

# Environmentally Preferable Purchasing: Janitorial Products



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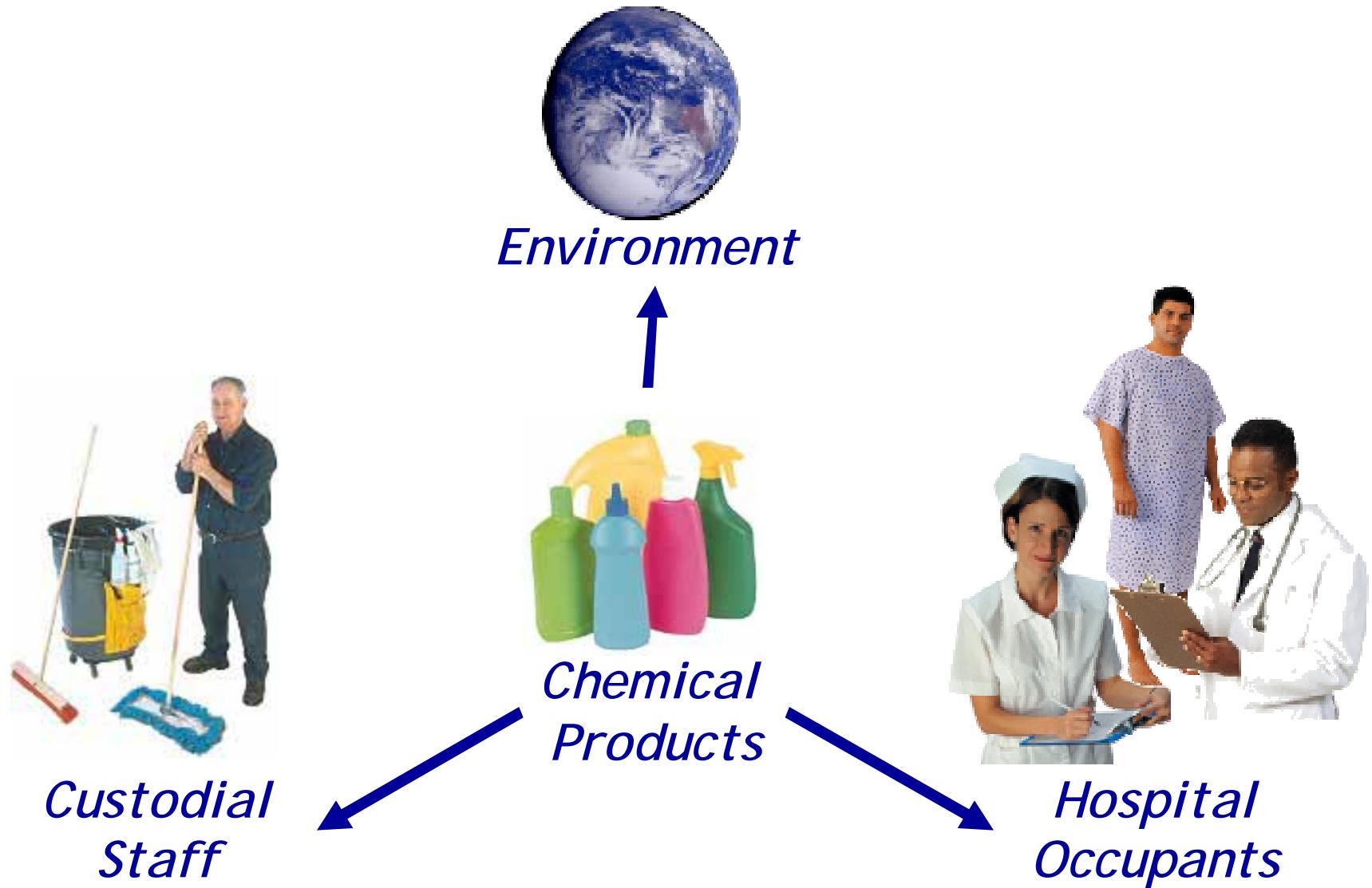


# Take Home Message

- **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

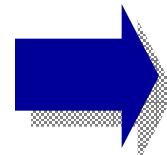


## Building maintenance data:

- 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	Disposal Route
Use:						
MSDS No. & Date:		Supplier / Manufacturer:				
<u>Recommendations:</u>		<u>NFPA:</u>	<u>HMIS:</u>			
		H:	F:	R:	S:	H:
<u>Health &amp; 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 Absorbtion			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		<b>0</b>	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  $\geq 200$** 
  - ✓ 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

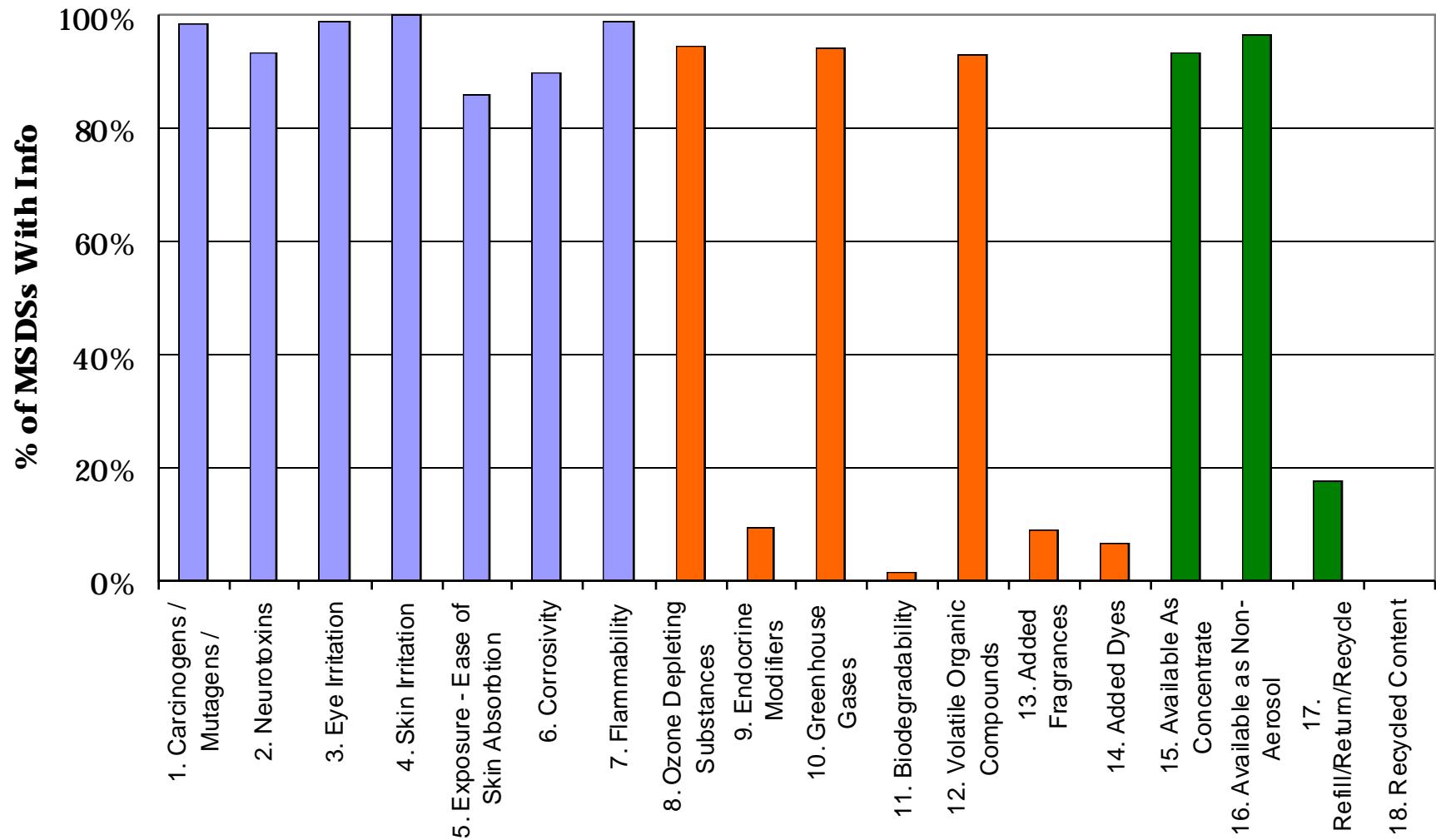
# Environmental

- **Failing subtotal score  $\geq 100$** 
  - ✓ 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  $\geq 35$** 
  - ✓ 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:

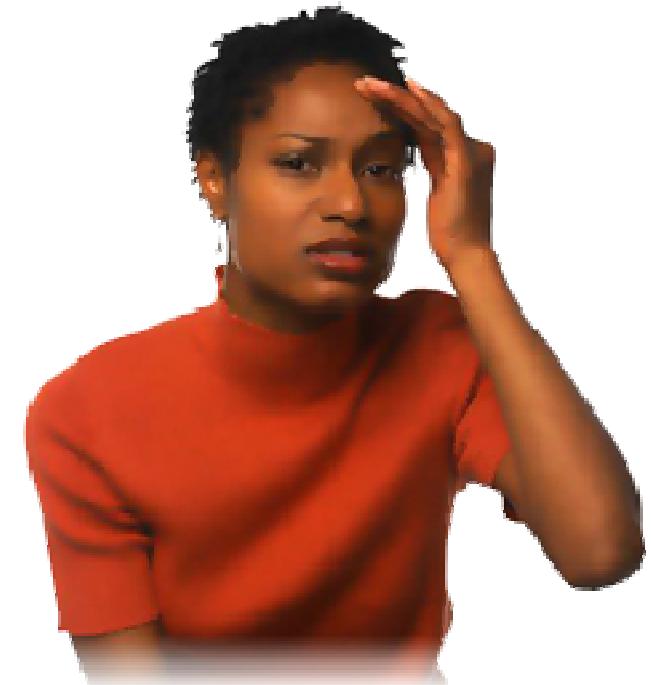
“may cause headaches, dizziness, and asphyxia.”

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 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

<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

<u>Flash Point</u>	<u>Score</u>	
> 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	Purchase Cost	Disposal Route
Use:						
MSDS No. & Date:		Supplier / Manufacturer:				
<u>Recommendations:</u>		<u>NFPA:</u>	<u>HMIS:</u>			
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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
<b>Total Health and Safety Score:</b>	<b>250</b>	<b>30</b>

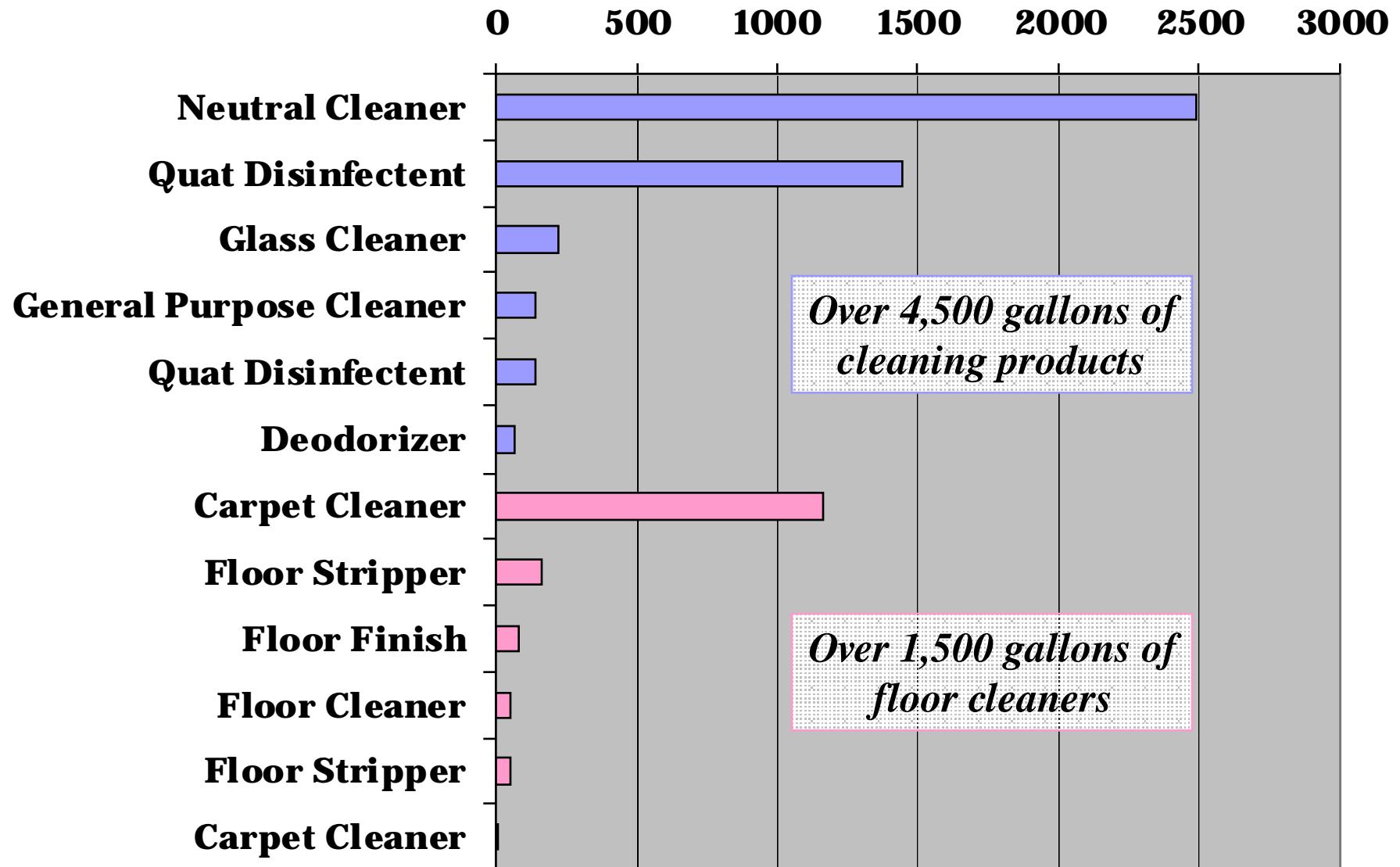
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# Step 1: What Products Are Used the Most?



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## Step 2: Widespread Use Considerations

- Where is it being 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

✓ <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*



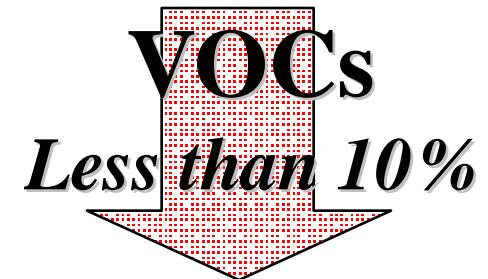
*Limited preferable products available*

# Top 5 Janitorial Product Types for which Hospitals Should Purchase Environmentally Preferable Products

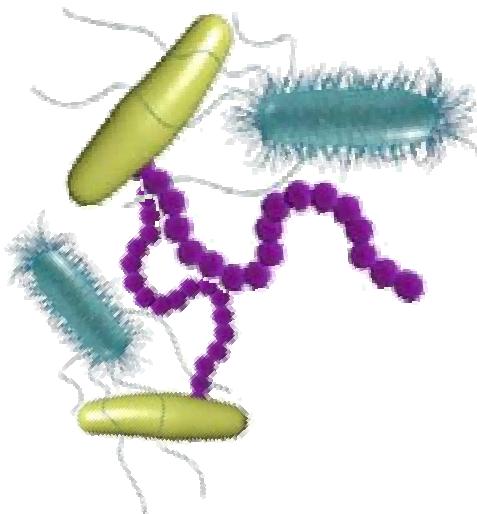
1. *General Purpose Cleaners*
2. *Disinfectants*
3. *Glass Cleaners*
4. *Toilet Bowl Cleaners*
5. *Metal Cleaners*

# General Purpose Cleaners

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



# Disinfectants

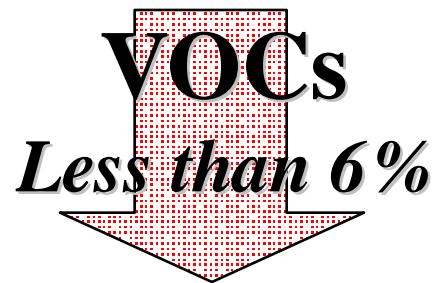


- Concerns about general use of antimicrobials
  - ✓ *Potential for causing antimicrobial resistance*
  - ✓ *Unknown long term consequences of its use*
- Consider using comprehensive product evaluation criteria when selecting disinfectant products



# Choosing Environmentally Preferable Glass Cleaners

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



*(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+

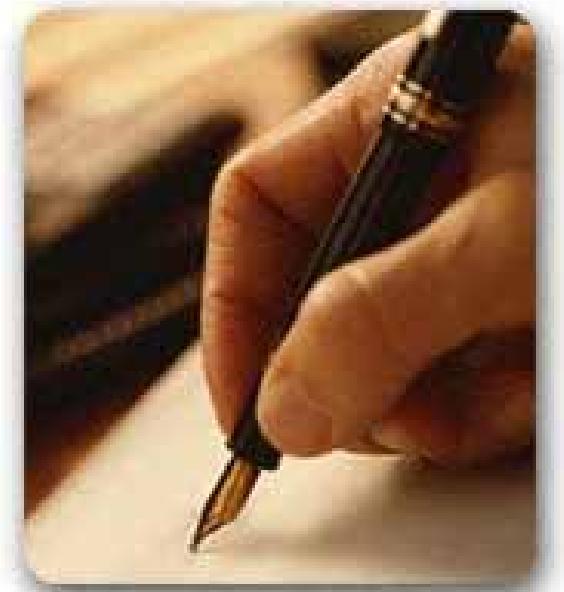
*Toilet Bowl Cleaners* = 13+

*Metal Cleaners* = 5+



# 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!*



*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



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](http://www.epa.gov/opptintr/epp)



H2E

[www.h2e-online.org/tools/epp.htm](http://www.h2e-online.org/tools/epp.htm)



Healthcare Without Harm

[www.noharm.org/greenPurchasing/eppPolicies](http://www.noharm.org/greenPurchasing/eppPolicies)



Green Seal

[www.greenseal.org](http://www.greenseal.org)

# Other EPP Resources



## Sustainable Hospitals Project

[www.sustainablehospitals.org/cgi-bin/DB\\_Index.cgi](http://www.sustainablehospitals.org/cgi-bin/DB_Index.cgi)



## INFORM

[www.informinc.org](http://www.informinc.org)



## WRPPN

[www.wrppn.org](http://www.wrppn.org)

