Learning How to Clean With Safer Chemicals

RPN webinar
May 3, 2017

www.ResponsiblePurchasing.org
RPN is a nonprofit network that develops cutting-edge tools to help government agencies, public institutions and businesses purchase sustainable products and services.
RPN Resources

- >20 Responsible Purchasing Guides
- Webinars
- RPN newsletter
- Model specifications
- Technical assistance
- Sample purchasing policies
- Calculators and other tools
Audio and Recordings

- Participants are muted. Communicate technical questions (about sound, etc.) through the CHAT BOX in your GoToWebinar application.

- This presentation will be recorded and posted on RPN’s website.
Questions?

Submit questions for presenters at any time by typing them into the GoToWebinar QUESTION BOX.

We will compile and answer them...

- After each presenter and
- At the end of the webinar
Polling Question #1

What is your biggest concern about green cleaning products?

VOTE NOW
Presenters

• Alicia Culver
  Executive Director
  Responsible Purchasing Network

• Joanna Pi-Sunyer
  Green Schools Coordinator
  Baltimore City Public Schools
Why Buy Green Cleaners?

• Protect workers
• Improve indoor air quality
• Save money
  – Eliminate aerosols and other RTU cleaning products
  – Reduce liability costs
• Earn green building credits
Environmental and Health Concerns

• Acute Exposure to Toxic Chemicals
  – Chemical burns/serious injury to the eyes, skin or lungs
  – Headaches and central nervous system (CNS) effects

• Chronic Exposure to Toxic Chemicals
  – Asthma, cancer, reproductive and developmental toxicity, endocrine disruption
  – Toxicity to fish and other aquatic species

• Packaging Waste and Transportation Impacts
Learning to Clean With Safer Chemicals

Cleaning Chemicals Linked to Asthma

The Cleaning Products At Your Office Could Be Triggering Asthma Symptoms

By Roxanne Nelson

(Reuters Health) - Fumes from cleaning products used at work can make existing asthma worse, according to a new study of professional cleaning service employees.

Products such as bleach, glass cleaner, detergents and air fresheners exacerbated asthma-related symptoms for the women, and their reduced lung function lasted until the morning after exposure, in some cases getting worse with time.
How to Find Asthmagens

www.ResponsiblePurchasing.org
Green Cleaners

- General-/Multi-Purpose Cleaners
- (Neutral) Floor Cleaners
- Restroom Cleaners (Non-Disinfecting)
- Carpet Cleaners
- Cleaner-Degreasers
- Glass Cleaners
- Peroxide-based Cleaners

- Floor Polish and Strippers
- Specialty Cleaners (Deodorizers, Drain Maintainer, Furniture/Metal Polish, Graffiti/Stain Remover, Laundry/Dish Detergent, Sprays/Wipes)
Specifications for Green Cleaners

- **Third Party-Certified** for Low Toxicity and High Performance
  - Protects works, building occupants and the environment

- **Concentrated**
  - Lowers costs, reduces packaging and transportation impacts

- **Closed-loop Packaging**
  - Prevents exposure and ensures accurate dilution
Avoid Greenwashing
Multi-Attribute Certifications for Green Cleaners

Green Seal

UL EcoLogo

Safer Choice

Cradle to Cradle (Gold)
Green Seal Standard

- Prohibits carcinogens, mutagens & reproductive toxins
- Prohibits asthmagens (respiratory sensitizers/general)
- VOCs must meet California’s CARB limits
- Products may not be corrosive or sensitizing to skin or cause serious eye damage
- Prohibited ingredients: ozone-depleting compounds, heavy metals, 2-butoxyethanol, alkylphenol ethoxylates (APEs) and phthalates
- Products must meet ASTM performance standards
How to Find Green Seal Certified Products

www.greenseal.org
How to Find Green Seal Certified Products

3M
- 3M™ Neutral Cleaner LO Cleaner Concentrate 33H, 3M™ Twist ‘n Fill™ Dispensing System
- 3M™ Peroxide Cleaner Concentrate, 34H, 3M™ Twist ‘n Fill™ Dispensing System (CDCC-As-Used-Skin/Eye)

BETCO Corporation
- Green Earth Daily Floor Cleaner
- Green Earth Glass Cleaner
- Green Earth Peroxide Cleaner

Sealed Air Inc.
- Stride Floral Neutral Cleaner Concentrate
- Stride Floral SC Neutral Cleaner
- Stride Fragrance Free SC Neutral Cleaner

Ecolab
- FaciliPro Concentrated Neutral Floor Cleaner
- FaciliPro Glass Cleaner
- FaciliPro Neutral Bathroom Cleaner GS
- FaciliPro Neutral Floor Cleaner
- FaciliPro Peroxide Glass & Surface Cleaner
- FaciliPro Peroxide Multi-Surface Cleaner

www.ResponsiblePurchasing.org
UL EcoLogo

ECOLOGO Product Certification

ECOLOGO Certified products, services and packaging are certified for reduced environmental impact. ECOLOGO Certifications are voluntary, multi-attribute, lifecycle based environmental certifications that indicate a product has undergone rigorous scientific testing, exhaustive auditing, or both, to prove its compliance with stringent, third-party, environmental performance standards.
Learning to Clean With Safer Chemicals

How to Find UL EcoLogo Certified Products

The Source for Product Sustainability Information

Detailed Product Information
Sustainable Building Credit Information
Master Format Product Coding

www.ResponsiblePurchasing.org
Cradle to Cradle (Gold)

www.c2ccertified.org/products/registry
Learning to Clean With Safer Chemicals

US EPA’s Safer Choice
formerly Design for Environment (DfE)

Finding safer products just got easier!
Products with the Safer Choice label will be available in stores later this spring and summer. Learn more.

Introducing our new Safer Choice label!

Safer Choice helps consumers, businesses, and purchasers find products that perform well and are safer for human health and the environment.

The Safer Choice Label
- Learn About Safer Choice
- Resources for Manufacturers
- Safer Choice Standard

Find Safer Products
- Browse the Full Product Listing
- Find Safer Choices to Use in Your Community

Find Safer Choice Products
- e.g. company or product
- Search

www.ResponsiblePurchasing.org
Single-Attributes Certifications for Green Cleaners

UL GREENGUARD

USDA Biobased
### 11 Active Ingredients Evaluated

<table>
<thead>
<tr>
<th>ACTIVE INGREDIENT</th>
<th>CANCER</th>
<th>REPRO TOX</th>
<th>ASTHMA</th>
<th>SKIN SENS</th>
<th>AQUATIC TOX</th>
<th>PERSIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprylic Acid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Med acute</td>
<td>Low</td>
</tr>
<tr>
<td>Citric Acid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>Hydrogen Peroxide</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>High acute</td>
<td>Low</td>
</tr>
<tr>
<td>Lactic Acid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>Ortho-Phenylphenol</td>
<td>Known</td>
<td>Suspected</td>
<td>No</td>
<td>No</td>
<td>Very high acute</td>
<td>Low</td>
</tr>
<tr>
<td>Peroxyacetic Acid</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Very high acute</td>
<td>Low</td>
</tr>
<tr>
<td>Pine Oil</td>
<td>No²</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>Quats</td>
<td>No</td>
<td>Suspected</td>
<td>Yes</td>
<td>One compound</td>
<td>High acute, med chronic</td>
<td>Very High</td>
</tr>
<tr>
<td>Silver</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>High acute</td>
<td>Very High</td>
</tr>
<tr>
<td>Sodium Hypochlorite (Chlorine Bleach)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Very high acute</td>
<td>Low</td>
</tr>
<tr>
<td>Thymol</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>High acute</td>
<td>Low</td>
</tr>
</tbody>
</table>
Specifications for Safer Disinfectants and Sanitizers

• Require EPA Registration
  – to ensure efficacy against target pathogens

• Prohibit carcinogens
  – ortho-phenyl phenol; pine oil (can create formaldehyde)

• Avoid asthmagens (per AOEC)
  – e.g., chlorine bleach, hydrochloric acid (HCl), and quaternary ammonium chlorides (Quats)

• Specify products with approved active ingredients
  – Hydrogen peroxide, citric acid, lactic acid
# US EPA DfE Antimicrobials Pilot Program

**Design for the Environment Antimicrobial Pesticide Pilot Project: Moving Toward the Green End of the Pesticide Spectrum**

We have extended the Design for the Environment Antimicrobial Pesticide Pilot until May 3, 2017.

On this page:
- [How to participate in the pesticide DfE program](#)
- What the DfE logo means on antimicrobial product labels
- Active ingredients approved for use in products for DfE pesticide pilot
- Authorized use of the DfE logo and consequences of unauthorized use
- List of authorized DfE products
- EPA asks for public input on how this pilot project can be improved
- Additional information

## Quick Resources

- Design for the Environment Pesticide Pilot
- Design for the Environment Biopesticide Pilot Project
- Conventional Reduced Risk Pesticide Program
- Label Statements Pilot

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Year Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>2009</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td>2009</td>
</tr>
<tr>
<td>L-lactic acid</td>
<td>2009</td>
</tr>
<tr>
<td>Ethanol</td>
<td>2012</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>2012</td>
</tr>
<tr>
<td>Peroxyacetic acid</td>
<td>2015</td>
</tr>
<tr>
<td>Sodium Bisulfate</td>
<td>2015</td>
</tr>
</tbody>
</table>
Safer Disinfectants and Sanitizers

- **Alpha HP Disinfecting Cleaner**
  - 1:16 concentrate with H2O2
- **Oxivir Five 16**
  - 1:16 concentrate with H2O2
- **Oxivir TB**
  - RTU Spray and Wipes with H2O2
- **Clorox Healthcare Hydrogen Peroxide Disinfecting Cleaner**
  - RTU Spray and Wipes with H2O2
Safer Disinfectants and Sanitizers

2013 Update: Bleach-free Disinfection and Sanitizing for Child Care

City and County of San Francisco

Asthma Task Force

http://sfgov.org/asthma/child-care-settings
## Material Safety Data Sheet

**Product:** CLOROX® REGULAR-BLEACH<sub>®</sub>  
**Description:** CLEAR, LIGHT YELLOW LIQUID WITH A CHARACTERISTIC BLEACH ODOR

### Other Designation

| EPA Reg. No. | 5813-100 |

### Distributor

| The Clorox Sales Company | 1221 Broadway  
| Oakland, CA 94612 |

### Emergency Telephone Nos.

For Medical Emergencies, call 1-800-446-1014.
For Transportation Emergencies, call 1-800-424-9300 (Chemtrec).

### II Health Hazard Data

DANGER: CORROSIVE. HARMFUL IF SWALLOWED. May cause severe irritation or damage to eyes, skin, and mucous membranes. Wear rubber gloves. Vapors may irritate. Keep out of reach of children.

Some clinical reports suggest a low potential for sensitization upon exaggerated exposure to sodium hypochlorite if skin damage (e.g., irritation) occurs during exposure. Under normal consumer use conditions the likelihood of any adverse health effects are low.

Medical conditions that may be aggravated by exposure to high concentrations of vapor or mist: heart conditions or chronic respiratory problems such as asthma, emphysema, chronic bronchitis, or obstructive lung disease.

**FIRST AID:**

### III Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Concentration</th>
<th>Worker Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite</td>
<td>5 - 12%</td>
<td>Not established.</td>
</tr>
</tbody>
</table>
| Sodium hydroxide | 0.1 - 1% | 2 mg/m³ - TLV-C<sup>a</sup>  
| | | 2 mg/m³ - PEL<sup>b</sup> |

*TLV-C = ACGIH Threshold Limit Value - Ceiling.  
*TLV-TWA = OSHA Permissible Exposure Limit - Time Weighted Average.
Key Elements of a Successful Green Cleaning Program

- Establish a committee
- Evaluate current products
- Identify/pilot test safer products
- Train staff with new products
- Track your success
- Phase in more green products
- Reward participating staff
- Adopt a policy
Model Green Cleaners Contract
For Other Jurisdictions to Use

Contract User Guide

How to Use FAC85: Environmentally Preferable Cleaning Products, Programs, Equipment and Supplies Statewide Contract

Contract #: FAC85  MMARS #: FAC85
Contract Duration: 03/15/2015 – 03/15/2018
Options to Renew: Four (4) one year extensions

Available to public entities in MA, NY, CT, VT, NH & RI

Julia Wolfe
Director of Environmental Purchasing
Commonwealth of Massachusetts
(617) 502-8836
julie.wolfe@state.ma.us

www.ResponsiblePurchasing.org

www.mass.gov/anf/docs/osd/uguide/fac85.pdf
Model Green Cleaners Contract
For Other Jurisdictions to Use

Pam Johnson
State Procurement Analyst
State of Oregon
(503) 378-4731
pam.johnson@state.or.us

Available to public entities in Oregon and Washington

News Release
For Immediate Release
Media Contacts:
Matt Shelby, State of Oregon, Department of Administrative Services, 503-378-3118
Jim Erskine, State of Washington, Department of Enterprise Services, 360-407-9212

Two-state effort reduces public exposure to toxic chemicals

Salem, Ore., July 30: Government offices and schools across the Northwest will be healthier places to work and visit thanks to a new “green” janitorial supplies contract developed by Oregon’s Department of Administrative Services in partnership with Washington’s Department of Enterprise Services.

The contract — developed with support from the Oregon Department of Environmental Quality, Washington Department of Ecology and Responsible Purchasing Network — will supply public agencies with people- and planet-friendly janitorial supplies that reduce the use of toxic chemicals without increasing costs.

www.ResponsiblePurchasing.org
National Healthy Schools Network Resources

Green Cleaning / Healthy Products

www.cleaningforhealthyschools.org

www.ResponsiblePurchasing.org
Questions?

Alicia Culver

Executive Director

Responsible Purchasing Network

alicia@responsiblepurchasing.org

510-547-5475

www.ResponsiblePurchasing.org
Polling Question #2

What is the status of your organization’s green cleaning program?

VOTE NOW
Polling Question #3

What is your greatest green cleaning challenge?

VOTE NOW
Learning to Clean With Safer Chemicals

Responsible Purchasing Network (RPN)
Green Cleaning Webinar
a National Healthy Schools Event

May 3, 2017
Baltimore City Public Schools

Notes:
- Decentralized model
- Multiple charter schools
- Green Schools Coordinator

- 82,000 students
- 181 school programs
- 48% cleaned by staff
- 52% cleaned by contractors
Why Green Cleaning?

Maryland Green Cleaning for Schools Law

Requires all schools to:

• Adopt a Green Cleaning Policy
• Use third party-certified green cleaning products
• Train staff

Kudos to...

Maryland Environmental Health Network

U.S. Environmental Protection Agency Safer Product Standards

epa.gov/saferchoice
Our green cleaning goals

- Comply with the state law
- Support our sustainability goals
- Provide 2-3 options to schools
- Accommodate different cleaners and school types
- Reduce the number of custodial distributors
Cleaning for Health

• Emphasis on protecting the health of custodians, students, and the environment.
• Move away from negative past experiences
• Develop general information materials for online toolkit

http://www.baltimorecityschools.org/Page/28443
Key Partners

Green Schools Coordinator
Funded by Baltimore Community Foundation

RPN
Funded by Jacob and Hilda Blaustein Foundation and Town Creek Foundation

Facilities
Area Facilities Managers

Principals & Custodians
Hosted pilot testing

Manufacturers
Samples, dispensers, technical information

Distributors
Technical information, pricing
Researched other programs
Meanwhile....

- Worked on a Sustainability Policy for City Schools

- Developed language
  - Researched other school districts
  - Worked with multiple departments – legal, operations, academics, finance
  - Input from Green Schools Network – staff and partner advocates

- Passed in June 2016
  - Sustainability Policy
  - Sustainability Administrative Regulation
  - Energy, Water, and Resource Conservation Administrative Regulation
  - Green Cleaning Administrative Regulation
Switched to a DISTRICT-WIDE program

- Better pricing
- Limited principal knowledge
- Easier custodial training
- Easier monitoring
Researched daily cleaning chemicals with RPN

Developed environmental and health criteria for green cleaners:

- Certified by Green Seal or UL EcoLogo
- Packaged in closed-loop containers
- Available with multi-unit dilution system
- Fewest number of products possible
  - General purpose cleaner
  - Floor cleaner
  - Disinfectant
Researched safer disinfectants with RPN

- **Approved active ingredients:**
  - H₂O₂ – Hydrogen peroxide
  - Citric acid

- **Avoided active ingredients (asthmagens and carcinogens):**
  - Chlorine bleach
  - Quaternary ammonium chloride compounds
  - Ortho-phenylphenol

- **Pending active ingredients**
  - Ethyl alcohol (under review)

- Reviewed US EPA-approved product labels to assess efficacy against specific pathogens (bacteria, viruses, fungi)

- Evaluated health risks on label and SDS

- Evaluated cost & concentration levels
Preparing for the pilot

- Selected three schools plus our headquarters
- Chose Diversey and 3M
- Tested each line for 3 weeks
Pilot details, part 1

Green Schools Coordinator (GSC) met with schools

Manufacturers installed dispensers

Manufacturers trained custodians on-site

GSC administered questionnaire to custodians and principals
Custodian & principal questionnaire

<table>
<thead>
<tr>
<th><strong>Baltimore City Public Schools - Cleaning For Health - Evaluation Form</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date</strong></td>
</tr>
<tr>
<td><strong>Facility</strong></td>
</tr>
<tr>
<td><strong>Product type</strong></td>
</tr>
<tr>
<td><strong>Manufacturer &amp; Rep</strong></td>
</tr>
<tr>
<td><strong>Distributor &amp; Rep</strong></td>
</tr>
<tr>
<td><strong>Where was this product tested? (e.g., restrooms, classrooms, hallways, kitchen, etc.)</strong></td>
</tr>
<tr>
<td><strong>What surfaces was this product tested on? (floors, walls, mirrors, toilets, etc.)</strong></td>
</tr>
<tr>
<td><strong>How was this product applied (e.g., conventional mop, microfiber mop, sponge, rag, etc.)</strong></td>
</tr>
<tr>
<td><strong>How would you rate the effectiveness of this product?</strong></td>
</tr>
<tr>
<td><strong>What do you like BEST about this product?</strong></td>
</tr>
<tr>
<td><strong>What do you like LEAST about this product?</strong></td>
</tr>
<tr>
<td><strong>How would you rate the TRAINING for this product (1=poor, 3=average, 5=excellent)? Please provide COMMENTS.</strong></td>
</tr>
<tr>
<td><strong>Additional Comments</strong></td>
</tr>
</tbody>
</table>
Pilot details, part 2

1. Ranked products
2. Met with Health & Safety staff
3. Addressed special situations, e.g., gym mats
4. Negotiated price
5. Selected product line
Pilot, part 3

- Train custodians for more than 20 minutes
- Test products for more than three weeks
- Test products during a break to allow for deep cleaning
- Skeptics can be convinced, but you can’t satisfy everyone
What we chose

• J-Fill Quattro dispenser
• Stride HC Neutral cleaner – floors
• Alpha-HP Multi-surface disinfectant and cleaner – restrooms and disinfecting
• PerDiem – all purpose cleaner
• Oxivir Tb – for wrestling mats, weights, etc. at high schools only
Challenges & Solutions

Contractors clean half our buildings

Schools may have staff and contractors

Charter schools have autonomy

Multiple janitorial supply distributors

Communication & annual affidavit

Communication

Survey and annual certification

Reducing number of distributors
Rollout details, part 1

District leadership

Paying for each school's starter set of chemicals

Communication with school leadership

Communication with contractors
Communication with charter schools

Survey of each school for number of dispensers

Coordination of installation & training

Compliance and ongoing training
New questions

The City Health Department disinfects school nurses’ suites with bleach. What should they use instead?

Need disinfectants with higher efficacy against bloodborne pathogens, other viruses, and bacteria, and shorter dwell time (1-2 minutes max)

My school serves students with severe physical disabilities who mouth toys and furniture. What should I use?

Need disinfectants that may be put in the mouth

I am a teacher trying to keep my classroom clean. What should I use?

Need to provide options to clean, or to clean and disinfect, and options if school is cleaned by staff and/or contractors.

I am a cafeteria manager cleaning dishes, tables, and more. What should I use?

This research comes next!
Next steps

- Finish initial installation and training
- Monitor compliance
- Answer questions
- Add resources
- Ongoing training
- Kitchens and cafeterias
- Floor finish
- Hand soap & paper products
Board Of School Commissioners

Marnell Cooper, Chair
Tina Hike-Hubbard, Vice-Chair
Muriel Berkeley
Michelle Harris Bondima
Cheryl Casciani
Linda Chinnia
Andrew “Andy” Frank
Martha James-Hassan
Peter Kannam
Jonathan Townes, Student Commissioner
A.J. Bellido de Luna, Board Executive Officer

Senior Management Team

Dr. Sonja Brookins Santelises, Chief Executive Officer
Alison Perkins-Cohen, Chief of Staff
Sean L. Conley, Chief Academic Officer
Theresa Jones, Chief Achievement and Accountability Officer
Andre Cowling, Chief of Schools
Keith Scroggins, Chief Operations Officer
DeRay Mckesson, Interim Chief Human Capital Officer
Kenneth Thompson, Chief Technology Officer
Tammy L. Turner, Esq., Chief Legal Officer
John Walker, Interim Chief Financial Officer
BCPS Cleaning for Health Toolkit
http://www.baltimorecityschools.org/Page/28443

BCPS Sustainability Policy & Administrative Regulations
http://www.baltimorecityschools.org/Page/29999

Maryland Environmental Health Network’s
Green Cleaning in Maryland Schools webpage
Questions?

Joanna Pi-Sunyer
Green Schools Coordinator
Baltimore City Public Schools
443-642-4542
jpi-sunyer@bcps.k12.md.us
Polling Question #4

Would you like to work collaboratively to develop a model green cleaning policy, a purchasing contract, or training resources?

VOTE NOW