



County Conservation News

February 2011

Issue 6

In This Issue

- Toxic Knowledge
- Reducing Toxic Exposure
- Caught Green Handed
- Calling all Green Employees

Fun Links

- Agency for Toxic Substances & Disease Registry [Toxic Substance Portal](#)
- Toxic Substances in [Household Products](#)
- EPA [Toxic Substance Puzzlers](#)

Contact Us

GreenTeam@co.lewis-clark.mt.us

Toxic Knowledge

"Toxic substances, or toxicants, are substances that can cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological or reproductive malfunctions, or physical deformities in any organism or its offspring. The quantities and length of exposure necessary to cause these effects can vary widely."¹ The Agency for Toxic Substances and Disease Registry identifies 201 toxic substances.

Some toxicants are acute (effects are evident after single exposure), and some are chronic (effects become present after long-term exposure). The effects of toxicants can also be acute or chronic. Many toxic substances are found in products we use everyday. Use the word box on the right to guess which toxic substance is described below. Answers are given at the bottom of page 2.

Toluene
Cadmium
Lead
Copper
Mercury
Asbestos
Nickel
Cobalt
Tungsten
Zinc

- A. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, its use in gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. Much of its production comes from human activities including burning fossil fuels, mining, and manufacturing. It affects the cardiovascular (heart and blood vessels), developmental (effects during periods when organs are developing), gastrointestinal (digestive), hematological (blood forming), musculoskeletal (muscles and skeleton), neurological (nervous system), ocular (eyes), renal (urinary system or kidneys), and reproductive (producing children) organs.
- B. It is produced from making gasoline and other fuels from crude oil and making coke from coal. It is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, rubber and in some printing and leather tanning processes. It affects the cardiovascular and neurological systems.
- C. Its minerals have separable long fibers that are strong and flexible enough to be spun and woven and are heat resistant. Because of these characteristics, it has been used for a wide range of manufactured goods, mostly in building materials (roofing shingles, ceiling and floor tiles, paper products, and cement products), friction products (automobile clutch, brake, and transmission parts), heat-resistant fabrics, packaging, gaskets, and coatings. It affects the respiratory system (from the nose to the lungs) and is a human carcinogen (sufficient evidence of a cause and effect relationship between exposure to the material and cancer in humans).

- D. Its metallic form is used to produce chlorine gas and caustic soda, and is also used in thermometers, dental fillings and batteries. Its salts are sometimes used in skin lightening creams and as antiseptic creams and ointments. It is used in compact fluorescent light bulbs and found at varying levels in fish. It affects developmental, gastrointestinal, neurological, ocular, and renal organs.
- E. It is a very abundant natural element. Its pure form is a hard, silvery-white metal. It can be combined with other metals to form alloys. These alloys are used to make coins, jewelry, and items such as valves and heat exchangers. It is used to make stainless steel. It is combined with other elements such as chlorine, sulfur, and oxygen to form compounds. The compounds are used for plating, coloring ceramics, making some batteries, and as substances known as catalysts that increase the rate of chemical reactions. It is found in all soil and is emitted from volcanoes. It affects the cardiovascular, dermal (skin), immunological (immune system), and respiratory organs. It is also a human carcinogen.
- F. It is a naturally occurring element found in rocks, soil, water, plants, and animals. It is used to produce alloys used in the manufacturing of aircraft engines, magnets, grinding and cutting tools, and artificial hip and knee joints. Its compounds are also used to color glass, ceramics and paints, and used as a drier for porcelain enamel and paints. Its radioactive form is used for commercial and medical purposes, such as sterilizing medical equipment and consumer products, radiation therapy for treating cancer patients, manufacturing plastics, and irradiating food. It is also used in medical and scientific research. It affects the cardiovascular, developmental, and hematological organs. It is reasonably anticipated to be a human carcinogen.²

Reducing Toxic Exposure

Risk assessment attempts to determine the quantitative or qualitative value associated with a recognized threat. When quantifying health risks associated with exposure to toxic substances, science generally looks at the amount of the substance present in an environmental medium (soil, water, air, etc.), the medium of exposure (inhalation, ingestion, dermal, and external radiation) to humans, the amount of exposure to humans, and the toxicity of the substance. These things are important to keep in mind when trying to reduce your exposure to toxic substances. Equally important is knowing when you are exposed to a toxic substance.



Here are some general tips for reducing the amount of toxic substances you are exposed to:

- Most dry-cleaning systems use a chemical called perchloroethylene (PERC), which gets released from dry cleaning and pollutes the air in your home. If your dry cleaner uses PERC, suggest to them that they use a different chemical or a different method. Most clothes labeled as "dry-clean only" can also be wet cleaned. If all else fails, consider finding a dry cleaner that does not use PERC.
- Use a wet mop to clean. Toxic substances like lead, pesticides, and flame retardants are present in house dust. Using a dry cloth to sweep or dust can spread them into the air rather than removing them from your home.

- Use non-toxic products to clean your home. Ammonia, a toxic substance, is found in many cleaning products.
- Eat organic and local food when possible to avoid ingestion of pesticides. Pesticides often contain toxic substances.
- Dispose of toxic substances properly. Do not throw compact fluorescent light bulbs into the trash. They will inevitably break and release toxic mercury. ACE Hardware, Lowe's, and Home Depot will accept your used compact fluorescent light bulbs.
- Become a smart consumer. Many everyday products are made with toxic substances. Know what you are buying and learn what substances are toxic.³

Caught Green Handed



On March 1, the Lewis and Clark County Green Team is beginning a year-long program called "Caught Green Handed." When a Green Team member catches another county employee doing something environmentally friendly, they will give them a card. Each quarter, the cards will be turned into the Green Team and counted. The employee who has the most cards will win a small prize. The first prize will be a Contigo travel mug, pictured to the right. Cards cannot be carried over from quarter to quarter.



Examples of green actions include two-sided printing, carpooling, using alternative transportation (walking, biking, etc.), unseasonable office (cold in the winter, warm in the summer), picking up litter, etc. The Green Team recognizes when employees go out of their way to do things that are good for the environment and would like to thank them for doing so.

Calling all Green Employees

Is environmental stewardship important to you? Do you care about conserving resources? Do you want to save the county money while protecting the environment? The Green Team is recruiting new members. They currently have nine members, but are looking to expand. They hold a meeting on the first Wednesday of the every month for approximately one hour to discuss new ideas and implementation of past ideas. Additional time may be required to implement ideas.

Some departments only allow one representative, so please ask your boss for their permission to join. If your department already has a representative, you can request to join the Green Team mailing list. Essentially, you will be updated more often about Green Team initiatives. You do not have to be on the Green Team to have your voice heard; any county employee can e-mail the Green Team at GreenTeam@co.lewis-clark.mt.us with suggestions or comments.

¹ Environmental Protection Agency. <http://www.epa.gov/glnpo/rptcong/1994/glossary.htm>

² Agency for Toxic Substances and Disease Registry. <http://www.atsdr.cdc.gov/substances/indexAZ.asp#A>

³ University of California, San Fransico. www.prhe.ucsf.edu/prhe/pdfs/ToxicMatters.pdf