



## **The ChildSafe Guidelines** *for Cleaning Products in 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.

## **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.

# The ChildSafe Guidelines for Green Cleaning Products

## Type I Products – General Purpose Cleaners

General Purpose Cleaners 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:

- Product must be bio-based and biodegradable or based on naturally occurring ingredients.
- Product in concentrate form must have a health rating of 0 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 .5%.
- Product in concentrate form must not contain known or suspected endocrine disruptors or ingredients that are toxic to the liver or kidneys.
- Product must not contain added fragrances (non-functional fragrances).
- Product must not be packaged as aerosol spray using propellant.
- Products must be certified by Green Seal® (using the GS-37 Standard for Cleaning Products for Industrial and Institutional Use, Edition 7.2) or by EcoLogo® under the EcoLogo certification program of Underwriters Laboratories, 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.

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

## Type II Products – Sanitizers & Disinfectants

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:

- Product must be bio-based and biodegradable or based on naturally occurring ingredients.
- Product must not contain chlorine-based ingredients (e.g., sodium hypochlorite).
- Product must not contain quaternary ammonium compounds (“quats”) (e.g., ammonium chloride).
- Product must not contain phenolics.
- Product must not be packaged as aerosol spray using propellant.

- Product labels must include instructions that the product should be used only after surfaces have been pre-cleaned.
- Product must be certified by GreenSeal® using the GS-53 standard or meet the specifications and criteria contained in that standard as verified by an independent third party certifying entity.

*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**

Floor care products 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 or polystyrene.
- Product does not contain urethane or polyurethane.
- Product does not contain petroleum solvents or 2-butoxyethanol.
- Product does not contain ammonia.
- Products must be certified by GreenSeal® using the GS-37 or GS-40 standard (as applicable) or meet the specifications and criteria contained in that standard as verified by an independent third party certifying entity.

#### ***Notes About Floor Products:***

Bio-based and biodegradable products are preferred and should be used once petroleum-based finishes have been removed.

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.

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.

#### ***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. Promising new technologies for sanitizing include ionized water.

**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).

### **Notes About Hand Soaps**

Pediatricians agree that the use of regular soap and water is just as effective as an antibacterial product in preventing the spread of disease. Regular use of antibacterial hand soaps containing chemicals such as triclosan contributes to the growing problem of antibiotic-resistant strains of bacteria. Alcohol-based sanitizing gels leave a toxic residue on hands, which is of special concern for young children. When there is concern about an illness spreading in a classroom or if parents are anxious, the use of a bio-based (e.g., thyme oil) antibacterial soap can be used.

### **Notes About Air Fresheners**

Synthetic fragrances and other petroleum-based components of air fresheners contain volatile organic compounds (VOCs) and other hazardous substances that are released into indoor air. Phthalates, known endocrine disruptors, are also used in artificial fragrance formulations to make scents last longer. In a school environment with many children all in different development stages, and with a significant percentage of them suffering from asthma and allergies, synthetic air fresheners should not be used. Instead of air fresheners, identify the source of the odor, clean it up and use ventilation.

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### **Definitions**

**“Bio-based”** means a commercial or industrial product in which more than 60% of the ingredients (other than water) are biological or renewable domestic agricultural (plant, animal or marine) or forestry materials as defined by the U. S. Department of Agriculture (USDA) Bio-Preferred program.

**“Biodegradable”** means a product in which a minimum of 70% of the ingredients are capable of undergoing biological anaerobic or aerobic degradation leading to the production of CO<sub>2</sub>, H<sub>2</sub>O, methane, biomass, and mineral salts, depending on the environmental conditions of the process.

**“Disinfectant”** is any product designed to kill microbes and is required to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

**“Carcinogen”** is an agent that has been determined to be possibly, probably or known to be carcinogenic in humans by the International Agency for Research on Cancer

(IARC), the National Toxicology Program (NTP) or the Environmental Protection Agency (EPA).

**“Floor Care Product”** includes any product designed for floor stripping, polishing, waxing or heavy-duty cleaning but **does not** include regular cleaning or dust mop treatments.

**“General Purpose Cleaner”** is a product designed for routine cleaning of classrooms, hallways, offices, cafeterias, lobbies, auditoriums, libraries and other areas inside school facilities. The category includes all-purpose surface and floor cleaners, cleaning pastes, window and mirror cleaners, and dust mop treatments, but **does not** include air fresheners.

**“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 as determined by the Globally Harmonized System for Classification and Labeling of Chemicals (GHS).

**“Sanitizer”** is any product designed to reduce the number of microbes and is required to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

**“Teratogen”** is any agent such as a virus, a drug or radiation that adversely affects and causes malformations of a developing fetus or embryo as determined by an ASTM E1439 FETAX analysis of equivalent.

**“Volatile Organic Compounds (VOCs)”** are organic chemicals that have a high vapor pressure and easily form vapors at normal temperature and pressure, such as aerosol spray propellants, petroleum distillates and solvents as defined by the California Code of Regulations (CCR).

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*The ChildSafe Guidelines are based on recommendations originally developed by the U. S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA) and the U.S. Department of the Interior. A more recent certification standard for bio-based cleaning and maintenance products has been developed by the U.S. Department of Agriculture (USDA) called the BioPreferred Voluntary Labeling Program. We look forward to being able to adopt this new standard as more products are formulated to meet the requirements.*

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