Toxicant scavenger hunt

Literature, Russian Literature

Toxicant Scavenger Hunt Template Use the text, ToxMystery, and the Agency for Toxic Substances and Disease Registry (ATSDR) as resources to provide the necessary details about each toxicant found.

Toxicant

. Acetone

Chlorine

Uranium

Lead-210

butane

Classification of toxicant

Volatile Organic Compound (VOC)

Harmful solvent

Heavy metal (radioactive)

Heavy metal (radiation)

Harmful solvent also, VOC

Source

Best Value Nail Polish Remover

Clorox Bleach

Antique glazed pottery

Cigarette smoke

Oust Air Freshener and Disinfectant spray

Location in house or room

Bathroom/bedroom

Bathroom/kitchen

Kitchen/garage

All rooms

All rooms

Effect on plants and humans

Humans will experience the symptoms of exposure, however, plants changes the acetone into CO2 and saved for normal plant functions. (National Library of Medicine, 2013)

High levels of chlorine fumes are detrimental to human beings. Like humans plants are pretty tolerant of chlorine, however, it large doses it can be unhealthy. (National Library of Medicine, 2013)

The reaction to uranium may not be immediate; it can be a build up over time. Radiation in plants is very dangerous. It can corrupt proper growth and development. (National Library of Medicine, 2013)

Exposure to cigarette smoke s quite common, however, in large concentration in can be quite dangerous for one’s health, Like uranium radioactive substances cause developmental flaws and in growth. (National Library of Medicine, 2013)

Long term effects of human exposure include CNS depression and Sensitizing of the myocardium. Along with pulmonary and hypertensive potentials. In plants there appears to be o direct effect of the butane on the plants, however, the butane particles build up in the soil and prevent the plants from absorbing the proper nutrients.

Routes of exposure

Inhalation, ingestion, or through the skin.

Primarily inhalation, also, ingestion.

General exposure and physical contact

Inhalation and ingestion are most common

Inhalation; through skin, digestion

Distribution

Passive diffusion (Heinrich-Ramm, Jakubowski, Heinzow, Molin Christensen, Olsen & Hertel, 2000)

Passive diffusion

Passive diffusion

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Passive diffusion(Heinrich-Ramm, Jakubowski, Heinzow, Molin Christensen, Olsen & Hertel, 2000)

Toxic response

Irritation to eyes, nose, throat, and lung aggravation. (ATSDR, 2013)

High exposure levels can cause headache, vomiting, chest tightness, pneumonia, lung collapse, and, even, death. (ATSDR, 2013)

Liver damage, kidney damage, and even death. (ATSDR, 2013)

Can cause eye and throat irritation. Ti can also cause muscle and joint pain, as well as, negative reproductive issues. (ATSDR, 2013)

The toxic response to butane includes dizziness, delirium, fatigue, mental impairments, slurred speech, and intoxicated behavior.

Elimination

The body breaks down the Acetone quickly, separating into glucose and fats, the latter saved for normal body functions. The remainder is reduced to CO2 and expelled in our breath (National Library of Medicine, 2013)

The elimination of chlorine from the body occurs through regular metabolism and exhalation.

Does not leave the body easily. It can be stored in the body

Like other heavy metals they tend not to be removed during normal detoxification and it can build up and be stored in the body. (U. S. Department of Health and Human Services, 2013)

Elimination of butane from the body is mostly through exhalation.

Use the text, ToxMystery, and ATSDR as resources to provide the necessary details about each toxicant found.

Toxicant

. mercury

Formaldehyde

Carbon monoxide

Piperonyl butoxide

Cadmium

Classification of toxicant

Heavy metal

VOC

VOC

pesticide

Radioactive (heavy metal)

Source

Johnson and Johnson Thermometer

Palmolive liquid hand soap; aromatherapy

Car exhaust; cigarette smoke

Raid: Ant and Roach Spray

Castrol GTX Motor Oil

Location in house or room

bathroom

Bathroom/kitchen

Garage, all rooms

Kitchen/garage

garage

Effect on plants and humans

Like heavy metals its tendency to remain in the body and build up to toxic levels over time. Plants do not appear in the research to have any extreme reaction to the mercury. (National Library of Medicine, 2013)

In humans the toxin builds up in the lungs causing shortness of breath, among other breathing problems. Most plants have little reaction. They metabolize it quickly and release it into the air. (National Library of Medicine, 2013)

Most people handled general average exposures to carbon monoxide. However, in large doses it is quite dangerous and is designated a contributory carcinogen In plants carbon monoxide is far less dangerous than it is for humans. Plants quickly convert carbon monoxide into CO2 and use it for photosynthesis processes. (National Library of Medicine, 2013)

Despite its ability to kill insects, this pesticide is not as harmful to humans as other chemicals in the environment. It, also, has been designed for indoor and outdoor use, so it is safer under normal exposures for pets, plants, and human beings. (National Library of Medicine, 2013)

In humans it can causes several unpleasant symptoms. It is also a human carcinogen. (National Library of Medicine, 2013) In plants exposure to

cadmium can cause limited development, stunted growth, and disruption to, both, photosynthesis and nutrient absorption. (Benavides, Gallego & Tomaro, 2005)

Routes of exposure

Ingestion and through skin

Primarily through inhalation, but ingestion and skin contact is not impossible.

Primarily inhalation

Primarily inhalation; indigestion.

Physical exposure

Distribution

Passive diffusion

Passive diffusion (Heinrich-Ramm, Jakubowski, Heinzow, Molin Christensen, Olsen & Hertel, 2000)

Passive diffusion (Heinrich-Ramm, Jakubowski, Heinzow, Molin Christensen, Olsen & Hertel, 2000)

Passive diffusion

Passive diffusion

Toxic response

The highest levels of exposure can lead to “ mercury poisoning.” Which will include symptoms like nausea, vomiting, diarrhea, weight loss, and can contribute to kidney damage, brain damage, and death, (ATSDR, 2013)

Aside from the shortness of breath, Formaldehyde is considered a human carcinogen, meaning cancer causing. It also may cause menstrual issues in some women. (ATSDR, 2013)

If exposed too often or too long to carbon monoxide gas the result may nausea, headaches, vomiting, dizziness, and, possibly, convulsions, coma, and death. (ATSDR, 2013)

If exposed to high and extremely concentrated doses it can be unhealthy. Modern research has questioned whether or not it could still be a human carcinogen. It can cause headaches, vomiting, and nausea. (ATSDR, 2013)

In human beings it causes irritated stomach, anemia, discoloration of teeth; it can, also, cause kidney disease and cancer. (ATSDR, 2013)

Elimination

Again, mercury, like many heavy metals, can be difficult to remove from the body, but mercury is one of the few that can not only be removed through feces and urine, bit, also, sweat. (U. S. Department of Health and Human Services, 2013)

Through metabolism or excretion (Heinrich-Ramm, Jakubowski, Heinzow, Molin Christensen 4, Olsen & Hertel, 2000).

Through metabolism and/or excretion (Heinrich-Ramm, Jakubowski, Heinzow, Molin Christensen 4, Olsen & Hertel, 2000).

Many pesticides do not leave the body but reside in the bones where they are stored. Therefore this is a long term problem as reaction may not be immediate in any way.

Like other heavy metals it can avoid elimination and store in the body. It is. like mercury, can be excreted from the body through sweat, as well as, through feces and urine. (U. S. Department of Health and Human Services, 2013)

References

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