

Health Care Facilities

Products Containing Persistent, Bioaccumulative Toxic Chemicals (PBTs) and Alternatives

INFORM, a nonprofit environmental research organization founded in 1974, is working directly with government agencies, health care facilities, and schools to minimize the purchase of products that contain mercury, lead, dioxins, and other persistent, bioaccumulative toxic chemicals (PBTs). Many products used by health care facilities contain PBTs, or can generate or release PBTs into the environment when they are manufactured, used, discarded, incinerated, or recycled. Fortunately, environmentally preferable alternatives are often available (see table below).

Product	PBT(s)	PBT-free Alternative
Batteries	Antimony, Cadmium, Lead, Mercury, Nickel	PBT-free batteries and other power sources (such as fuel cells) are available for some equipment. Set up a battery recycling program in your facility. For more information about recycling of rechargeable batteries, see http://www.rbrc.org .
Blood-pressure equipment	Mercury	Mercury-free aneroid and electronic blood-pressure units (sphygmomanometers) are accurate, available, and widely used.
Diesel fuel used to power generators, vehicles (non-emergency) and other equipment	Antimony, Arsenic, Beryllium, Cadmium, Cyanide, Dibutyl phthalate, Di(2-ethylhexyl) phthalate (DEHP), Dioxins, Lead, Mercury, Naphthalene, Nickel, Phenol, Polychlorinated dibenzofurans (PCDFs), Polycyclic aromatic hydrocarbons (PAHs), Selenium	Diesel exhaust contains all of the PBTs listed plus other cancer-causing substances. Institutions that buy or lease shuttle buses and other vehicles should specify that they run on compressed natural gas (CNG) whenever feasible. For more information on the advantages of CNG, see INFORM's <i>Bus Futures</i> report (2000). For existing diesel-powered vehicles and equipment, consider adding biodiesel fuel. Some generators and other equipment may be able to be powered with hydrogen fuel cells or other energy sources.
Fever and laboratory thermometers	Mercury	Electronic, gallium-tin, and other types of thermometers are available for most medical and laboratory uses. Avoid replacing mercury thermometers with instruments that contain mercury batteries or have PVC (vinyl) casing.
Gastrointestinal and feeding tubes	Mercury	Tubes weighted with tungsten or water are used in many hospitals today.

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Product	PBT(s)	PBT-free Alternative
Laboratory chemicals	Mercury	Many laboratory reagents use mercury-based preservatives for colorimetric assays and tissue fixing. Mercury-free alternatives are available for almost all of these applications. Mercury can also be a contaminant in many reagents. Massachusetts has created a database listing the mercury content of chemicals used in hospitals (see http://www.masco.org/mercury).
Vinyl IV and feeding bags	Di(2-ethylhexyl) phthalate (DEHP), Dioxins	When incinerated, vinyl (PVC plastic) may create dioxins that are released into the air. Vinyl also typically contains DEHP or other phthalate plasticizers, which can leach into bag contents. Polyolefin plastic or other alternatives to PVC are available for many medical applications.

This information was collected from Material Safety Data Sheets (MSDSs) and from documents and databases developed by health and environmental regulatory agencies, independent analytical laboratories, and various industry and environmental groups. Information on safer substitutes to these products can be found at <http://www.sustainablehospitals.org>. Purchasers should review product MSDSs and ask vendors to supply less-toxic alternatives.

Where can purchasers go for more information about INFORM's Purchasing for Pollution Prevention Project? Please contact INFORM staff:

Cameron S. Lory
Senior Associate
Chemical Hazards Prevention Program Coordinator
212-361-2400, ext. 232
lory@informinc.org

INFORM is a national nonprofit organization that identifies practical ways of living and doing business that are environmentally sustainable.

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