

Chapter 8

Hazardous Substances and Pest Control

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Chapter 8 : Hazardous Substances and Pest Control

A hazardous material is any substance that causes injury, impairment of health, or death to living organisms, or which can damage the environment, through being toxic, flammable, explosive, corrosive or infectious. A variety of hazardous materials or materials generating hazardous waste are used in a hotel's daily operations. They must be handled, stored and disposed of carefully.

Sources of hazardous materials in the hotel are :

Kitchen

- Bleaches
- Oven and drain cleaners
- Acids
- Disinfectant/germicidal cleaners
- Insecticides

Housekeeping

- Bleaches
- Toilet and drain cleaners
- General cleaning chemicals
- Insecticide sprays
- Window-cleaning chemicals

Laundry

- Dry-cleaning chemicals such as perchloroethylene
- Bleaches

Engineering and Maintenance

- Solvents
- Acids
- Oils and grease
- Paints
- Wood preservatives
- Hydraulic fluids
- Fuels



(Photo 8.1) Bleaching agent, toilet cleaner and general cleaning chemicals must be handled, stored and disposed of carefully.

Health club

- Swimming pool disinfectant

Administration

- Solvents
- Printing inks
- Photocopying chemicals
- Chemical cleaners

To safeguard the health of guests and employees, and to minimise any adverse impact of the hotel's operations on the natural environment, some suggested measures are as follows:

Hazardous Materials Handling

- Minimise the use of hazardous materials.
- Limit the use of hazardous materials to trained personnel.
- Ensure that hazardous materials are stored, labelled, used, handled and disposed of in accordance with local standards and requirements.
- Identify and record where hazardous materials are being used, what they are being used for and the reasons for their use.
- Assess the hazards associated with their use.
- Use, where possible, environmentally preferable alternatives
- Compile a hazardous materials manual.
- Use home-made cleaning products, which are often cheaper than the commercial equivalents, e.g. eliminate the use of bleach by replacing it with the mixture of vinegar and baking soda that is currently used by some housekeepers.
- Ensure that any residues / containers are disposed of in an environmentally friendly manner.

Hazardous Materials Storage

- Store in a cool place, to avoid chemical reaction through excessive heat or direct sunlight.
- Store on strong shelving and stack in such a way as to avoid falling over, and hence breakage/spillage.
- Facilitate stock rotation, in order to prevent old chemicals being discarded.
- Do not block any corridors or access.
- Ensure all appropriate emergency equipment is readily available, i.e. correct fire-extinguishers, fire blankets, fire hose, and a comprehensive first-aid box.
- Keep incompatible chemicals securely isolated from each other, as a mixture of these products may cause chemical reaction or even an explosion.
- Particularly volatile chemicals/materials, e.g. gas cylinders should be stored and secured correctly in designated stores according to local requirements.
- Avoid over-stocking, and hence waste and disposal problems.
- Properly label containers to eliminate confusion, which could lead to the possible misuse of the housekeeping chemicals.
- Train all relevant hotel staff on the handling, use, storage and disposal of hazardous materials.
- Use a dispensing system to automatically dilute each product as it safely transfers bulk chemical to the containers used by housekeepers instead of pouring by hand into individual containers.
- Cover all chemical containers to reduce the likelihood of a spill.



(Photo 8.2) Ensure all appropriate emergency equipment is readily available, i.e. fire-extinguishers and fire sand box.

Box 8.1 – Environmentally Preferable Pest and Disease Control

Some environmentally preferable ways of controlling major pests in hotels, which can reduce the need to use expensive chemicals in the grounds and also reduce other irritants that might affect allergy-sensitive guests, are listed below:

Cockroaches

- Maintain hygiene effectively.
- Use sticky traps lined with pheromones, boric acid.
- Use insect growth regulators and sprays.

Dustmites

- Vacuum mattresses and pillows regularly.
- Improve ventilation and keep a low relative humidity to reduce numbers of dust mites.
- Conduct thermal treatment of beds and furnishings on a periodic basis (The bed and furnishings are put into a very large plastic bag, which is then sealed and heated up to 100°C, killing off any mites and bed bugs).

Moths

- Expose clothes under direct sunlight.
- Use sticky traps lined with pheromones.

Insects & Mosquitoes

- Ensure lids fit tightly and clean bins regularly.
- Ensure no standing water in flower pot saucers, buckets and drains.
- Repair leaking taps and air-conditioning units.
- Purchase natural insecticide with natural pyrethrum extracted from the Chrysanthemum plant.
- Use ultra-violet (UV) fly killing machines.
- Select disease-resistant varieties of plants or replace monocultures with a variety of plants, which is effective in reducing numbers of certain pests.
- Fill ponds or lakes with mosquito-eating fish such as top-feeding minnows or goldfish.

During pest control carefully observe the following guidelines below:

- Use a selective chemical that has the least effect on non-target species.
- Treat only the area affected.
- Use the most suitable chemical, in the minimum amount necessary to achieve the desired results.
- Employees should change their clothing and wash thoroughly with soap and water after applying pesticides.
- Work in well-ventilated areas.



(Photo 8.3) Use ultra-violet (UV) fly killing machine.



(Photo 8.4) Standing water in flower pot saucers may attract mosquito breeding.

Case Studies



a. Case 8.1 – A Hotel in Vienna, Austria

Ultrasonic devices are used in place of pesticides to keep rats and mice away from the hotel terrace. Biological ant traps are used to prevent the ingress of ants.

(Source: *Environmental Management For Hotel by International Hotels Environment Initiative*)

