



Technical paper (ref 1.1)

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## **AIRONAUT™ TECHNOLOGY**

Probe Rotary Atomisers use microdroplet technology to encapsulate and chemically modify those chemical compounds which are the causes of malodor in locations where this is a problem. We have also developed systems to handle the products of combustion, especially NO<sub>x</sub>, in enclosed spaces such as waste transfer stations, indoor/underground car parks and other areas where combustion products may accumulate.

The Rotary Atomiser, operating in normal circumstances, produces about 15 billion, 20 micron droplets per litre of AiroNaut™/water mixture consumed. Every microdroplet produced, absorbs many thousands of these organic molecules (especially sulphur and nitrogen-containing compounds) which are the cause of malodor in many industrial and commercial operations.

The Probe AiroNaut™ formulation contains a blend of chemicals compounds, which are very effective in interacting with and encapsulating the compounds, which produce malodor. Having trapped these compounds within the microdroplets, odor-destroying reagents act on the malodorous molecules and change their chemical structures. It is impossible for these molecules to re-enter the air and be the source of new odor problems. After encapsulation the following simplified process takes place:

**$H_2S, CH_3SH, NH_3, SO_2 + ODR/H_2O \rightarrow$  oxidised/odor-free molecules**

Hydrogen sulphide, methyl mercaptan, ammonia and sulphur dioxide are typical odor causing molecules.

**ODR** = odor destructive reagents

We have supplied equipment to an iron foundry in the UK, where dust, sulphur dioxide and hydrogen sulphide were giving problems. Probe supplied Rotary Atomisers **and** a custom-made formulation of AiroNaut™, to handle these dust and odor problems. To date, the organisation using our equipment and chemical formulation have been very satisfied with our products and have recently re-ordered further supplies.

Dr Peter Carty  
15 October 2004

