Environmentally Preferable Purchasing: Janitorial Products

Patrick Wooliever
Tetra Tech EM Inc.
(415) 222-8240
Take Home Message

- First Promote Worker Safety
- Use a defensible methodology to identify preferable products
- Prioritize and Implement EPP into contracting language; educate your GPOs and suppliers
Environmentally Preferable Purchasing
Why Cleaning Products?

Environment

Custodial Staff

Chemical Products

Hospital Occupants
“Green” Product Considerations

- Manufacturing resource use
- Energy consumption
- Disposal/reuse/recycling considerations
- Social impacts
- More...
Environmentally Preferable Purchasing

What does it mean?

Buildings

Janitorial Products

Food Packaging

Carpets

Electronics
Environmentally Preferable Purchasing

Why Janitorial Products?

- Institutional/commercial cleaning is a $100+ billion industry.
- Institutional/commercial cleaning industry uses roughly 6 to 8 billion pounds of cleaning products.
- Cleaning industry employs 2 to 3 million janitors; but due to very high turn-over, more are exposed.
- Most people spend more than 90 percent of their time indoors.

*The Center for a New American Dream*
Annual Baseline Worker Chemical Exposure Data

Janitorial data:
- 54.5 lbs/janitor
- 6.1 lbs/1000 sq feet

Building maintenance data:
- 17.7 lbs/year
- 6.6 lbs/1000 sq feet

City and County of San Francisco, Environmentally Preferable Purchasing Program Data
Annual Janitorial Injuries

For every 100 workers:

- 6 Chemical accidents per year
  - 3 eye injuries
  - 2 skin injuries
  - 1 inhalation/other
Take Home Message

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- Use a defensible methodology to identify preferable products
- Prioritize and Implement EPP into contracting language; educate your GPOs and suppliers
# Product Evaluation Exercise

<table>
<thead>
<tr>
<th>Site:</th>
<th>Area:</th>
<th>Contact:</th>
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<table>
<thead>
<tr>
<th>Product:</th>
<th>Amounts Used</th>
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<tr>
<td></td>
<td>Size</td>
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<table>
<thead>
<tr>
<th>Use:</th>
<th>Supplier / Manufacturer:</th>
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<thead>
<tr>
<th>MSDS No. &amp; Date:</th>
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<table>
<thead>
<tr>
<th>Recommendations:</th>
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<th>HMIS:</th>
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<table>
<thead>
<tr>
<th>Health &amp; Safety Issues</th>
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<tbody>
<tr>
<td>1. Carcinogens / Mutagens / Teratogens</td>
<td>0 / 200</td>
<td>0.1% or less</td>
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<td>0 / 30 / 50 / 100</td>
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<td>0 / 25 / 50</td>
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<td>0 / 50</td>
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<td>7. Flammability</td>
<td>0 / 20 / 30 / 50</td>
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<td>0 / 100</td>
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<td></td>
</tr>
<tr>
<td>9. Endocrine Modifiers</td>
<td>0 / 50</td>
<td>1.0% or less</td>
<td></td>
</tr>
<tr>
<td>10. Greenhouse Gases</td>
<td>0 / 100</td>
<td>1.0% or less</td>
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</tbody>
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<table>
<thead>
<tr>
<th>H&amp;S Subtotal</th>
<th>H&amp;S Failing Score &gt;= 200 points</th>
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<tbody>
<tr>
<td>0</td>
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</table>

Chemical Product Scoring Methodology

- 18 criteria based on:
  - Other EPP Programs
  - Tests with 100+ products
  - Comments from environmental staff, technical experts, and product vendors

- Lower score is better

- Failing subtotal scores
Health and Safety

- Failing subtotal score > 200
  - ✔ 200 points - Carcinogens
  - ✔ 100 points - Neurotoxins
  - ✔ 100 points - Eye Irritation
  - ✔ 100 points - Skin Irritation
  - ✔ 50 points - Ease of Skin Absorption
  - ✔ 50 points - Corrosivity
  - ✔ 50 points - Flammability
Environmental

- **Failing subtotal score > 100**
  - ✓ 100 points - Ozone Depleting
  - ✓ 50 points - Endocrine Modifier
  - ✓ 100 points - Greenhouse Gases
  - ✓ 25 points - Biodegradability
  - ✓ 100 points - VOCs
  - ✓ 25 points - Added Fragrances
  - ✓ 25 points - Added Dyes
Packaging and Distribution

- **Failing subtotal score > 35**
  - ✓ 10 points - Available as Concentrate
  - ✓ 15 points - Available as Non-aerosol
  - ✓ 10 points - Refill/Return/Recycle
  - ✓ 10 points - Recycled Content
Information in MSDSs and Vendor Literature

City and County of San Francisco, from 195 janitorial, building, and fleet products
Health and Safety Criteria #1: Carcinogens, Mutagens, or Teratogens

Look on the MSDS to determine whether any chemical is listed as:

- Known Carcinogen
- Probable Carcinogen
- Possible Carcinogen

If yes, score = 200
If no, score = 0
Health and Safety Criteria #2: Neurotoxins/CNS Depressants

Under “Health Hazard and First Aid” Section look for phrases such as:

“may cause headaches, dizziness, and asphyxia.”

Ultimately, consult EPA’s Integrated Risk Information System (IRIS) at:
http://www.epa.gov/ngispgm3/iris/

If yes, score = 100
If no, score = 0
Health and Safety Criteria #3: Eye Irritation

<table>
<thead>
<tr>
<th>Eye Irritation Categories</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV - “Reddening”</td>
<td>0</td>
</tr>
<tr>
<td>III - “Irritation”</td>
<td>30</td>
</tr>
<tr>
<td>II - “Severe”</td>
<td>50</td>
</tr>
<tr>
<td>I - “Corrosive Damage”</td>
<td>100</td>
</tr>
<tr>
<td>Skin Irritation Categories</td>
<td>Score</td>
</tr>
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<td>-----------------------------------</td>
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Health and Safety Criteria #5: Skin Absorption

Products containing more than 1% of the following chemicals shall be designated as having a “high potential” for skin absorption (50 points):

- Isopropanol
- 2-butoxyethanol
- Acetone
- 1,1,1-TCE
- MEK
- Naphthalene
- Triethanolamine
- Ethylene Glycol
- Toluene
- Diethylene glycol monobutyl ether
- Tetrachloroethylene
- Monoethanolamine
- Xylene

If no chemicals listed above are in the product, but MSDS indicates potential for skin absorption = 30 points
Health and Safety Criteria #6: Corrosivity

<table>
<thead>
<tr>
<th>pH</th>
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<tbody>
<tr>
<td>&lt; 2.5</td>
<td>50</td>
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<td>2.5 - 11.5</td>
<td>0</td>
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<td>&gt; 11.5</td>
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Non-aqueous products (aerosol) score = 0
Health and Safety Criteria #7: Flammability

<table>
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<th>Flash Point</th>
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<tbody>
<tr>
<td>&gt; 200F</td>
<td>0</td>
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<tr>
<td>140F - 200F</td>
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Aerosol products MSDS typically state product should not be stored above 130 (30 points).
How Did They Score

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H&S Subtotal 0

H&S Failing Score >= 200 points

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# How Did They Score?

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<tr>
<th>Criteria</th>
<th>Betco Glass Cleaner</th>
<th>Clean Environment All Purpose Cleaner</th>
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<tr>
<td>1. Carcinogen</td>
<td>0</td>
<td>0</td>
</tr>
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<td>100</td>
<td>0</td>
</tr>
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<td>0</td>
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<td>30</td>
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<td>0</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td><strong>Total Health and Safety Score:</strong></td>
<td><strong>250</strong></td>
<td><strong>30</strong></td>
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Take Home Message

- First Promote Worker Safety
- Use a defensible methodology to identify preferable products
- Prioritize and Implement EPP into contracting language; educate your GPOs and suppliers
Step 1:
What Products Are Used the Most?

- Toilet bowl cleaner, deodorizers, disinfectants
- Disinfectants and General Purpose Cleaners
- Hard floor cleaners, strippers, and finishes
- Glass cleaners
- Wood polish
- Metal cleaner
- Carpet cleaners
Step 1:
What Products Are Used the Most?

- Over 4,500 gallons of cleaning products
- Over 1,500 gallons of floor cleaners
Step 2: Widespread Use Considerations

- Where is it being used?
  One location?
  Throughout facility?

- How many people are using it?
  All janitorial staff?

- How many people are exposed?
  Patients?
  Staff?
Step 3: Potential Exposure

- **Aerosol sprays**
  - Impacts to indoor air quality
  - User inhalation exposure

- **Chronic exposure concerns**
  - Carcinogens
  - Neurotoxins
  - Dermatitis

- **Acute exposure concerns**
  - Corrosives
Step 4:
Availability of Preferable Products

- ✔ General Purpose Cleaners
- ✔ Glass Cleaners
- ✔ Wood Polish
- ✔ Restroom Cleaners
- ✔ Hard Floor Cleaners
- ✔ Floor Strippers
- ✔ Disinfectants
- ✔ Metal Cleaners
- ✔ Toilet Bowl Cleaners
- ✔ Deodorizers
- ✔ Floor Finish
- ✔ Carpet Cleaners

☐ Drop-in preferable products available
☐ Some preferable products or methods available
☐ Limited preferable products available
Top 5 Janitorial Product Types for which Hospitals Should Purchase Environmentally Preferable Products

1. *General Purpose Cleaners*
2. *Disinfectants*
3. *Glass Cleaners*
4. *Toilet Bowl Cleaners*
5. *Metal Cleaners*
General Purpose Cleaners

- Frequent use, exposure concerns for janitorial staff and building tenants

- Avoid products that contain:
  - butoxyethanol,
  - petroleum distillates (light naptha), or
  - other highly toxic ingredients
Disinfectants

- Concerns about general use of antimicrobials
  - Potential for causing antimicrobial resistance
  - Unknown long term consequences of its use

- Consider using comprehensive product evaluation criteria when selecting disinfectant products
Choosing Environmentally Preferable Glass Cleaners

- Avoid glass cleaners that contain methanol or butoxyethanol
- Look for low concentrations of isopropyl alcohol or ammonia

VOCs
Less than 6%

(this is a California Air Resources Board requirement as of 12/31/04).
Toilet Bowl Cleaner

- Acidic products pose immediate risk to user
- Look for products that do not contain strong acids, such as hydrochloric or phosphoric acid
- Have a pH >2 and <12
- Routinely use non-acid bowl cleaner, only using acid bowl cleaners for periodic deep cleaning
Metal Cleaner

- Exposure concerns for janitorial staff and building tenants

Look for products that do not contain:

- perchloroethylene (PERC)
- n-methyl pyrrolidone (NMP)
- Hexane
- Butoxyethanol
- light petroleum distillates (light naptha)
Preferable Products Availability?

**General Purpose Cleaners = 25+**

**Disinfectants = 9+**

**Glass Cleaners = 14+**

**Toilet Bowl Cleaners = 13+**

**Metal Cleaners = 5+**

City and County of San Francisco, Environmentally Preferable Purchasing Program Data

INFORM “Cleaning for Health”
Contract Language and RFPs

- Build environmental and health and safety criteria into purchasing contracts and RFPs
  - Commonwealth of Massachusetts
   ftp://ftp.comm-pass.com
  - City of Seattle
EP3 Successes -
You Can Do It Too!

City and County of San Francisco EP3 Program Results
EP3: Cost Considerations

**Labor and Use**
(Labor and use requirements typically 80% to 95% of total cost)

- **68%**
  - 48 of 69 Required Similar Time

- **68%**
  - 47 of 69 Required Similar Effort

- **77%**
  - 53 of 69 Required Similar Product Quantity

**Purchase Cost 5-20% of Total**
(Purchase costs typically 85%)

- Preferable products with similar costs identified for 12 of 14 uses tested

City and County of San Francisco EP3 Program Results
Take Home Message

- First Promote Worker Safety
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- Implement EPP into contracting language; educate your GPOs and suppliers
Questions
Other EPP Resources

EPA
www.epa.gov/opptintr/epp

H2E
www.h2e-online.org/tools/epp.htm

Healthcare Without Harm
www.noharm.org/greenPurchasing/eppPolicies

Green Seal
www.greenseal.org
Other EPP Resources

Sustainable Hospitals Project
www.sustainablehospitals.org/cgi-bin/DB_Index.cgi

INFORM
www.informinc.org

WRPPN
www.wrppn.org