

# **The 2010 ChildSafe Guidelines**

## ***“Green” Cleaning Products for Schools***

### **Introduction**

Environmentally-mediated illness is a growing, yet preventable public health threat. Emerging science links many of these illnesses with exposures to chemical toxins, which has precipitated an increased interest in “green” cleaning products for use in schools and other facilities where children spend time.

### **Why Children Are Uniquely Vulnerable**

Children are at greater risk from toxic exposures because of their immature and rapidly developing physiology and their natural behavioral patterns. They live in their environments in ways adults do not; they play on floors, sprawl on desk and table surfaces, and engage in hand-to-mouth behavior. Pound for pound, children take in more contaminants than adults, increasing their risk.

Researchers have found that early exposures to environmental toxins appear more likely to produce chronic disease than similar exposures encountered later in life. (Studies also show that a developing fetus is particularly at risk from maternal exposures to certain chemicals – a special concern for pregnant women working in schools.)

Furthermore, most schools and child care facilities are cleaned every day, leaving behind fresh residues of cleaning chemicals on surfaces with which children come into direct contact. Some chemicals found in cleaning products become airborne when used and can trigger asthma attacks in affected individuals and possibly contribute to the onset of the disease.

### **How Exposure Impacts Health**

Routes of children’s exposure to cleaning chemicals include inhalation, skin absorption and accidental ingestion. Health impacts from cleaning products used in schools can result from either acute or chronic exposures. Acute exposures (significant one-time exposures) may burn the eyes or skin, cause blindness, poisoning, headaches and respiratory and gastrointestinal ailments. Chronic exposures (frequent low-dose exposures over a longer period of time) can lead to asthma, allergies, certain types of cancer, learning and behavioral disorders, endocrine disruption, chemical sensitivity and kidney or liver damage.

Moreover, a significant percentage of a student and school staff population may have a specific or general chemical hypersensitivity; that is, they react adversely

to extremely low levels of one or more types of chemical exposures. For example, many cleaning products contain fragrances which are common triggers for asthma attacks. Sensitive populations include those with allergies or asthma, individuals with upper respiratory infections (colds, sore throats, etc.) and those on medication for chronic illnesses.

## **State Legislation**

Over the past few years, there has been a significant increase in efforts to protect children's health in schools, including reducing or eliminating the use of cleaning products containing harmful ingredients. Several states have passed, or are considering, green cleaning legislation for schools.

Most proposed green cleaning statutes rely on third-party certification to determine which products should be permitted in schools. Recent changes to third-party standards (i.e., Green Seal® GS-37 revised August, 2008) have made them more protective of children's health than their earlier versions, yet they continue to permit products which may be harmful in concentrate form, as well as ingredients (e.g. non-functional fragrances which may also contain phthalates) which we believe can be harmful to children. Therefore, we support green cleaning legislation initiatives that rely on third-party certification only as a minimum standard, and with the caveat that only products without added fragrances be selected for use in schools.

## **Conclusion**

A growing body of evidence suggests that children are more vulnerable to toxins in their environments than previously known, and that the effects of exposure may not be manifested for years. While scientists continue to probe for more answers to these complex issues, parents and school administrators should be aware that their decisions in this area may have profound impacts on the health and well-being of students, long after those students have left the classroom.

For those interested in the highest levels of protection, we present the 2010 ChildSafe Guidelines.

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## Type I Products – General Purpose Cleaners

This category includes products used daily for general cleaning, including all-purpose surface and floor cleaners, cleaning pastes, window and mirror cleaners and dust mop treatments. These products must pose no or minimal health risks to children from inhalation, skin absorption, accidental ingestion or eye and skin contact. ChildSafe products must meet or exceed the following specifications:

- Products must be certified by Green Seal® (using the new 2008 revised GS-37 standard) or EcoLogo®, or meet the specifications and criteria set forth by those organizations as verified by an independent third party certifying entity.
- For products not certified by Green Seal® or EcoLogo®, all ingredients must be disclosed to purchaser.
- Product must be bio-based and biodegradable or based on naturally occurring ingredients.
- Product in concentrate form must have a health rating of 0 or 1 as designated by the Hazardous Materials Information System (HMIS) and/or National Fire Protection Association (NFPA).
- Product in concentrate form must have a VOC content of less than 1%
- Product in concentrate form must be non-reactive, non-caustic and non-corrosive.
- Product in concentrate form must not contain known or suspected endocrine modifiers, phthalates or ingredients that are toxic to the liver or kidneys in environmentally relevant doses
- Product must not contain added fragrances (non-functional fragrances)
- Product must not contain non-food-grade dyes
- Product must not contain substances which contribute to greenhouse gases, smog or ozone depletion

*Note: We encourage the use of products with ingredients that do not add to the development of antibiotic-resistant bacteria.*

## Type II Products – Sanitizers & Disinfectants

This category includes products used to sanitize and disinfect in bathrooms, gymnasias, nurses' offices, kitchens, etc. (*Note: Disinfectants are registered pesticides and should never be used for sanitizing or general cleaning purposes because of their significant toxicity and corresponding high risk to humans and the environment.*) ChildSafe products must meet the following specifications:

- Products must not contain chlorine-based ingredients (e.g., sodium hypochlorite)
- Products must not contain quaternary ammonium compounds ("quats") (e.g., ammonium chloride)
- Products must not contain phenolics (e.g., o-phenyl-phenol)
- Product labels must include instructions that the product should be used only after surfaces have been pre-cleaned
- Products must not be corrosive to skin or eyes

### ***Notes about Sanitizers and Disinfectants:***

**Sanitizers** should be used in areas where there is a desire to reduce microbes to a safe level and where the use of a stronger disinfectant product is not indicated.

**Disinfectants** should be used only for body fluid spills, in areas where there is a high potential for direct contact with body fluids, or when a public health concern or regulation of the Department of Health or Centers for Disease Control requires their use. Sanitizers or disinfectants have no value if they are applied to soiled surfaces. In fact, this practice promotes the development of even more antibiotic resistant pathogens (so-called “Super Bugs”). Disinfectant products should be allowed to remain on the cleaned surface for the required dwell time (usually about 10 minutes).

The development of safer products for sanitizing and disinfecting is a priority for many manufacturers, and products using new technologies (e.g., electrolytically engaged silver ions, and stabilized or accelerated hydrogen peroxide) have recently emerged, along with products which utilize natural oils and extracts, including tea tree, thyme and eucalyptus oils and grapefruit seed extract. The use of Adenosine TriPhosphate [ATP] monitors to measure cleanliness is a promising new technology, and a new generation of ionizers and steam cleaners are being developed that can sanitize and disinfect without the use of any toxic chemicals. As with Type I products, we encourage the use of products with ingredients that do not add to the development of antibiotic-resistant bacteria.

### **Type III Products – Floor Care**

This category includes products used for floor stripping and finishing, heavy duty carpet cleaning, etc., and should only be used when facilities are vacant, preferably during summer vacation or over extended holiday breaks when buildings can be properly ventilated before children and staff return to school. ChildSafe products must meet the following specifications:

- Product does not contain styrene
- Product does not contain heavy metals, including but not limited to zinc, chromium or nickel
- Product does not contain petroleum solvents or 2-butoxyethanol

### ***Notes About Floor Cleaners:***

Floor stripping products typically contain highly toxic, caustic and corrosive chemicals. Their high VOC and pH levels require them to be used with extreme caution, even when following the guidelines above.

Type I products in combination with hot-water extraction usually perform well for basic floor cleaning.

There are many new “green” flooring alternatives that should be considered for new construction which eliminate the need for toxic cleaning and maintenance products.

The use of carpeting in schools is not recommended because of the typically high VOC content of chemicals found in carpet, padding and adhesives. Carpet fibers retain many types of allergens and chemicals, increasing the inappropriateness of this floor covering option.

### Definitions

**“Bio-based”** means a commercial or industrial product in which more than 50% of the ingredients (other than water) are biological or renewable domestic agricultural (plant, animal or marine) or forestry materials.

**“Biodegradable”** means a product in which a minimum of 70% of the ingredients break down into organic elements such as carbon and return to the environment as a result of the action of microorganisms (e.g., bacteria).

**“Disinfectant”** is any product designed to kill microbes.

**“Carcinogen”** is a cancer-causing agent.

**“Mutagen”** is any agent, such as ultraviolet light, radioactive elements or chemical ingredients which can induce or increase the frequency of mutation in a living organism.

**“Sanitizer”** is any product designed to reduce the number of microbes.

**“Teratogen”** is any agent such as a virus, a drug or radiation that adversely affects and causes malformations of a developing fetus or embryo.

**“Volatile Organic Compounds (VOCs)”** are organic chemicals that have a high vapor pressure and easily form vapors at normal temperature and pressure. Aerosol spray can propellants, petroleum distillates and solvents are examples of VOCs. VOCs are a significant source of indoor air pollution. “Low” VOC levels must meet or be less volatile than the California Code of Regulations maximum allowable VOC levels for appropriate cleaning product categories.

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*The ChildSafe Guidelines are based on recommendations originally developed by the Environmental Protection Agency (EPA) in its “Final Guidance on Environmentally Preferable Purchasing” and the U.S. Department of the Interior’s “Environmentally Preferable Green Cleaning Chemical Model.”*

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