GZXZEP
WATER & ODOR TREATMENT

NPD

Plant-Based Deodorizers

Industrial odor control.
Application-focused solutions.

Products / Case Studies / Misting Systems

Guangzhou Xiaozhong Environmental
Protection Technology Co., Ltd.

www.gzxzep.com | +86 136 2040 0798

English edition of the 2022 product catalog



GZXZEP
WATER & ODOR TREATMENT

Specialty chemicals. Practical treatment solutions.

Guangzhou Xiaozhong Environmental Protection Technology Co., Ltd. develops and manufactures specialty chemicals for water and odor treatment. We combine product development with application support to address the operating challenges faced by industrial and municipal facilities.

Our approach is to match the chemistry to the application: understand the process, select an appropriate formulation and support its use in the customer's treatment system. The company works with raw-material suppliers and research organizations to develop practical solutions.

Production network

Guangzhou / Chengdu / Zaozhuang/Jiuquan

The 2022 catalog describes a team with 12+ years of industry experience.

Our purpose

- **Vision:** Advance specialty water-treatment chemistry through practical innovation.
- **Mission:** Help customers solve treatment challenges and improve environmental performance.
- **Values:** Work with commitment. Keep learning. Build a better quality of life.

Explore the guide

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Edition note: This guide translates and adapts the 2022 source catalog. Product availability and current specifications should be confirmed before ordering.

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Plant-derived chemistry for industrial odor control

NPD Plant-Based Deodorizers use selected plant-derived ingredients to interact with odor-causing compounds. The formulations are developed for different odor sources and operating conditions, rather than relying on fragrance alone to conceal unpleasant smells.

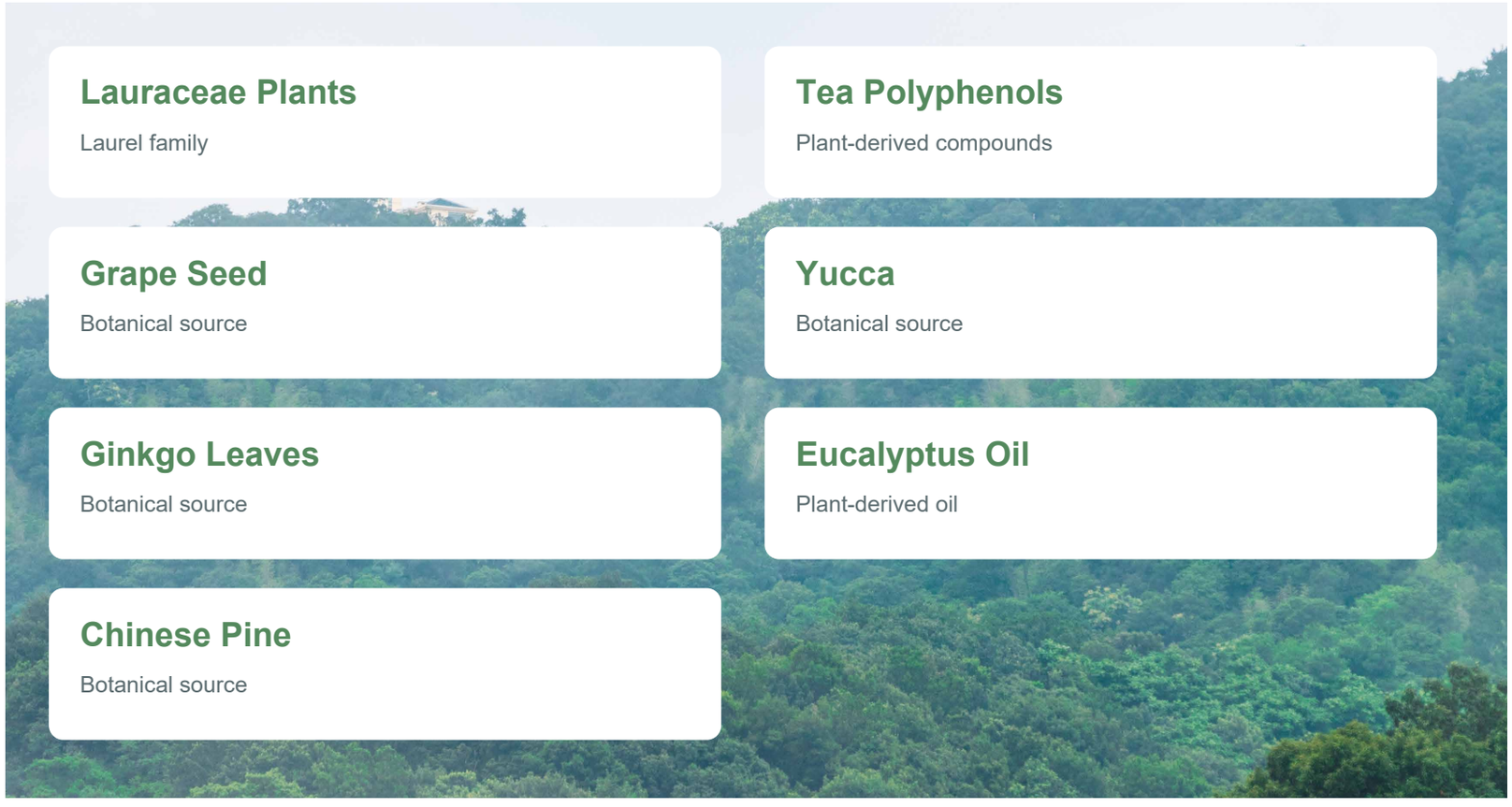
300+

Plant extracts referenced in the formulation platform

The source catalog describes a platform drawing on more than 300 plant extracts. The ingredient selection and formulation vary by grade and application.

6 application families

Municipal waste, livestock, industry, food processing, pharmaceuticals and household/pet environments.



Botanical sources shown are examples from the original illustration, not a complete ingredient declaration for every NPD grade.

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How NPD reduces odors

Delivered through high-pressure misting or a recirculating wet scrubber.

01

Contact

Fine droplets create a large gas-liquid contact area, bringing the formulation into contact with odor-causing compounds.

02

Capture and transfer

Plant-derived constituents, including glycosides, terpenes, sterols and alkaloids, help capture selected odorants and transfer them into the liquid phase.

03

Interaction and reaction

Active groups interact with captured compounds to reduce odor. The response depends on the odorant, formulation and contact conditions.

04

Control at the source

The catalog also describes inhibition of odor-generating microbial activity. This effect is formulation-dependent and is not a general disinfection claim.

Designed for practical application

- **Odor treatment, not fragrance masking:** targets odor-causing compounds rather than simply adding perfume.
- **Concentrated formulations:** dilution supports controlled dosing through suitable spray equipment.
- **Integration with existing systems:** selected grades can be used in wet scrubbers and misting installations.
- **No biological start-up period:** plant-based treatment does not require microbial acclimation or a biofilter.
- **Application-led selection:** match the grade and operating settings to the odor source.



Handling, material compatibility, biodegradability and safety claims must be checked against the current SDS and grade-specific test data.

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Product range | Municipal, agricultural and industrial

Model-specific data transcribed from the 2022 catalog. Dilution is with tap water unless stated otherwise.

NPD1010

Municipal waste | Ducted exhaust

Municipal waste treatment, food-waste recovery and waste-to-energy facilities with collected exhaust air.

Equipment	Wet scrubber
Appearance	White emulsion
pH	6.5-8.0
Application	300-500-fold dilution

NPD1011

Municipal waste | Fugitive odors

Waste transfer stations, composting, wastewater facilities, sewer odor control and malodorous water bodies.

Equipment	High-pressure misting / fog cannon
Appearance	Pale-yellow liquid
pH	6.5-8.0
Application	300-500-fold dilution

NPD2010

Agriculture and livestock

Livestock and poultry housing, aquaculture facilities, feed workshops, composting, wastewater and animal by-product handling.

Equipment	Wet scrubber / high-pressure misting
Appearance	Yellow liquid
pH	6.5-8.0
Application	300-500-fold dilution

NPD3010

Chemical and industrial processes

Petroleum refining, chemical production, rubber processing, plastics forming, coating and spray-painting operations.

Equipment	Wet scrubber / high-pressure misting
Appearance	Yellow microemulsion
pH	6.5-8.0
Application	300-500-fold dilution

Specifications are source-edition values, not a substitute for the current technical data sheet. Confirm the selected grade, dilution and equipment settings by site evaluation.

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Product range | Food, pharmaceuticals and pet environments

Choose the grade for the actual odor source and delivery system.

NPD4010

Food processing

Slaughterhouses, poultry and meat processing, seafood processing, fruit and vegetable fermentation, and commercial kitchen exhaust.

Equipment	Wet scrubber / high-pressure misting
Appearance	Yellow liquid
pH	6.5-8.0
Application	300-500-fold dilution

NPD5010

Pharmaceuticals and bioprocessing

Herbal extraction, pharmaceutical processing and biological fermentation operations.

Equipment	Wet scrubber / high-pressure misting
Appearance	Pale-yellow liquid
pH	6.5-8.0
Application	300-500-fold dilution

NPD6010

Household and pet environments

Offices, leisure and residential spaces, and odor control associated with pets and pet accessories.

Equipment	Atomizer / spray bottle
Appearance	White microemulsion
pH	6.5-8.0
Application	Direct spray; use as supplied

All three grades have a reported pH of 6.5-8.0. Use around people, animals and sensitive materials must follow the current product instructions and SDS.

Reported performance and safety testing

English summary of the testing information displayed in the 2022 catalog; not a laboratory-issued test report.

Odor-removal results

Target compound	Reported removal
Hydrogen sulfide (H_2S)	93.9%
Ammonia (NH_3)	94.2%
Dimethyl sulfide ($(CH_3)_2S$)	>99%*
Methyl mercaptan / methanethiol (CH_3SH)	96.9%

*The image caption states >99%; the surrounding source text states 99%. The original full report should govern any external performance claim.

Testing categories shown in the source

- Acute oral toxicity
- Acute inhalation toxicity
- Heavy-metal screening
- Corrosion-rate testing
- Safety / toxicological screening
- Physical and chemical properties

The source describes the tested samples as non-toxic in the reported oral and inhalation studies. This summary does not establish that every grade or every use is harmless.

Full test methods, sample identity and conditions are not sufficiently readable in the brochure. Verify the original reports and current SDS before making safety, compliance or guaranteed-removal claims.

APPLICATION CASE

Food-waste treatment and fermentation

Guangdong, China | NPD1010 + NPD1011

The challenge

Leachate residues around entrances and vehicle routes produced persistent sour odors. Unloading, wastewater treatment and composting generated further odor inside the enclosed facility, leading to complaints from nearby residents.

Existing system

Two negative-pressure collection lines fed a multi-stage scrubber train: acid washing, alkaline washing, sodium hypochlorite treatment and a final water-rinse stage.

Treatment approach

NPD1010 was dosed into the final scrubber, replacing water-only operation. NPD1011 was applied by automatic misting at entrances, unloading areas and other fugitive sources, using the reported 1:500 dilution.

Reported outcome

After one month, the case account reported improved odor control and resolution of the associated off-site odor complaints.



Food-waste handling area shown in the source case.

Process overview

Collected air → Acid / alkaline stages → Hypochlorite stage → **NPD1010 final stage** → Discharge

Case-specific settings are reproduced from the source and are not universal dosing recommendations.

APPLICATION CASE

Livestock housing and exhaust odor control

Sichuan, China | NPD2011 (case-study designation)

The challenge

Odors from pig housing, composting and animal by-product handling were carried by ventilation fans to an enclosed mesh-screen contact zone. The previous product masked odors with fragrance without satisfactory control.

Existing system

The collection and misting arrangement was already in place and did not require major modification.

Treatment approach

The masking product was replaced with NPD2011 at the reported 1:500 dilution in the existing misting system. The case also describes use alongside a disinfectant; compatibility must be established for the specific products before any combined use.

Reported outcome

Over three months, the source reports stable operation and satisfactory third-party results for hydrogen sulfide, ammonia, odor concentration and a separate bactericidal-rate assessment. It cites GB 14554-1993 for the historical odor assessment.

The product table lists NPD2010, while this case lists NPD2011. Confirm the grade before ordering or applying this example.



Ventilation fans and the enclosed exhaust-contact area.



Misting within the exhaust-contact enclosure.

Process overview

Collected exhaust → Misting / contact screen → Discharge

Odor control in rubber-component manufacturing

Pearl River Delta, China | NPD3010

The challenge

Heated forming operations at an automotive rubber-component plant generated strong process odors. The previous fragrance-based treatment left an unpleasant mixture of perfume and the original exhaust odor.

Existing system

Collected exhaust passed through a first wet scrubber, electrostatic oil-mist removal, activated carbon, UV treatment and a second activated-carbon stage.

Treatment approach

NPD3010 was introduced into the first scrubber at a reported 1:300 dilution. The case describes replenishment when odor returned, with additions of 10 kg in the morning and 10 kg in the afternoon.

Reported outcome

The case reports a noticeable improvement in odor at the final exhaust outlet. No quantitative removal result is provided for this installation.



Rubber-processing workshop and local exhaust collection.

Process overview



The 20 kg/day replenishment schedule relates to this installation only; it is not a standard consumption rate.

Commercial kitchen exhaust treatment

Guangzhou, China | NPD4010

The challenge

A large restaurant had effective collection and grease removal, yet the exhaust still carried a strong cooking odor after treatment.

Existing system

Kitchen exhaust was collected and passed through an electrostatic grease-removal unit, followed by a water scrubber before discharge.

Treatment approach

NPD4010 was dosed into the downstream scrubber at the reported 1:300 dilution, adding an odor-treatment stage to the existing grease-control arrangement.

Reported outcome

After one month, the source reports stable odor control, including during the peak cooking periods of 10:00-14:00 and 17:00-21:00. No noticeable abnormal odor was reported during those observations.

Observations describe the source case; they are not a guarantee for all kitchen exhaust systems.



Commercial kitchen exhaust collection.



Kitchen exhaust-treatment equipment.

Process overview

Kitchen exhaust → Electrostatic grease removal → **NPD4010 scrubber** → Discharge

APPLICATION CASE

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Wastewater odor at a herbal-medicine facility

Yunnan, China | NPD5010

The challenge

Herbal extraction and fermentation generated wastewater requiring combined physicochemical and biological treatment. Open anaerobic tanks released strong odors, resulting in complaints from neighboring residents.

Existing system

The wastewater process included an anaerobic-anoxic-oxic (A2/O) biological stage, but no dedicated odor-control system was operating around the open tanks.

Treatment approach

A high-pressure misting system was installed around the anaerobic and anoxic tanks. NPD5010 was applied to contact the odors released from these open areas.

Reported outcome

The source describes continued operation for ten months with improved odor control and resolution of the related complaints. It does not specify a dilution ratio for this case.

Anaerobic and anoxic tanks are distinct from aerobic tanks; the source treatment locations are retained here.



Misting around the wastewater-treatment area.



Odor-control misting along the open tanks.

Process overview

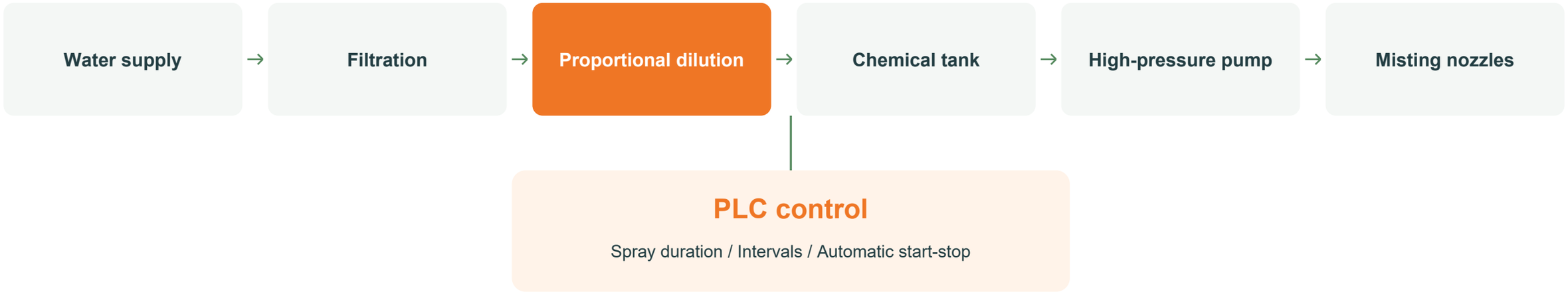
Open tanks → **NPD5010 mist contact** → Fugitive odor control

High-pressure misting systems

Integrated chemical delivery for NPD plant-based odor control.

GZXZEP high-pressure micro-misting systems combine pumping, dilution and spray control in a compact installation. Configurations can be adapted to the application, with a focus on straightforward operation, maintenance and integration with existing facilities.

System arrangement



Configurable functions

- Constant-pressure water supply
- Low-water / dry-running protection
- Water filtration and multi-circuit timing
- Motor protection and automatic drainage
- Water heating for low-temperature operation

Typical applications

Waste transfer stations, landfills, waste-to-energy facilities, wastewater treatment, livestock operations, pulp and paper production, and pharmaceutical manufacturing.

Schematic illustration. Final equipment configuration depends on the required coverage and operating conditions.

Equipment details and operating functions

Chemical delivery, controls and atomization should be designed as one system.

01 PLC control

Automatic spray operation with adjustable spray duration and intervals. The operator interface displays the operating sequence and supports start-stop control.

02 Automatic dilution and dosing

Filtered water passes through a proportional dosing pump before entering the chemical tank. The source specifies a 304 stainless-steel tank with level indication and a low-level alarm.

03 Chemical transfer and pressure generation

The system uses a high-pressure plunger pump and a chemical transfer pump. The source specifies 304 stainless steel for the transfer pump and describes low-noise, continuous-duty operation.

04 Piping, nozzles and valves

Stainless-steel distribution lines and high-pressure atomizing nozzles deliver the diluted product. Solenoid valves support automatic control of the spray circuits.

Atomization figures reported in the catalog

Nominal droplet size: 10 micrometers

Reported maximum spray reach: ≥5 m

Droplet size and spray reach depend on nozzle selection, pressure, layout and site conditions. Confirm these values for the actual equipment configuration.

Microbial odor-control products

A separate biological treatment route using selected odor-degrading microorganisms.

Microbial odor-control products use selected microorganisms associated with a carrier or biofilm to treat odor-bearing air. Performance relies on gas-liquid transfer and biological activity within a suitable contact system.

1. Transfer

Odor compounds contact the water or wetted biofilm, dissolve in the liquid phase or attach to the interface.

2. Uptake

Dissolved compounds are adsorbed and taken up by microorganisms. For some less-soluble substrates, extracellular enzymes assist conversion before uptake.

3. Biodegradation

Microorganisms metabolize suitable odor compounds as substrates, reducing the odor load under appropriate operating conditions.

Nitrogen-containing odors

For ammonia, nitrification converts ammoniacal nitrogen to nitrate under aerobic conditions. A subsequent anoxic denitrification step can convert nitrate to nitrogen gas where the process provides suitable conditions.

Sulfur-containing odors

Biological treatment can target hydrogen sulfide and selected reduced-sulfur compounds. Depending on the microbial community and conditions, organic sulfur may pass through sulfide intermediates before oxidation to sulfate.

These pathways describe biological treatment principles. Plant-based NPD formulations and microbial products are different treatment approaches and should not be treated as interchangeable.

APPLICATION CASE

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Restoring a biological odor-control system

Gansu, China | Microbial odor-control product

The challenge

At a waste-to-energy facility, unwanted microbial growth had developed in the biological filter. The source reports strong odors at the exhaust outlet and poor treatment performance.

Existing system

Collected air passed through alkaline and acid scrubbers before a biological trickling filter. The previous biological odor-control program included an external COD source.

Treatment approach

The previous product was stopped and excess unwanted growth was removed from the packing. The system was restarted using the company's microbial product at the source-reported 1:100 dosing ratio, followed by daily additions at 1:200.

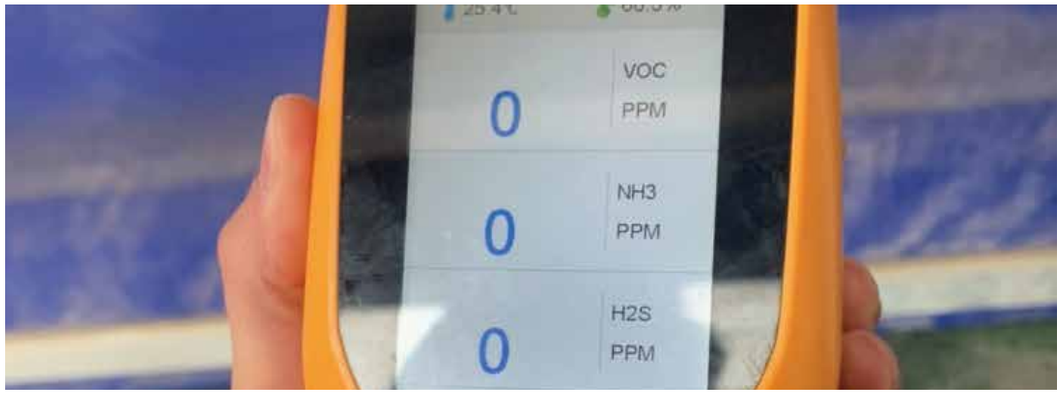
Reported outcome

After two weeks, the case account describes establishment of the desired microorganisms on the media and a marked improvement in odor control.

The source does not define the basis of the 1:100 and 1:200 ratios. Confirm dilution versus system-volume dosing before use; the photograph alone is not a validated removal result.



Scrubbing and biological odor-treatment installation.



Field gas monitoring illustrated in the source case.

Process overview

Collected air → Alkaline / acid scrubbers → Biotrickling filter → Discharge

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Application assessment | Fugitive odor sources

For open areas, building openings and other non-ducted emissions. Complete the applicable fields and attach site photographs.

1 Site and odor source

Industry / production process

Examples: waste handling, leather, livestock, pharmaceuticals, rubber, plastics or coating.

Odor-generating area (e.g. wastewater tanks / workshop)

Odor-source area (m²)

Main odor compounds / odor description

2 Misting system

High-pressure pump rated flow (L/min)

Operating pressure (bar / MPa)

Adjustable dilution range of the automatic dosing pump

Spray coverage area (m²)

2 Misting system (continued)

Nozzle model (1 / 2 / 3 / 4 / 5, if applicable)

Number of nozzles

Nozzle spacing (m)

Other atomizer: centrifugal / fog cannon / other

Type / quantity / rated power (kW)

Spray throw or pump head (m); specify which

Droplet size (micrometers)

3 Current treatment and objectives

Product brand / type; duration of use and results

Dilution / dosing point / frequency; daily consumption / cost

Target performance / budget; process diagram / photos attached

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Application assessment | Ducted exhaust

For collected exhaust treated in wet scrubbers, biofilters or other centralized odor-control systems.

1 Site and measured odor load

Industry / production process

Odor-generating area (e.g. wastewater tanks / workshop)

Main odor compounds

Inlet odor concentration / units

Outlet odor concentration / units

Individual inlet / outlet levels: H2S, NH3, mercaptans, sulfides

Use measured values and state units and test method. Leave blank if not measured; do not estimate concentrations by smelling the exhaust.

2 Exhaust-treatment system

Treatment equipment / process sequence

Airflow (m³/h) / duct diameter (mm) / air velocity (m/s)

3 Current chemical program

Deodorizer brand and type

Equipment type: wet scrubber / biofilter / other

Recirculating-water volume (m³)

Dilution / dosing point / water-replacement frequency

Consumption rate and observed performance

Required performance and planned operating budget

Process diagram and site photographs attached

Discuss your odor-control application

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