

Environmentally Preferable Purchasing: Janitorial Products



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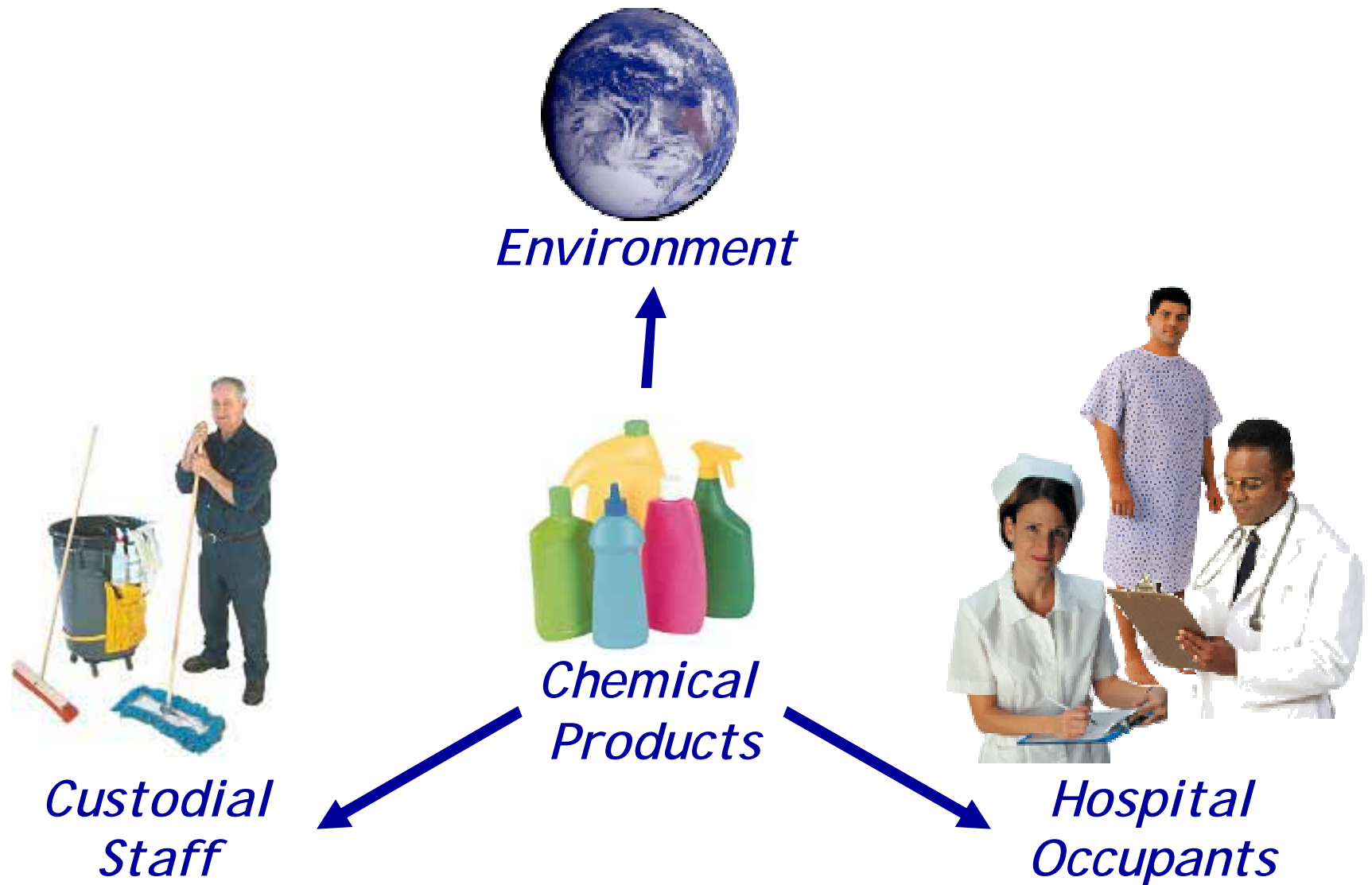


Take Home Message

- **First Promote Worker Safety**
- Use a defensible methodology to identify preferable products
- Prioritize and Implement EPP into contracting language; educate your GPOs and suppliers

Environmentally Preferable Purchasing

Why Cleaning Products?



“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*.

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



Annual Janitorial Injuries

For every 100 workers:

➡ 6 Chemical accidents per year

- 3 eye injuries
- 2 skin injuries
- 1 inhalation/other



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Product Evaluation Exercise

Site:	Area:	Contact:			Date:
Product:		Amounts Used			
		Size	Quantity	Frequency	Purchase Cost
Use:					
MSDS No. & Date:		Supplier / Manufacturer:			
<u>Recommendations:</u>		<u>NFPA:</u>		<u>HMIS:</u>	
		H:		H:	
		F:		F:	
		R:		R:	
		S:		S:	
<u>Health & Safety Issues</u>					
	Score	Possible	Preferences		
1. Carcinogens / Mutagens / Teratogens		0 / 200	0.1% or less		
2. Neurotoxins		0 / 100	1.0% or less		
3. Eye Irritation		0 / 30 / 50 / 100	Mild or no effect		
4. Skin Irritation		0 / 30 / 50 / 100	Mild or no effect		
5. Exposure - Ease of Skin Absorption		0 / 25 / 50	1.0% or less		
6. Corrosivity		0 / 50	2.5 < pH < 11.5		
7. Flammability		0 / 20 / 30 / 50	Flashpoint > 200F		
H&S Subtotal		0	H&S Failing Score >= 200 points		
<u>Environmental Issues</u>					
8. Ozone Depleting Substances		0 / 100	1.0% or less		
9. Endocrine Modifiers		0 / 50	1.0% or less		
10. Greenhouse Gases		0 / 100	1.0% or less		

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

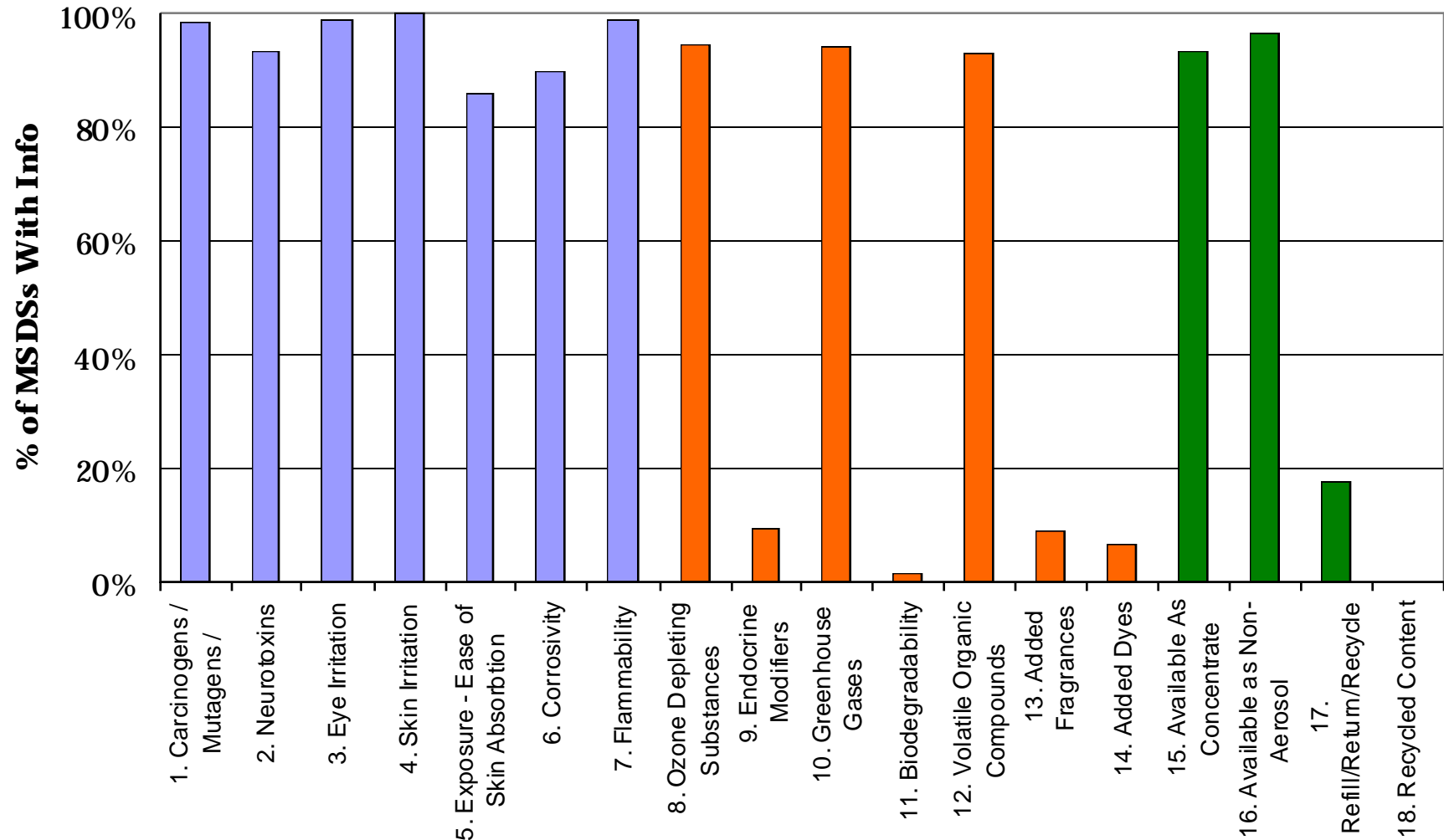
Environmental

- **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

<u>Eye Irritation Categories</u>	<u>Score</u>
IV - "Reddening"	0
III - "Irritation"	30
II - "Severe"	50
I - "Corrosive Damage"	100



Health and Safety Criteria #4: Skin Irritation

<u>Skin Irritation Categories</u>	<u>Score</u>
IV - "Reddening"	0
III - "Irritation"	30
II - "Severe"	50
I - "Corrosive Damage"	100

Health and Safety Criteria #5: Skin Absorbtion

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

<u>pH</u>	<u>Score</u>
< 2.5	50
2.5 - 11.5	0
> 11.5	50



Non-aqueous products (aerosol) score = 0

Health and Safety Criteria #7: Flammability

Flash Point

Score

> 200F

0

140F - 200F

20

100F - 140F

30

< 100F

50



Aerosol products MSDS typically state product should not be stored above 130 (30 points).

How Did They Score

Site:	Area:	Contact:	Date:
Product:	Amounts Used		
	Size	Quantity	Frequency
Use:	Purchase Cost	Disposal Route	
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How Did They Score?

Criteria	Betco Glass Cleaner	Clean Environment All Purpose Cleaner
1. Carcinogen	0	0
2. Neurotoxicity	100	0
3. Skin Irritation	0	0
4. Eye Irritation	50	30
5. Skin Absorption	50	0
6. Corrosivity	50	0
7. Flammability	0	0
Total Health and Safety Score:	250	30

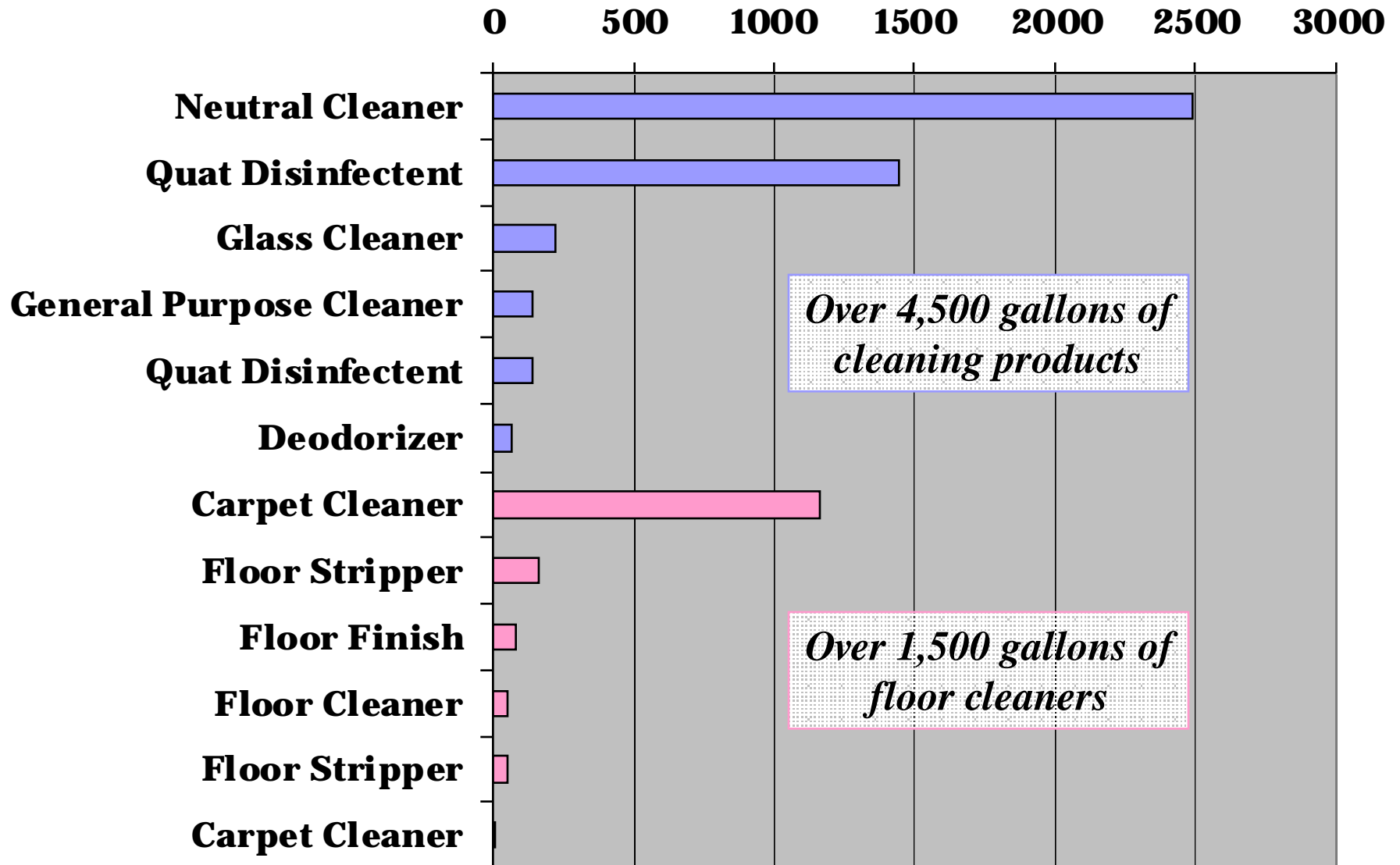
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Step 1: What Products Are Used the Most?



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Step 2: Widespread Use Considerations

- Where is it being use?
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

- | | |
|-----------------------------------|-------------------------------|
| ✓ <i>General Purpose Cleaners</i> | ✓ <i>Disinfectants</i> |
| ✓ <i>Glass Cleaners</i> | ✓ <i>Metal Cleaners</i> |
| ✓ <i>Wood Polish</i> | ✓ <i>Toilet Bowl Cleaners</i> |
| ✓ <i>Restroom Cleaners</i> | ✓ <i>Deodorizers</i> |
| ✓ <i>Hard Floor Cleaners</i> | ✓ <i>Floor Finish</i> |
| ✓ <i>Floor Strippers</i> | ✓ <i>Carpet Cleaners</i> |



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*

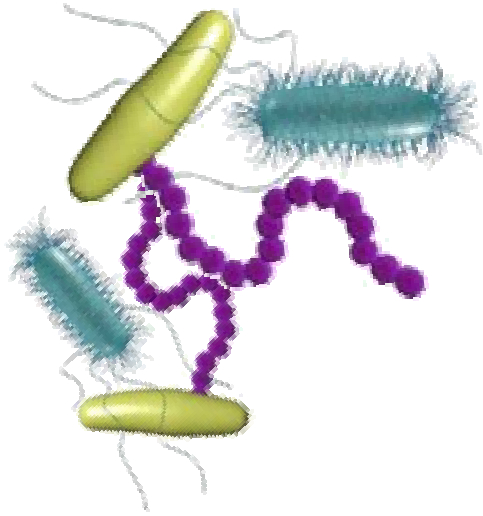
General Purpose Cleaners

- Frequent use, exposure concerns for janitorial staff and building tenants
- Avoid products that contain:
 - ❖ butoxyethanol,
 - ❖ petroleum distillates (light naphtha), or
 - ❖ other highly toxic ingredients

VOCs
Less than 10%



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



(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 naphtha)



Preferable Products Availability?

General Purpose Cleaners = 25+

Disinfectants = 9+

Glass Cleaners = 14+

Toilet Bowl Cleaners = 13+

Metal Cleaners = 5+



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
<http://www.seattle.gov/environment/Documents/JanitorialSpecs.pdf>



EP3 Successes – *You Can Do It Too!*



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

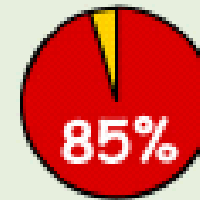


77%

53 of 69 Required Similar Product Quantity

Purchase Cost 5-20% of Total

(Purchase costs typically



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

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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



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WRPPN

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