

Test Items

Seven Common Toxic Chemicals

Xylene

- A solvent in the printing, ink, rubber, and leather industries.
- Exhibits neurological effects. High levels from exposure for acute or chronic periods can cause headaches, lack of muscle coordination, dizziness, confusion, and alterations in body balance. Exposure of people to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat, difficulty in breathing and other problems with the lungs, delayed reaction time, memory difficulties, stomach discomfort, and possibly adverse effects on the liver and kidneys.

-Source: Occupational exposure, soil contamination from leaking underground storage tanks containing petroleum products.

Toluene

- A clear and aromatic volatile liquid, often used as an important organic solvent. Widely used as an industrial feedstock in the manufacture of explosive, pesticides dyes, plastic and nylon. It can also be used as a booster in gasoline fuels.

- Exposure to Toluene is mainly through inhalation, eating, or absorption through skin. The exposure irritates the skin and mucous membrane and affects central nervous system. Acute poisoning occurs after inhalation of higher concentration of toluene; causes irritating symptoms to eye and upper respiratory tract, other symptoms like headache, dizziness, nausea, vomiting and confusion. Long term exposure will cause neurasthenia, menstrual abnormalities, dryness of skin and dermatitis.

Benzene

- A highly flammable and aromatic clear liquid, one of the most basic petrochemicals; Very toxic and carcinogenic. Human and animal's exposure to benzene has serious health effects.

- Affects our central nervous system and causes acute poisoning. Low levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, and death.

- Contributes to develop neuroasthenia and causes chronic poisoning; Damages the bone marrow and can cause a decrease in red blood cells, leading to anemia; Can cause excessive bleeding and depress the immune system, increasing the chance of infection.

-It is worth noting that the benzene-bearing preservative in some of the soft drinks will react with Vitamin C to form Benzene.

Styrene

- An important material in the manufacture of plastic.

- The US EPA has described styrene as "a suspected carcinogen" and "a suspected toxin" to the gastrointestinal tract, kidney, and respiratory system, among others.

Trimethylbenzene

-1, 2, 4-Trimethylbenzene dissolved in mineral oil is used as a liquid scintillator.

- Used as a sterilizing agent and in the manufacture of dyes, perfumes, resins as well as a gasoline additive.

Phthalate

- Used in the manufacture of plastics to allow for flexibility and an important component in PVC; Found in everything from makeup to detergents, shampoos to time-released pharmaceutical drugs. Recent researches revealed food is also one of main sources of phthalates.

- Phthalic acid esters are well known endocrine disruptors which may cause neurological and developmental disorders. They can interfere with tryptophan metabolism resulting in an increase in quinolinic acid, a pro-inflammatory and neurotoxic compound. Phthalates have also been implicated in abnormal fetal development, especially in male fetuses. US Federal Law has banned the use of phthalates in 6 kinds of baby products in 2008. The Pediatric Medical Magazine pointed out that baby lotion and shampoo may increase the phthalates concentration found in babies, which may contribute to increasing occurrence of allergy and affect babies' reproductive health. In 2011, a high concentration of plasticisers is detected in a range of packaged food in Taiwan, with many are phthalates.

Paraben

- The most commonly used preservatives in personal care products, including cosmetics, skin & hair care products and even baby products. Suppress the microbial growth, thus help extending the shelf life of these products.

- Proven to mimic estrogenic and disrupts normal hormonal activity, posing potential damage to the development of reproductive system of male fetuses. Parabens have been detected in certain human breast cancer cell lines; many scientists thus point out that breast cancer is closely related to the exposure to parabens. Denmark is the first European country to ban parabens in lotions and other cosmetic products for children under 3. Researchers reveal that absorption via skin is far more dangerous than that of through eating as skin is the largest organ in our body.