be a couple of odour molecules in every MILLION particles of air to cause problems. And in fact when some odours (such as hydrogen sulphide) get to very high ppm levels, they can become more than just a nuisance but a serious health and safety hazard.

Odour control technology

The way in which we deal with odours has changed dramatically over the years, and further scientific developments have allowed us to move closer to our ideal fresh smelling world. Getting educated on odour control technologies available can help those responsible for managing and reducing odour levels to make informed decisions. This article focusses on liquid odour control products, further information on odour control delivery systems and equipment are available from our website.

Odour masking agents

This technology is based around hiding unpleasant smells with a stronger perfume so

that the human nose only detects the perfume smell, and ignores the nasty odour underneath. This technology is a cheap way to deal with very low levels of odour, but many are finding that the presence of a strong perfume can be just as much of a nuisance. Bad odours will also always re-emerge. As a result the market is moving away from masking agents and looking now for neutralising agents that can eliminate odours rather than masking them.

Odour absorption

This goes a step further than simply masking, by using a blend of surfactant agents, attracts and traps the odour molecule within the droplet removing it from the atmosphere and pulling it down to the ground. Often products using this technology do come with added fragrance because the odours are still not being neutralised. A more effective technology than masking alone, but odours are still present and therefore can be easily re-released into the atmosphere.

Odour - Essential oil technology

Essential oils are aldehydes, esters, and ketones which physically attract the odour molecules weakly binding to them. Being ‘organic’ they do weakly interact with those organic molecules e.g. mercaptans, which are foul smelling, but the interactions are mainly a result of very weak polar attractions. Carbonyl groups present in the ‘oil’ weakly attract the malodorous molecules but there is no chemical interaction. Odours can therefore still be re-released into the atmosphere. Essential oils do not change the nature of the foul-smelling molecules quickly or completely, and their action in odour removal is very limited.

Oxidising agents

Oxygen can be used as an alternative and more efficient way in which to chemically interact with odour molecules, changing their structure completely and quickly. Oxidising agents however can tend to interact more effectively with some odour compounds rather than all, and therefore it is very difficult to ensure odour reduction if a variety of different odours are present, or the exact odour compound is unknown.

AiroPure™ technology

A new patent pending technology unique to ColdMist’s UK principal - Probe Industries - Odours are attracted to and trapped within the droplet, and then a blend of odour destructive reagents interact with the odour compounds on a molecular level, completely destroying malodours by changing their molecular structure on contact. Unlike standard oxiding agents, AiroPure™’s unique technology goes a step further by working right across the full spectrum of odour. Proven in independent laboratory analysis in partnership with Newcastle Science City UK, AiroPure™’s dual action technology also works on the bacteria causing the odours, and inhibits the growth of Legionella in water spray systems. AiroPure™ is so effective at destroying odours that it is also available in completely ‘fragrance free’ formulation.

ColdMist Odour Control Solutions
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