

Study Guide – Odor Control Technician (OCT)

This study guide is provided to you to complement the lecture and hands-on learning environment of the Deodorization/Decontamination Odor Control course. Please use this guide to become familiar prior to class with terms and basic information. When combining this pre-course study guide with classroom instruction, your exam should be easier with higher retention.

Deodorization principles:

- **Identify** and then **Remove** the source, as possible
- **Clean** contamination from surfaces
- **Recreate** the **conditions** of **penetration** with appropriate counteractants
- **Seal (encapsulate)**, if required

General Deodorization:

- **Detection device** – nose (“sniffometer”)
- **Types of odors:** - real and heightened awareness (“psychological”)
- **Amplification of odors:** - temperature and humidity
- **Particle size** – smoke - **.01 – 4** micron; nicotine – **0.01 – 1** micron
- **Combination methods** – usually, the best process to remove odors

Deodorization agents:

- **Masking** – pleasant fragrance; “odorizer”; time-release agents; oils, gels, solids, blocks (air-spaces; HVAC system ductwork)
- **Sorbing** – **absorbent** – draws odors “into”; **adsorbent** – draws odors “onto” (odor granules)
- **Pairing** – combines with malodor to produce non-odorous substance; combined with masking agents (a.k.a. “odor modifiers”) in most fire/smoke odor restoration chemicals
- **Disinfectant** – (bactericides, biocides, germicides) – EPA-registered; destroys odors from microorganisms
 “-cide” – suffix meaning to “kill”; **“-stat”** – suffix meaning to “limit or control” growth
- **Sanitizer** – urine decontaminant; safe for use on stain-resistant carpet fibers (aldehydes)
- **Digester** (enzyme) – digests protein odors (blood, milk, egg, urine, meat, bodily fluid)
- **Oxidizers** – (hydrogen peroxide, sodium hypochlorite) – destroys odors
- **Oxidizing gas** – (ozone) – destroys odors through ozone O₃ – permanent odor removal
- **Odor diffusion** – (e.g., Vaportek) – safe, natural, essentials oils
- **Sealer (encapsulant)** – alcohol-based, non-porous to “lock-in” odors in salvable materials (stains; odors)
- **Sealer (molecular encapsulant)** – chemical encapsulant, with bonding agent, to hold ‘deodorized’ molecules in suspension (urine; protein odors; smoke)

Deodorization equipment:

- **Safety** – chemical-resistant gloves; body gear; respiratory
- **Injection** – syringe needle; trigger pump with injection needle (large dispersal ability)
- **Pump/pressure Sprayers** – hand-held; in-line injection; electric (controlled pressure)
- **Power blower** – fogging interior of walls; **Ejector fan** – gas and smoke evacuation
- **Wet “cold” foggers** – water-based agents (**tri-jet** 20-50 microns) and (**ULV** – 8-15 microns) – fog airspace; not to be used on water-sensitive surfaces; respiratory irritant
- **Dry solvent “hot” fogger** (hand-held or gasoline-powered) – solvent-based (.5-2 microns)

- **Vapor diffusers** – safe, natural and essential oils (molecular size)
- **Ozone generator** – electric-powered creating ozone (molecular size) – use in unoccupied areas; persistent protein odors; degrades natural rubber; heavier than breathable oxygen – use with airmover
- **AFD (air filtration device)** – chemical-sensitive customers; ventilation of toxic or malodors; **HEPA (High Efficiency Particle Air)** filters capture **99.97%** of particulates down to **.3 micron** size (fungal/bacterial)
- **Subsurface extraction tool** (e.g., water claw) – ability to flush thoroughly any contaminants from carpet and cushion; reach penetrated areas with appropriate deodorant; “**Recreates the Conditions of Penetration**”

Disinfectant – (bactericides, biocides, germicides) – destroys odors caused by microorganisms; do not fog into respirable air; obtain written informed consent

- “**-cide**” – suffix meaning to “kill”
- “**-stat**” – suffix meaning to “limit or control” growth
- **EPA (Environmental Protection Agency)** – jurisdiction over use of disinfectants
- “**disinfect**” – destroy a broad spectrum of microorganisms, but not all spores
- “**sanitize**” – reduce microorganisms on surfaces to safe level for human use
- “**sterilize**” – destroy a broad spectrum of microorganisms and all their spores
- **Types** – (oxidizers; quaternary ammonium chlorides; aldehydes; alcohols; phenolics; iodophors)

Urine Contamination

- territorial area – animals “mark their territory”
- odors amplified by humidity and temperature
- alkaline salts (transformed pH from acidic urine) attracts humidity from air, amplifying odors
- locating urine (yellow pigmentation; fluorescent UV light, black light; discolorations)
- chemical requirements (*Neutralize – Sanitize – Deodorize*)
- **General process** – identify the source; apply acid spotting agent; disengage carpet/remove tackless, as needed; saturate backing with appropriate agent; allow dwell time; seal subfloor; install new cushion; reinstall carpet; final clean; accelerate drying

Microbial odors

- **Requirements for growth** (food source; temperature; moisture; stagnant air; time)
- **Odor elimination** – arrest odor (slow growth; alter environment); eliminate source

Miscellaneous odors:

- **Environmental Tobacco Smoke (ETS)** – treat as a **persistent grease fire** - small particle size; penetrates porous surfaces; yellowing, requires thorough cleaning of all surfaces and fabrics
- **Bloodborne Pathogens (BBP)**
 - present in human body/blood discharge – examples – Hepatitis B (HBV); HIV
 - **contaminated materials** means there is presence or reasonably anticipated presence of blood
 - Hepatitis B – liver damage; HepVac shots (3-series) required for who may be exposed in work at no charge to employee
 - **Engineering controls** – hand washing ability; proper disposal of sharps; minimize exposure
 - **Universal precautions** – treat all human blood and certain body fluids as if known infectious
 - **Decomposition of animal odors** – find source, treat with 4 principles
 - **Skunk odors** – spray from musk gland (sulfur spray – highly penetrating; pungent) – thoroughly clean and use oxidation for best odor removal
 - **New carpet odors** – ventilate; “baking”; cleaning; ozone gas
 - **Tear gas** - treat as a **persistent grease fire** – massive ventilation required