

**persnickety®; n.**

- Showing extremely careful treatment
- Fussy, fastidious

**coun'ter•vail, v.**

- to have or use equal force against
- to make up for; compensate
- to be successful, useful, etc

©1996 Odour Control Systems Ltd. All rights reserved. OCS DI-OX™ is a trademark of Odour Control Systems Ltd. Peacemaker™ and Persnickety® are trademarks of Syneco Systems Inc. USA under licence.

## Persnickety® Countervailants™ Additive Solutions for Odour Control

### Wet Scrubber Additive

PERSNICKETY® Odour Countervailant® Wet Scrubber Additive is compounded to replace chemical oxidants such as chlorine, sodium hypochlorite and chlorine dioxide in wet scrubbers. The two most commonly used wet scrubber designs are recirculating packed bed and mist. While considerably different in design and operation, their shared purpose is to collect and absorb air-borne nuisance malodours into a liquid solution containing water and oxidant chemical so that treatment can occur in the liquid phase. Inorganic malodours such as hydrogen sulphide and ammonia are highly soluble in water, but many organic malodours are not. Any malodour escaping absorption obviously cannot be treated by oxidants. (See Odour Perception • Odour Qualities • Chemical Control Methods, OCS Limited data sheet for greater detail.)

The Wet Scrubber Additive provides the following very important advantages over chemical oxidants:

### Superior Malodour Control

- Able to react in both liquid and gaseous phases.
- Used successfully on even the most complex and intensive combinations of organic and inorganic malodours, such as those in the rendering industry.
- Functions effectively in all operating ranges of temperature and pH.
- Is not affected by the presence of extraneous, non-malodorous organics.
- IMPORTANT NOTE: Because the Additive works so effectively, pay special attention to appropriate safety procedures when entering confined spaces.

### Improved Safety for Operators and the Environment

- Contains no toxic materials and forms no toxic by-products.
- Is non-explosive, non-flammable and non-corrosive.
- Biodegrades fully and forms no damaging decomposition by-products.
- Meets national and international health and safety standards.

*continued overleaf >>>*

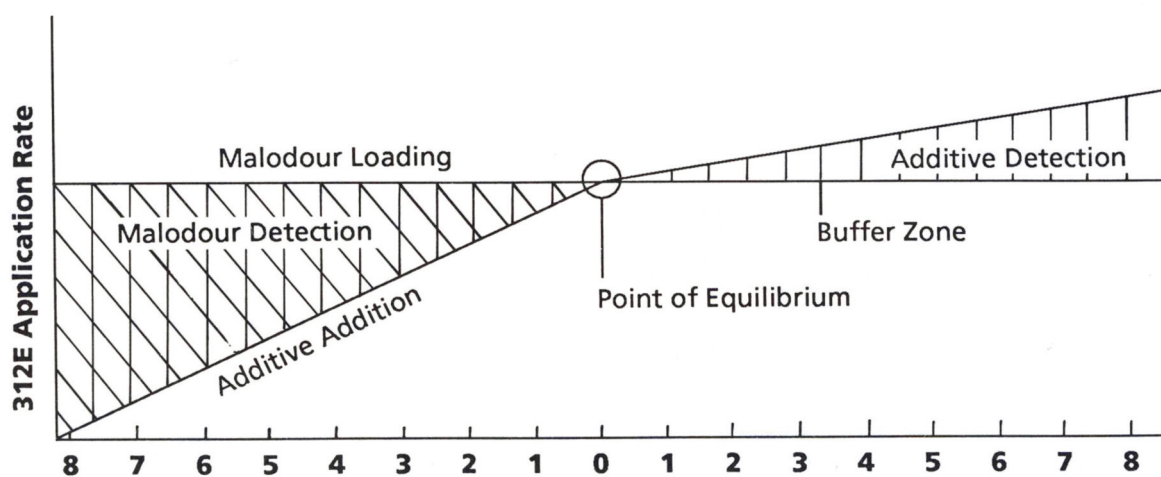
## More Economic

- Normally reduces chemical operating costs.
- Reduces or eliminates costs associated with removal of scaling caused by acid/base processes.
- Cleans and prevents accumulations of fats, oils and greases on packing media.
- Eliminates corrosive destruction of equipment caused by corrosive oxidants.
- Potentially allows capital expansion avoidance via improved operating efficiency.

## Application Information

Application rates for Wet Scrubber Additive are largely dictated by the intensity of malodour. The proper rate establishes an equilibrium between malodour and Additive. This equilibrium is simplistically illustrated below.

### Equilibrium



## Odour Perception

In practice, a steady-state malodour loading is not always present. Therefore, many customers choose to operate with a faint level of Additive odour present to act as an olfactory guide in order to provide a buffer zone.

For recirculating packed bed scrubbers, Wet Scrubber Additive can be fed directly into the reservoir or into the line feeding the spraying system above the packing. Most mist scrubbers do not recycle scrubbing liquids, consequently choice is limited to the line feeding the nozzle. On-hand dosing pumps will normally work well. The Additive can be fed in its concentrated form, but most users dilute with water to make up a 1-2% solution in a day tank or empty 200 litre drum and feed the diluted solution.

This approach is preferred for several reasons. An improper pump setting or a malfunctioning pump could become very costly by delivering far too much concentrated Additive. For mist scrubbers it is desirable to have a rapid pump stroke to avoid a gap effect (water, Additive, water, Additive) in the scrubbing liquid line.

The precise feed rate must be determined on site. In addition to malodour intensity, feed rate will be influenced by odour composition, bleed and make-up rates, recirculation rates, CFM and contact time provided and the general maintenance of the system.

Good starting guidelines can be provided. For packed bed scrubbers the Loading Standard is rendering cooking malodours (blood, offal, feathers, bone meal). For mist scrubbers the Loading Standard is malodorous domestic wastewater, headworks locations. Weigh the intensity of the malodours under consideration against these Standards, and increase or decrease the recommended starting application rate accordingly.

STARTING RECOMMENDATIONS (concentrated Additive)		
MALODOROUS MATERIALS	PPM	LTRS. PERSNICKETY PER 10,000 LTRS. WASTE
Packed Bed (rende ring Standard)	.67 flo oz./hour 19.8 cm <sup>3</sup> /hour	7 cm <sup>3</sup> /hour
Mist (domestic Standard)	1.0 flo oz./hour 29.57 cm <sup>3</sup> /hour	10.5 cm <sup>3</sup> /hour
(conversions)	1 flo oz. = 29.57 cm <sup>3</sup>	1 m <sup>3</sup> =35.31 ft <sup>3</sup>
<b>NOTE:</b> Due to its policy of continuous research and development OCS reserves the right to alter specifications without prior notice.		

### Example

- packed bed scrubber - rendering, 60,000 CFM (1700m<sup>3</sup>), 24 hour day
- .67 flo oz. x 6 (60,000 ÷ 10,000 = 6) = 4.02 flo oz./hour x 24 hours = 96.48 flo oz./day
- 7 cm<sup>3</sup> x 17 (1700 m<sup>3</sup> ÷ 100 = 17) = 119 cm<sup>3</sup>/hour x 24 hours = 2856 cm<sup>3</sup>/day

### Example

- mist scrubber - domestic, 12,000 CFM (340m<sup>3</sup>), 18 hour day
- 1.0 flo oz. x 1.2 (12,000 ÷ 10,000 = 1.2) = 1.2 flo oz./hour x 18 hours = 21.6 flo oz./day
- 10.5 cm<sup>3</sup> x 3.4 (340 m<sup>3</sup> ÷ 100 = 3.4) = 35.7 cm<sup>3</sup>/hour x 18 hours = 642.6 cm<sup>3</sup>/day

Physical and Safety Data		
Weight	per Gallon per Litre	4.564 kgs 1.004 kgs
Specific Gravity	@ 77°F @ 25°C	1.004 1.004
Boiling Point	°F °C	205° 95.2°
Flash Point	°F °C	> 200° > 93.3°
Solubility in Water	@ 77°F @ 25°C	Soluble Soluble
Odour		Fresh
Colour		Green
Hazard Rating		Non-Hazardous. Good housekeeping procedures and general principles of safety should be observed when handling any chemical product.
First Aid		Skin contact - in cases of prolonged skin contact, wash off with soap and water. If any irritation exists, seek medical advice. Eye contact - wash eyes with lots of water for at least 10 minutes and seek medical advice. If swallowed - drink lots of water and seek medical advice immediately. Consult material safety sheet.
pH		7.4 - 7.6
Corrosivity		Non-corrosive
Biodegradability		Fully biodegradable
Packaging		25 Litre containers and 200 Litre drums.
Shelf Life		12 months in unopened containers
Storage		Protect from freezing. Do not store in temperatures above 120°F, 48.9°C.

## Limited Warranty

Our only obligation shall be to replace or pay for any material proved defective. Beyond the purchase price of materials supplied by us, we assume no liability for damages of any kind and the user accepts the product "as is" and without warranties, expressed or implied. The suitability of the product for an intended use shall be solely up to the user.

## preserving the environment

Odour Control Systems Ltd  
33a Castle Close, Manor Lane  
Hawarden Industrial Park  
Hawarden, Flintshire CH5 3QX

Phone: +44 (0)1244 536700  
Fax: +44 (0)1244 535184  
E-mail: [mail@odourcontrolsystems.ltd.uk](mailto:mail@odourcontrolsystems.ltd.uk)  
Web: [www.odourcontrolsystems.ltd.uk](http://www.odourcontrolsystems.ltd.uk)



Certificate No. 7174

