

Cleansing workers



Safe use of chemicals



Labour Department
Occupational Safety and Health Branch



OCCUPATIONAL SAFETY & HEALTH COUNCIL

A cleansing worker has to use various kinds of chemicals such as pesticides, disinfectants and bleaching solutions. These chemicals may be inflammable and may contain volatile and hazardous ingredients that are harmful to the skin, eyes and the respiratory system.

How do chemicals enter our body?

Chemicals can enter the body through skin absorption, swallowing and inhalation.

Skin absorption of chemicals can occur if suitable gloves and protective clothing are not used. Unprotected skin can be hurt by chemicals too.



Swallowing of chemicals can occur when eating or smoking with contaminated hands.



Inhalation of chemical fumes and solvent vapours can occur when such chemicals are handled in a poorly ventilated area.

What are the health hazards of chemicals to our body?

Different types of chemicals may exert different adverse health effects to the body, as follows:

Skin

- Burns by direct contact (e.g. with concentrated bleaching solutions).
- Reddening, itch and allergy.
- Dryness, cracks and inflammation.



Eye

- Burns caused by accidental spillage of chemicals.
- Irritation caused by chemical fumes and solvent vapours. Symptoms including reddening and swelling with tears.



Respiratory System

- Irritation due to chemical fumes and vapours can cause coughing.



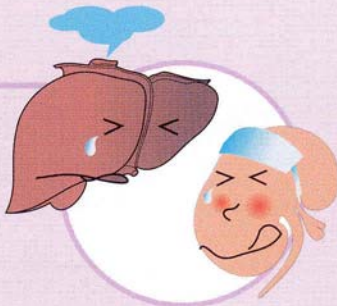
Nervous System

- Acute or immediate health effects such as headache, dizziness and anesthesia.
- Chronic or long term health effects such as neuropathy.



Other Organs

- Liver and kidney functions may be affected after a prolonged period of exposure to chemicals.



Besides, some flammable chemicals such as thinners and white spirit can cause fire and explosion if they are not properly used or stored. Other chemicals may release toxic gases or cause burns to the body when they are mixed or accidentally spilled. For example, mixing of bleaching solution with acids can result in the emission of toxic chlorine gas.

(Please refer to the Appendix for the health hazards of the commonly used cleansing chemicals)

How to protect our health during the handling of chemicals:



- Keep work area well ventilated while using chemicals. For example, open windows and turn on exhaust fans.

- Avoid using hazardous chemicals for cleaning work whenever possible; otherwise, choose the less hazardous ones.
- Read the hazard information and safety precautions given in the material safety data sheets and labels on the package of the chemicals before use.
- Follow the method of use and safety precautions recommended by the manufacturer.
- Maintain good ventilation in the work area when hazardous chemicals are in use. If necessary, use local exhaust ventilation system to remove airborne contaminants at source.
- Avoid over storage of chemicals in the work area.



- Cover all the chemical containers securely to prevent leakage or spillage due to accidental overturning of containers.
- Store incompatible chemicals (e.g. bleaching solutions and hydrochloric acid) separately. Never attempt to mix these chemicals.



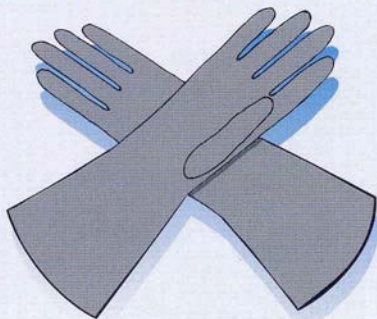
- Do not eat or smoke in areas where chemicals are used or stored.



- Wash hands, arms and face immediately after work or before eating to prevent any chemical residues entering the body through the skin or swallowing.

- Wear suitable personal protective equipment such as gloves, face shields, rubber boots, respirators, aprons, etc.

* Wear impervious and chemical resistant gloves when handling chemicals. Reference on the choices of gloves should be made in accordance with manufacturers' recommendations. For example, gloves made of synthetic rubber, neoprene, nitrile or polyvinyl chloride are suitable for general cleansing work. However, nitrile and polyvinyl chloride gloves are not suitable for the handling of lacquer or thinners. Additionally, gloves should be inspected each time before use as the glove materials may have degraded or deteriorated over time.





* Wear suitable goggles or face shields when handling or diluting concentrated chemicals to avoid accidental splashing to the eyes or face.

* Wear impervious chemical resistant rubber boots, aprons and clothing if necessary.

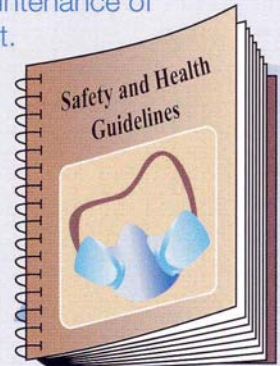


* Wear appropriate respirators with suitable air filters if there is a likelihood of inhaling excessive chemical gases.

* All workers should pay attention to the correct ways of donning, use and maintenance of personal protective equipment.

* All protective equipment should be cleaned and stored properly after use.

- Attend training courses provided by employers before using hazardous chemicals.
- Follow safety and health guidelines such as not smoking in the work area and avoiding manual delivery of chemicals whenever possible.
- Consult employers if in doubt.



Appendix: Commonly used chemical cleaners

| Common Name | General Uses | Possible Ingredients | Potential Safety/Health Hazards | Remarks/ Preventive Measures |
|---|---|--|---|---|
| Organic solvents (e.g. white spirit and thinner) | To remove grease or clean metal surfaces | n-hexane, perchloroethylene, hydrocarbons, toluene and xylenes | <ul style="list-style-type: none"> Liquids and vapours may cause fire and explosion. Direct contact with these chemicals may cause drying, cracking, inflammation and bacterial infection of the skin. Irritation to the eyes and respiratory system. Inhalation of excessive vapours or skin absorption may cause dizziness and damage to the liver, kidneys and the nervous system. | <ul style="list-style-type: none"> Maintain good ventilation in the workplace. Avoid inhalation of vapours or skin contact with the chemicals. Use suitable personal protective equipment such as respirators and gloves. |
| Acidic cleaning agents (e.g. rust remover, toilet bowl cleaner and drain opener with strong acids, hydrochloric acid, etc.) | To remove rust on objects and fabrics, tough stains on concrete or other surfaces and to clean toilet bowls and clear clogged drains/ pipes | hydrofluoric acid, sulphuric acid, hydrochloric acid | <ul style="list-style-type: none"> Hydrofluoric acid may enter the body through skin absorption to cause ulcer that may lead to osteonecrosis. Sulphuric acid and hydrochloric acid are irritating to the respiratory system, eyes and skin. They are corrosive and may release toxic gases when mixed with bleaching agents or alkaline cleaning agents. | <ul style="list-style-type: none"> Avoid inhalation of fumes. Avoid direct contact with these chemicals. Use suitable personal protective equipment such as gloves, face shield and protective clothing. Do not use these chemicals with bleaching solution and chemicals containing sodium hypochlorite or other alkaline chemicals. |
| Alkaline cleaning agents (e.g. caustic soda, yellow powder, drain opener and bleach) | For degreasing, bleaching, clearing clogged drains/pipes and disinfection purposes | Sodium hydroxide and sodium hypochlorite | <ul style="list-style-type: none"> Sodium hydroxide is corrosive. Sodium hypochlorite may cause skin allergy and inflammation. Concentrated bleaching solution can cause burns to the skin. Mixing bleaching solution with strong acids may result in a vigorous chemical reaction which may release toxic gases. | <ul style="list-style-type: none"> These chemicals should not be used with acidic cleaning agents, oxidizing agents or hot water. Use suitable personal protective equipment such as gloves, face shield and protective clothing. |

| Common Name | General Uses | Possible Ingredients | Potential Safety/Health Hazards | Remarks/ Preventive Measures |
|--------------|--------------|---|--|--|
| Insecticides | Pest control | Organo-phosphates, Organochlorines, carbamates, pyrethroids, rodenticides, etc. | <ul style="list-style-type: none"> All insecticides are toxic and may cause acute poisoning or other adverse effects to our body. Improper use of insecticides may cause fire and explosion. | <ul style="list-style-type: none"> Avoid inhalation of the fumes. Use suitable personal protective equipment. Evacuate staff and enhance ventilation before spraying. Workers should leave the working place for some time after spraying of insecticides. No one should be allowed to enter the place or stay there immediately afterwards. |

Further Information

This leaflet is issued free of charge and can be obtained from offices of the Occupational Safety and Health Branch or downloaded from the website of the Labour Department at <http://www.labour.gov.hk/eng/public/oh/OHL35b.pdf>.

For enquiries and other information, please contact the Occupational Safety and Health Branch of the Labour Department.

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Information on the services offered by the Occupational Safety and Health Council can also be obtained through its hotline 2739 9000.

