



corgin



Odour & Dust Suppression Technologies

A fresh approach

Odour and Dust Suppression Technologies

corgin

Established in 2001, Corgin is an environmental solutions provider based in the UK. Corgin specialise in providing working technologies to meet the environmental needs of the waste, wastewater and industrial sectors, refreshing many satisfied clients with their responsible, problem-solving approach.



Assessment

Beginning with a thorough assessment of your needs, Corgin's **full service approach** offers carefully thought out and implemented solutions using high quality products and equipment. Ongoing performance monitoring and service support are offered to ensure the solution continues to work for you.



Implementation

With experience gained in the field since 1994, Corgin's personnel form a **reliable and resourceful team** who endorse sound business values of integrity, care and personal service.



Service support

Corgin's central geographical location in Stafford is supported by a national network of engineers, providing an **efficient and responsive service** wherever you are.



Health, Safety & the Environment

Corgin recognise the importance of promoting a safe and sustainable environment and are committed to rigorous compliance with government health, safety and environmental legislation.

This is reflected by ISO9001 accreditation, UVDB registration, and the employment of award-winning health and safety consultants, Citation Plc.

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We have it covered

Controlling odours and dust – an introduction

What are odours?

Odours are airborne molecules present in the atmosphere, often at very low concentrations, which are detected by our olfactory senses.

Odour emissions are often associated with production processes and, perhaps more commonly, the decomposition of waste, a natural biological process essential to the lifecycle of organic material.

Operators of waste facilities, wastewater plants and industrial sites who have to manage odorous emissions are often well aware of the potential adverse impact on site neighbours, even where the odours themselves are harmless.

The task of managing these odour emissions along with other discharges such as effluent, dust, noise and light, in view of keeping within acceptable limits and the law, can be all-consuming and thankless – especially when subject to variable weather conditions and site operations. The cost of non-compliance or holding up production can be very high.

Managing odours and dust

To deal with odours and dust in line with BAT (Best Available Technique), implementing any process changes and improving housekeeping is obviously the first approach. Where feasible, this can be followed by controlled extraction and treatment using one of the many abatement systems available. However, there are many instances where such measures require augmenting or are just not viable.

It is in these cases that Corgin's odour and dust control technologies become the Best Available Technique. Examples of this are:

- Where the odour or dust source has a large surface area, especially where outdoors
- Where the odour or dust emissions are of a temporary nature or where the source is constantly changing location
- Where there is difficulty in providing containment and extraction
- Where the high capital outlay of other options is prohibitive
- Where there is a requirement to supplement an existing abatement system or to treat fugitive emissions



Odours in nature...

Odours are emitted during the natural decomposition process for a reason – they serve to both attract and to repel. They attract insects, vermin and animals which help the natural decomposition process, while they also serve to warn humans and other creatures which could potentially be harmed by contact. Unfortunately, because of these natural instincts, even where there is no real health risk, neighbours and other receptors can often mistakenly believe that they can be harmed by odours.



Corgin's odour and dust suppression technology

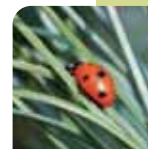
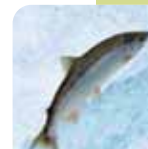
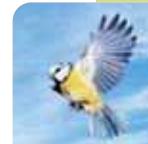
- Treats airborne contaminants in the atmosphere
- Treats the source material from which they are generated

Airborne contaminants are treated by **naturally-based formulations** utilising the principles of absorption, neutralisation and bacteriostatic action, amongst others. These concentrated formulations are delivered in a highly diluted form as an **atomised mist or spray**, strategically targeting the odour or dust source, to capture and treat emissions.

Alternative technologies treat the odour-generating source material itself, whether it is solid waste, sludge or odorous liquid. This is achieved by the direct application of **biological stimulants and odour suppression products** which can be further complemented by a spray-applied on **foam cover** to provide immediate odour containment. Dust suppression can be achieved in a similar way.



Need a site assessment? Call 01785 229 300 or email sales@corgin.co.uk



Atomising technology for effective odour and dust suppression

Atomister™ systems

Corgin Atomister™ systems deliver a finely-atomised odour and dust suppression spray, to capture, treat and remove odour molecules and dust particles from polluted air. Corgin's systems are offered with a choice of atomisers, allowing highly targeted treatment where required, or widespread coverage if preferred. A high level of system automation is offered to reduce operator input and give greater control of system use.

Corgin offer thorough site assessments to ensure that the system is designed to provide the most effective treatment for your site. The simplicity of the system design facilitates rapid installation and easy re-configuration in the event of changes to site processes and operations.



Typical system features and options

- Fully pumped supply with **flow and pressure regulation**
- **Automatic dosing** of concentrate product
- **Programmable PLC** option offers automated functions such as 24/7 timer control and external input signal control (from windvanes, motion sensors, equipment or door operation etc.)
- **Multi-channel option** allows independent treatment of separate areas on site or different levels of treatment intensity
- **Manual on/off override** of any automated functions
- Hours-of-usage and water usage metering assists with **performance monitoring**, budget control and regulator compliance
- System purge or drain feature for **frost protection** and flexible pipework to resist frost damage
- **Water filtration** with replaceable filter cartridges
- Small, integral break tank for **backflow protection** and to meet water supply regulations where specified
- No requirement for large feed supply tanks with their associated legionellae risks
- Controls encased in **lockable coated steel cabinets**
- CE-marked components



Example of Atomister Airo™ system

Atomiser options

One of the most critical factors for effective odour control and dust suppression is the size of the atomised micro-droplets. If too large, the overall reduction in surface area per litre of spray results in a reduced absorption capacity. If too small, droplets tend to evaporate before treatment has been fully effective. Corgin atomisers are designed to ensure consistent delivery of atomised micro-droplets at the correct size.

Atomister Airo™ – revolutionary air-atomisers

- Use up to 90% less water than traditional hydraulic and rotary atomising systems
- Ultra-fine air-atomisation increases treatment effectiveness and virtually eliminates the risk of any wetting
- Unique and proven design
- Powerful and directional mist spray
- Self-cleaning mechanism for reliable performance and protection against blockages
- Individual spray density adjustment and anti-drip valves on each atomiser
- Interchangeable atomiser heads
- 316 stainless steel for ultra-long life and durability
- Suitable for both targeted treatment in localised or sensitive areas, and widespread coverage of larger indoor and outdoor areas
- Compact size allows atomisers to be mounted close to odour and dust sources for increased effectiveness

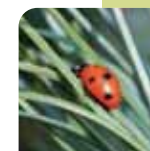
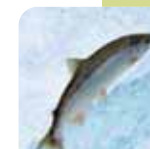
Atomister Roto™ – rotary fan atomisers

- Fan-assisted atomisation
- Powerful fogging action
- Oscillating option
- Ideal for treating large point sources and for 'fogging out'

Atomister Hydro™ – high-pressure atomisers

- Generates voluminous mist spray
- Widespread coverage provided by multiple atomisers
- Especially suited to outdoor perimeter systems and dust control
- Small size allows atomisers to be mounted close to odour and dust sources for increased effectiveness
- Stainless steel, plastic or brass construction depending on site requirements
- Integral anti-block filters on certain atomiser options

For a specification for your site call
01785 229 300 or email sales@corgin.co.uk



Atomister™ systems continued

Typical applications



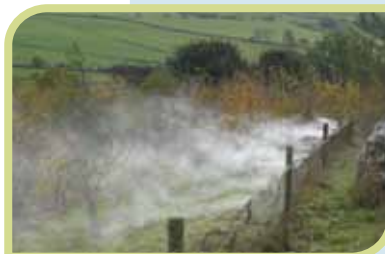
Sewage storm tank perimeter treatment



Energy-from-waste processing facility



In-vessel composting of catering waste



Fenceline perimeter system at landfill bordering National Park



Perimeter treatment of open windrow composting facility



Treatment of residual odours from bio-filter



Compost maturation building



Coverage of industrial effluent treatment tanks



Windrow turning of green waste



Limed sewage sludge storage bay



Sludge drying process building



Doorway coverage at a waste transfer facility

Atomister™ systems

Case studies

Waste-to-energy odours brought down to earth

Corgin was glad to be selected as the dust suppression system supplier of choice on a prestigious new waste recycling and energy generation plant, a national first. At design stage, the client envisaged the dust suppression requirement to be minimal.

Commissioning of the facility revealed that this was no exception to many modern waste treatment facilities. Fugitive dust and odour emissions managed to elude the carefully-designed 'negative pressure' environment and air extraction system intended to prevent their escape. Odours were escaping from the building and causing neighbourhood complaints.

Corgin responded quickly to the client's request for odour control coverage once regulators became involved. Within days, a strategically-placed Atomister Airo™ odour control system was installed around the problem areas.

To the client's relief, odour emissions are now at a manageable level.

As process changes take place on site, further alterations to the system are easily accommodated, and site management are delighted with both the effectiveness of the treatment and Corgin's ongoing service commitment.



What they say . . .

"When the landfills were closed we had 450 to 500 tons of waste. We put your system on and... it's fantastic. You can quote me on that"
(WTS Manager)

Bio-odours

A complaint-laden Midlands composting facility had unsuccessfully tried various other poorly-designed odour control systems before they called in Corgin.

It was little wonder that the client grasped Corgin's odour control system proposal with both hands.

A well-designed Corgin Atomister Hydro™ odour control system now protects the site. The atomised spray quality is vastly improved and creates a 210m long curtain effect on the two vulnerable sides of the composting site's perimeter.

Visually, perimeter coverage can be an excellent public relations tool, but here it is clearly more than that. When odour complaints started pouring in one day, the system was found to be switched off. Ironically, this is often one of the best indicators of an effective odour control system.



What they say . . .

"I went up there this morning and it didn't smell of anything" [malodorous]
(HS & E Manager of waste incinerator)

Do you want a positive experience for your site? Call us on 01785 229 300 or email sales@corgin.co.uk

Mobile odour & dust suppression systems

Odour Screen™



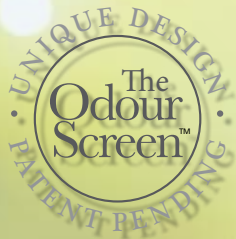
The Odour Screen™ provides you with the ultimate mobile odour and dust control system. It is particularly suited to outdoor sites where it can be rapidly deployed to treat emergency issues or where constantly changing site activities and wind direction require an easily relocatable system.



Used in conjunction with Corgin's odour absorbing and neutralising products, the Odour Screen™ delivers an exceptionally **wide curtain of finely-atomised spray** to treat site odour and dust emissions before they give cause for complaints.



Conveniently folds down to a compact mobile unit for road towing and easy positioning on site.



For demonstration or hire call 01785 229 300
or email sales@corgin.co.uk



Stainless steel atomisers incorporate integral 'anti-block' filters and interchangeable atomiser heads. Individual shut-off valves and the option of different atomiser sizes to help achieve desired atomised droplet size and spray density.

Fold-out boom
up to 12m wide for providing a wide curtain of spray and 2-3 times the coverage of traditional mobile units.

High-pressure pump
with pressure adjustment up to 100 bar.

Electric or manual start
diesel or petrol engine with customised cowl.

Tow hitch
option of ball or ring hitches.

Extendable mast
adjustable up to a height of 3m, allowing treatment of both airborne and ground-hugging odours.



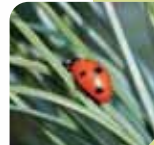
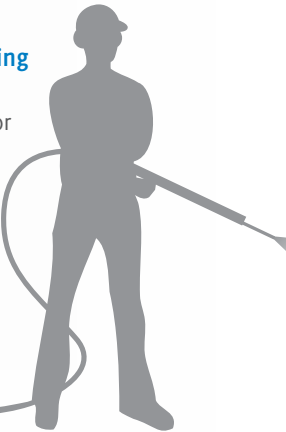
Quick-connect coupling
to supply pressure washer, foam applicator or up to 200 remotely-placed atomisers on a separate pipeline.



Industrial duty chassis
with site tow, highway tow or skid-mounted options available.

1100 litre tank
for storing ready-to-use odour control product, complete with access hatch, drain tap and filtered supply to pump. An optional auto-dilution unit is also available.

Adjustable stabiliser legs
on trailer chassis.



Odour Screen™ experiences



"The best mobile unit we've ever seen"

"Works very well"

"Looks good"

"Does give you a good spread"

"The water tank ran for 14-16 hours"

"It's a big unit, whereas the other units are quite small in comparison"

"Perfect"

The Weekend Garden Party

When I first visited site to assess odours coming from septic sewage at a UK wastewater treatment works, I found myself close to the grounds of a large mansion with an outlook over the expansive coastline, quite obviously used regularly for functions. As I assessed the works for an odour control solution, I became aware of the occupant's intense gaze from just beyond the boundary.

Things came to a head just prior to a large weekend garden party with 150 guests, including dignitaries. An odour control system just had to be installed before the start of the weekend.

An order was raised and the next morning an Odour Screen™ mobile system was on site and being commissioned. To extend coverage, 55no additional nozzles were installed around the inlet works and primary settlement tank where most odours were being generated.

Thankfully, the weekend passed without a hitch.

Once again, Corgin exceeded all expectations by providing effective odour control, within budget and on time.

In an acknowledgement of this success, the client then awarded the installation of a permanent Atomister Hydro™ system to Corgin.



Mobile odour & dust suppression systems

Further options and attachments



Odour Blaster



Odour initial



Foam applicator - solid waste



Odour Blazer



Odour Rotary

See page 17 for Corgins range of odour control foam products.

Find out what we can do for your site.
Call 01785 229 300 or email sales@corgin.co.uk



Odour and dust abatement products

Corgin ODA

The ODA range

The ODA range comprises naturally-based products for capturing and treating **Odours** and **Dust** in the **Atmosphere**.

Delivered into the air as a finely-atomised mist spray of micro-droplets using Corgin's atomising systems, Corgin ODA products work physically and chemically to 'cleanse' the atmosphere of airborne odours and dust and facilitate their natural biodegradation.

- Naturally based and biodegradable
- Highly concentrated for application in a highly diluted form
- Not reliant on masking agents
- Safe for human contact
- Not harmful to the environment

How and why ODA works...

Different formulations of Corgin ODA products work in various different ways, but they all employ surface-active agents.

Surface-active agents impart a reduced surface tension to the finely atomised micro-droplets, allowing odour molecules and dust particles to be very readily absorbed. When delivered at the correct droplet size through Corgin's atomising systems, this effectively **'sucks' odours into the micro-droplets** where they can be no longer detected by our olfactory senses.

In addition to surface-active agents and according to site requirements, other active ingredients are offered to achieve the best results in each situation. Some examples, and how they work, follow:

Odour neutralisers are based on essential oils which are odiferous organic compounds **found naturally** in plants. They are effective neutralisers for many classes of odour, particularly those from decomposing waste. Essential oils also have a naturally pleasant scent, which can assist in the overall control of odours. However, a well-balanced odour control system should leave **almost no perceptible odour** when treating at the correct level, unlike masking agents which by definition have a strong (and often offensive) residual perfume.

Bacteriostats suppress bacterial activity – often the root cause of bad odours. Bacteriostats can be used to **reduce viable bio-aerosols** which are becoming of increasing concern to environmentalists and regulators. They are ideal for use on sites where there is wastewater treatment, composting or other processes that may release bacteria-laden mist.

pH buffers and chemical reactants. Some odours are acidic (such as the infamous "rotten egg gas" or hydrogen sulphide) or alkaline (such as ammonia). Adjusting the pH and/or promoting a chemical change can render them more soluble and less odorous – useful for combating concentrated **sulphide or ammonia odours**.

Solubilisers help to **contain odours in the micro-droplets**. They help keep droplets stable and less subject to flash evaporation, and increase performance against odours that are "oily" in nature.

Learning from nature

If you've ever come across a decomposing animal carcass in the countryside, you may have noticed that foul odours were not detectable until you were very close to it. Conversely, odours emanating from the same carcass in an urban car park would probably be detected 50m or more away. This is because in many manmade environments there are no natural deodorisers working to eliminate odours during natural degradation processes.

In nature's setting, trees, plants and vegetation produce a vapour of fragrant essential oils with the natural ability to neutralise organic odour molecules. Nature does not necessarily kill bacteria to stop odours; instead, it breaks down the offensive odour molecules themselves, leaving the bacteria to do their work in decomposing the organic matter.

Corgin ODA products are based on this knowledge. They do not attempt to alter the natural decomposition process, nor to mask odours, but rather enhance nature's own deodorising process.



What they say . . .

"Of the chemicals we have tested, yours has so far impressed us the most"

"Your product differs from others which act as a masking agent and not a neutraliser"

The ODA product range

Corgin ODA 300

Formulated from a complex blend of odiferous essential oils and other ingredients using:

- Absorption
- Solubilisation
- Neutralisation

Corgin ODA 400

Similar to ODA 300, with the additional benefit of bacteriostats using:

- Absorption
- Solubilisation
- Neutralisation
- Bacteriostasis

Corgin ODA 500

An odourless formulation for use near to very sensitive receptors and for dust suppression using:

- Absorption
- Solubilisation
- Bacteriostasis

Corgin ODA 600

Similar to ODA 500 with the additional benefit of reactants to specifically treat sulphides and mercaptans, or ammonia and amines, using:

- Absorption
- Solubilisation
- Bacteriostasis
- Chemical reactivity

Corgin ODA 700

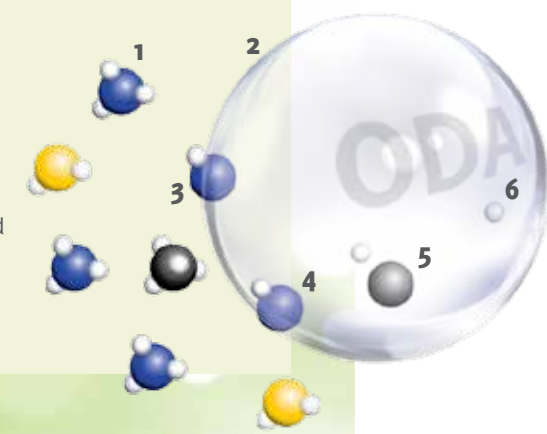
Bespoke formulations to meet specific odour control requirements using:

- Any of the above, and/or...
- pH buffering
- Ionic balancing

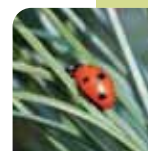
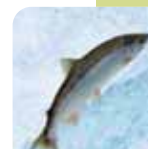
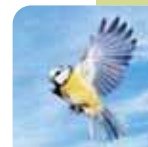
The above numbered series can include a range of variants, eg. ODA 304 is within the ODA 300 series.

Action of ODA droplet on odour molecule

- 1 Offensive odour molecules cause odour problems for as long as they are in the air.
- 2 Atomised micro-droplets are introduced into the odorous air.
- 3 Ionic, electrostatic and gravitational forces, correct micro-droplet size and targeted treatment all increase the number of collisions.
- 4 The surface-active agents allow rapid absorption of odours into the micro-droplets.
- 5 Odour is solubilised and encapsulated in the surfactant matrix.
- 6 Neutralisation, pH balancing and bacteriostasis take place in the droplet, according to the ODA product selected.



For a trial sample, call 01785 229 300 or email sales@corgin.co.uk





Insect control

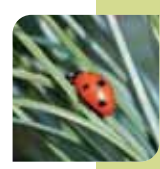
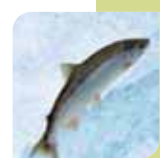
Corgin Bio Kilz



Corgin Bio Kilz is a safe, bio-degradable and long-lasting insecticide, effective against a wide range of both flying and crawling insects throughout all stages of growth.

Spray application through Corgin's atomising systems helps to ensure consistent treatment coverage, which remains **effective for up to four weeks or more**, saving you the cost of frequent manual applications. Corgin's atomising systems also have features such as automatic dilution and timer control which give reliable, automated protection against insect infestations.

Formulated as a ready-to-dilute, water-based micro-emulsion, based on technology in use worldwide, Corgin Bio Kilz is one of the **safest insecticides available**. It is non-toxic, non-flammable and odourless as applied, making it safe for use in areas occupied by humans.



Waste treatments and additives

Surface foam cover products

Odour containment, deodorisation and insect control can be achieved rapidly by creating a foam cover over odour sources such as waste stockpiles.

The foam cover is long-lasting and leaves a light surface film as it dries, which continues to reduce odour emissions long after the visible foam cover has gone. Odour neutralisers and other additives to the foam enhance performance further.

Dust suppression and fly control foams utilise the same principle. All products can be spray applied using Corgin's foam applicators.

Foam Cap

- Physical cap provides **immediate containment** of odours and dust
- Profuse, dense foam is stable and **long-lasting**
- **Dries to an invisible film** which continues to have an effect
- Suitable for use with Corgin's range of applicators
- Can also be used effectively in **aerated wastewater** lagoons

Odour Cap

- Has all the benefits of Foam Cap, and also contains **odour neutralisers**
- Provides odour neutralisation as well as containment
- Most effective treatment for highly odorous stockpiles and surfaces

Corgin MNB

- Contains **micronutrients** and **biological stimulants** in addition to foaming agent and odour neutralisers
- **Suppresses** odour-causing anaerobic bacteria
- Promotes healthy populations of non-odorous facultative bacteria
- **Improves stabilisation** rate and reduces compost turning requirements
- Can also be used effectively in **aerated wastewater** lagoons

Fly Cap

- Has all the benefits of Foam Cap, combined with a **safe insecticide**
- Physical foam barrier and odour reduction **reduces attractiveness to flies**
- Dries to an invisible insecticide film giving **lasting protection**



For a trial demonstration, call 01785 229 300 or email sales@corgin.co.uk



Bio-waste treatments and additives

Corgin offer a range of concentrated micronutrients, biological stimulants and contact deodorisers for applying as a topical spray or for mixing into solid and liquid waste.

These formulations enhance natural biological decomposition and provide immediate, long-lasting odour knockdown by rapidly establishing healthy populations of facultative bacteria and by suppressing odour-producing anaerobic bacteria. Being formulated from natural, non-toxic and biodegradable amino acids, essential oils, vitamins, minerals, purines, pyrimidines and complex organic extracts, these products do not introduce non-indigenous bacteria or enzymes.

Corgin MNC

- For **compost** and **solid waste**
- **Rapid odour knockdown**, with long-lasting effect
- **Reduced turning** and aeration requirement in composting
- **Accelerated decomposition** and stabilisation
- Allows **increased throughput**
- Creates a **bio-filter effect** on the compost face to treat odorous gases before they are released

Corgin MNB

- Similar to Corgin MNC and also contains a **foaming agent** to provide a physical foam cover
- Detailed on page 17

Corgin MNS

- For **liquid waste** and **wastewater**
- Helps reduce BOD, COD, ammonia and suspended solids
- **Rapid, long-lasting reduction** of odours and sulphide production
- Assists wastewater treatment **plant start-ups** and **reseeds**
- **Improved treatment efficiency** and improved oxygen uptake
- **Provides essential micronutrients** which are often deficient in industrial effluent

Corgin MND

- For **anaerobic digestors**
- Increases digestion rate
- **Increases methane yield rate**
- Gives **less odorous** end product
- **Improves stability**



Wastewater technologies

With many years' experience in serving the environmental sector, Corgin offer a range of wastewater and water treatment technologies, in conjunction with a number of reputable international manufacturers.

Aeration and mixing



Sludge thickening and dewatering



Foam Skimmer systems



Microfiltration



Bio-augmentation





corgin

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