

persnickety®; n.

- Showing extremely careful treatment
- Fussy, fastidious

DI-OX™ a.

- Di, double, twice
- Ox, beast of burden, hence patient & powerful

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Persnickety® DI-OX™ Oxidising Solutions for Odour Control Odour Neutralisation by Absorption & Oxidation

Brand New technology designed for the control of sulphides, mercaptans and other malodorous compounds generated in wastewater collections, treatment systems and industrial processes.

DI-OX™ 2000 Spray Formulation

DI-OX™ 5000 Wet Scrubber Additive

DI-OX™ PLUS and DI-OX™ MAX Effluent and Sludge Additives

Chances are you have dealt with the question **“What is that smell?”** more times than you care to remember. Not all that long ago, nuisance odours were considered unavoidable unpleasantnesses we just had to bear.

Public intolerance of malodour has grown dramatically. Regulatory pressure is rigorous and it's a good bet that you have tried and discarded many proposed solutions, PERSNICKETY® DI-OX™ will not be another.

Odour Control with PERSNICKETY® DI-OX™

Most odours require either an ionic carrier or a water carrier in order to be perceived by the olfactory system. These carriers can be hydrophobic in nature but may be enveloped with water vapour molecules or they can be enveloped with a common molecular complex that is hydrophilic. Some odours are ionic in nature and require no water carrier or ionic carrier. The perception of these odours may not be characteristic odour but a burning or suffocating sensation.

Odours arise from various sources; probably the two major sources are bacteriological and chemical. The principal modes of action of PERSNICKETY® DI-OX™ in odour neutralisation are those of **absorption** and **oxidation**. The form of oxidation varies with the origin and scope of the odour source.

PERSNICKETY® DI-OX™ 2000 Spray Formulation

Atmospheric odours that are evolved within restricted areas such as wet wells, channels, chambers and tanks in effluent treatment plants and in exhaust ducts and flues from commercial and industrial processes can be very cost effectively treated by spray injection of PERSNICKETY DI-OX 2000 Formulation at the source of odour. Atmospheric odours are generally carried by water vapour forming a common media for molecular oxidation by PERSNICKETY DI-OX 2000 treatment to take place more efficiently. In the event that the atmospheric odour is not carried by water vapour, the water content of PERSNICKETY DI-OX 2000 Solution will act as the media for oxidation. Dilution of PERSNICKETY DI-OX 2000 before use will provide a greater amount of media for oxidation.

PERSNICKETY® DI-OX™ 2000 Spray Injection Systems

Odour Control Systems designs, manufactures and installs a complete range of spray atomisation equipment and systems for the efficient application of DI-OX 2000. On site surveys and consultations will be undertaken free of charge. Fully detailed proposals for design and installation of a particular system to suit individual customer requirements will then be provided.

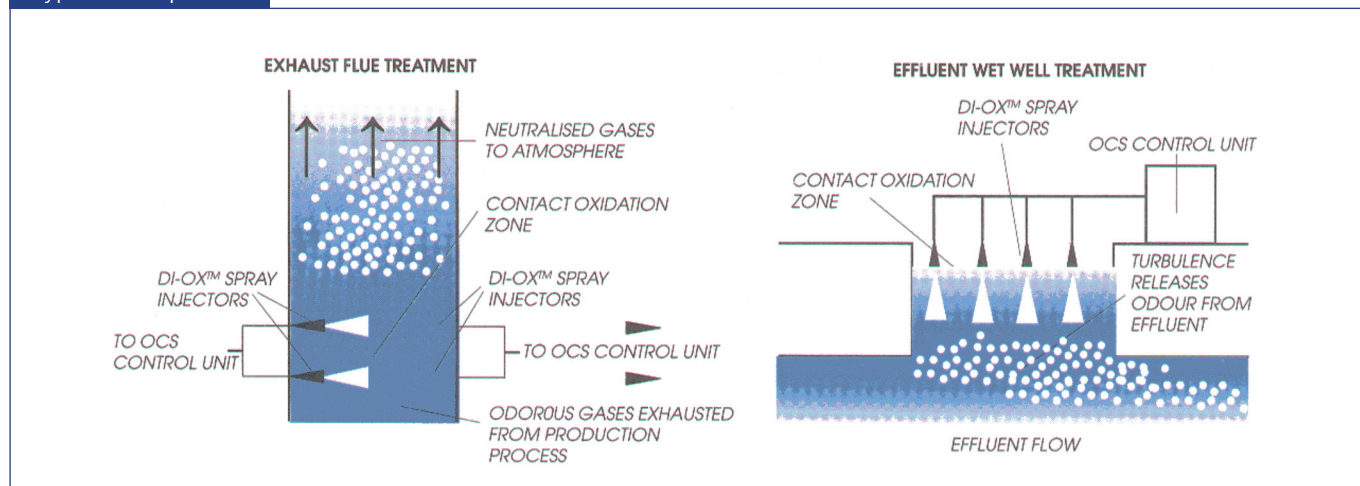
Low Cost Versatile Odour Neutralisation Equals B.A.T.N.E.E.C.

DI-OX odour treatment systems are proving to be far more cost effective and versatile than traditional filtration and scrubbing equipment both in terms of capital installation and subsequent running costs. This equates to Best Available Technique Not Excessive Cost.

Typical OCS Spray Injection Equipment Includes:

- Air/Liquid Spray systems for injection of DI-OX 2000 into exhaust ducts and flues
- H.P. Liquid Spray systems for treating chambers, wet wells, tanks, channels, waste skips etc
- Waste compactor mounted and back pack sprayers for topical application onto waste piles, into storage bins, stored sludge etc

Typical Setups



Typical Spray is for applications such as:

- Sludgae cake storage areas
- Solid waste collection vehicle and bins
- Screening skips
- Dirty drums and tanker trucks
- Refuse piles

Application systems may vary in sophistication from fully automatic mixing, metering and spraying equipment to pressure washers, back pack and garden type pump sprayers.

CAUTION: Atomised PERSNICKETY DI-OX 2000 should not constantly be inhaled and is not intended for use in areas where people are constantly working in close proximity to the sprays. Consult relevant M.S.D.S.

Please consult OCS for specific treatment recommendations

continued overleaf >>>

PERSNICKETY® DI-OX™ Effluent, Sludge & Waste Additive Formulations

Odours arising from bodies of fluid such as effluents, sewage sludges, liquors, waste liquids etc., can be eliminated by addition of PERSNICKETY DI-OX additives directly to the odiferous fluid. The first action of a DI-OX additive compound is to rapidly oxidise the vapour gases dissolved in the fluid to their oxide form. As the dissolved gases are oxidised and the amount of DI-OX additive is increased the next action is the oxidation of small molecular material (micro organisms); as the amount of DI-OX is increased further the larger molecules and compounds are oxidised. This selective, stage by stage oxidation provides cost effective treatment and the addition of DI-OX additives to fluid systems can be varied in intensity to provide the amount of control that is required to solve a particular odour nuisance problem. Some odour sources are a constant nuisance, such as sewerage collections, sludge tanks etc. and these will require a continuous controlled dosing and treatment programme. As the odour source varies in intensity the additive level can be varied to meet the intensity.

DI-OX additives will successfully treat sulphides, amines, mercaptans, nitrogen compounds, indoles, skatoles, phenols, sulphur compounds, cyanides and many other odorous compounds.

PERSNICKETY® DI-OX™ Additive Systems

DI-OX additives are normally fed into waste streams, sludge and slurry holding, consolidation and thickening tanks, sludge feed lines to dewatering systems, screw conveyers carrying dewatered sludge cake, by automatic dosing systems which can be designed and installed by Odour Control Systems for optimum, cost effective treatment and control.

The necessary dosing rates must be determined on a case-by-case basis. Good starting guidelines can be provided however. The following table provides for this and initial assessments can be readily made on the laboratory bench.

DI-OX™ ADDITIVES DOSING		
MALODOROUS SUBSTRATE	PPM	DI-OX™ ADDITIVES/M3 OF SUBSTRATE
Digested Domestic Sludge	75 - 100 PPM	75 - 100 mls.
Pulp and Paper Sludge	100 - 150 PPM	100 - 150 mls.
Raw Domestic Sludges	150 - 200 PPM	150 -200 mls.
Food Processing Sludges	150 - 250 PPM	150 - 250 mls.
Cattle Slurry	125 - 200 PPM	125 - 200 mls.
Poultry Slurry	125 - 200 PPM	125 - 200 mls.
Pig Slurry	150 - 250 PPM	150 - 250 mls.
Landfill Leachates	100 - 250 PPM	100 - 250 mls.
Septic Domestic Sewage	5 - 50 PPM	5 - 50 mls.
Silage Juices	50 - 100 PPM	50 - 100 mls.
Sludge Liquors	50 - 100 PPM	50 - 100 mls.
Sludge Cake	300 - 500 PPM	300 - 500 mls.
NOTE: Due to its policy of continuous research and development OCS reserves the right to alter specifications without prior notice.		

In certain very specialised cases where odorous liquids, effluents and wastes require odour absorption and polishing in addition to oxidation a combined PERSNICKETY DI-OX and COUNTERVAILANT™ formulation is necessary. The company has a number of these formulations to suit a range of applications.

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PERSNICKETY® DI-OX™ 5000 Wet Scrubber Formulation

Most odours require either an ionic carrier or a water carrier in order to be perceived by the olfactory system. These carriers can be hydrophobic in nature but may be enveloped with water vapour molecules or they can be enveloped with a common molecular complex that is hydrophylic. Some odours are ionic in nature and require no water carrier or ionic carrier. The perception of these odours may not be characteristic odour but a burning or suffocating sensation

Odour arises from various sources; probably the two major sources are bacteriological and chemical. The principal modes of action of PERSNICKETY DI-OX in odour reduction are those of absorption and oxidation. The form of oxidation varies with the origin and scope of the odour source.

Superior Oxidising and Scrubbing

PERSNICKETY DI-OX 5000 has been specially formulated for use and application in Chemical Wet Scrubbers where its superior oxidising and odour absorption properties out-perform traditional scrubbing chemicals such as hypochlorite, caustic soda, peroxides etc., whilst its stabilised nature makes it much safer to use, store and handle.

- Selectively reacts with hydrogen sulphide, organic sulphurs, organic amines, petroleum distillates
- Is not pH dependant and so does not require to be used with caustic in many cases
- Will oxidise a very wide range of odour causing compounds
- Improves cleanliness and efficiency of Scrubber systems
- Reacts instantaneously for rapid control
- Low dose rates of between 2 -10 ppm

PERSNICKETY DI-OX 5000

- Does not chlorinate organic compounds and therefore does not form chlorinated organics, chloroforms or trihalomethanes, all of which are coming under increasing regulatory pressure
- Removes biofilm and slime-forming bacteria to keep scrubbing systems cleaner and operate more efficiently
- Is a unique material having properties of a strong oxidising disinfectant agent
- Has 2.5 times the oxidising capacity molecule for molecule of chlorine
- Is effective over a wide pH range of 3 - 12
- Is unaffected by temperature
- Is a stable free radical

DI-OX 5000 Application, Testing and Dosing

Odour Control Systems Ltd offers a full on-site technical consultancy and testing service for the cost-efficient usage of DI-OX 5000 in wet scrubbing systems. Our specialised engineering division will as required design, manufacture, install and commission new make-up, activation and dosing equipment or modify existing systems to suit the cost efficient use and application of DI-OX 5000 Wet Scrubber formulation.

Technical, Health & Safety considerations when using DI-OX Formulations

Care must be taken not to create more serious problems in the pursuit of malodour control. Many products in commercial use are toxic, create toxic by-products, are corrosive and damaging to the atmosphere, plants and living organisms. All chemicals should be handled with care (review DI-OX™ M.S.D.S.). OCS PERSNICKETY DI-OX does not constitute any serious risk for those concerned in its handling or use, provided they are familiarised with the necessary safety precautions.

Here are a few key points of interest concerning the basic chemistry of PERSNICKETY DI-OX:

- Approved by the EPA for use in drinking water for taste and odour removal
- Approved by EPA, FDA and USDA for sanitation uses in food and dairy products
- Does not contain compounds known as carcinogens according to NPT, IARC or OSHA

preserving the environment

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