

## Cleaning Up Environmental Hazards

Successful Green Purchasing

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## Scot Case

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### Who Are We?

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The Center for a New American Dream is a non-profit organization helping Americans consume responsibly to protect the environment, enhance quality of life and promote social justice.

[www.newdream.org](http://www.newdream.org)  
[www.newdream.org/procure](http://www.newdream.org/procure)

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### Why Cleaning Products?

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- Institutional/commercial (I/C) cleaning is a \$100+ billion industry.
  - I/C 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.
  - Janitors tend to be minorities.
  - Most people spend more than 90 percent of their time indoors.
  - Many indoor environments contain hazards that lead to health complaints.
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### Cleaning Products

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- Janitorial workers experience relatively high injury rates due to the toxic chemicals found in traditional cleaning products.
  - Traditional cleaning products have been linked with "sick building" syndrome.
  - Many traditional cleaning products are known to contain:
    - Carcinogens
    - Endocrine disruptors
    - Asthmagens
    - High VOC content
    - Skin and eye irritants
    - Other hazardous materials
    - Toxic chemicals
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### Janitorial Injuries

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- Injuries Per Year (per 100 Janitors)
    - Workers' Comp. Claims 2 per 100
    - Unreported 4 per 100
  - Average Cost Per Claimed Injury
    - Lost Time \$350
    - Medical \$375
    - \$725
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Source: Washington State • Dept. of Labor & Industry



## Sample Product Hazards

- **Dust Mop Spray** - *Central Nervous System*  
[Petroleum Distillates - Light Naphtha]
- **Toilet Bowl Cleaner** - *Burns / Blindness*  
[Hydrochloric or Phosphoric Acid]
- **Floor Finish** - *Reproductive Toxin*  
[Glycol Ether - Ethylene Glycol Methyl Ether]
- **Glass Cleaner** - *Skin Absorbing Poison*  
[Glycol Ether - Ethylene Glycol Butyl Ether]
- **Metal Polish** - *Carcinogenic - Central Nervous System*  
[Perchloroethylene, Toluene, or Hexane]



## Ethylene Glycol Butyl Ether

- 2-Butoxyethanol; EGBE
- CAS #111-76-2
- Absorbs Through Skin
- Poisons Blood, Liver, & Kidneys
- Safe 8-hour Exposure = 20 mg/l

**Typical Cleaner = 30,000+ mg/l**  
**Unsafe After 20 Second Skin Exposure**



## The EPP Challenge

- There were too many sets of competing standards and purchasing criteria.
- Purchasers were confused about how to define "green" cleaners.
- Manufacturers refused to reformulate products because there were too many competing standards.



## Cleaning Products/Services

- Chatham County, North Carolina
- Indiana
- Jackson County, Missouri
- Kansas City, Missouri
- King County, Washington
- Massachusetts
- Minnesota
- Multnomah County, Oregon
- Pennsylvania
- Richmond, California
- Santa Monica, California
- Seattle, Washington
- U.S. Department of Interior
- U.S. Environmental Protection Agency
- U.S. General Services Administration
- U.S. National Park Service
- Vermont
- Washington



## Chemicals to Avoid

Acetone	Sodium Hydroxide
Ammonia/Ammonium Hydroxide	Sodium Hypochlorite, Bleach
2-Butoxyethanol	Sodium Tripolyphosphate
Diethylene Glycol Monobutyl Ether	Tetrachloroethylene
Hydrochloric Acid	1,1,1-Trichloroethane
Naphthalene	Toluene
Perchloroethylene	Xylene
Phosphoric Acid	
Polyethylene Monophenyl Ether	



## Environmental Considerations

### Raw Materials

- absence of petroleum- or hydrocarbon-based materials
- use of biobased materials



## Environmental Considerations

### *Manufacturing/Product Content*

- company's overall environmental impact
- artificial dyes or fragrances
- chemical content
- known carcinogens
- ozone-depleting chlorinated compounds
- reproductive toxins
- use of regulated hazardous materials



## Environmental Considerations

### *Product Packaging*

- concentrated formula
- packaging designed to reduce contact with concentrate
- recyclable packaging
- recycled-content packaging
- reduced packaging
- refillable bottles
- nonaerosol container
- products shipped in bulk



## Environmental Considerations

### *Product Use*

- acute toxicity
- affects on air quality
- chronic toxicity
- corrosiveness
- flashpoint
- irritation potential
- likelihood of exposure to concentrate
- pH level
- skin and eye irritation potential
- use with cold water instead of hot
- VOC content



## Environmental Considerations

### *Product Disposal*

- aquatic toxicity
- biodegradability



## The EPP Solution

- Work with the innovative pioneers to reach consensus on a single set of environmental criteria that could be used nationally.
- Used Green Seal (GS-37) standard as a minimum baseline.
- Added additional criteria for products not covered by the Green Seal standard.
- Work group members have agreed to use the new criteria.



## The EPP Solution

- Massachusetts was the first to issue an RFR with the new criteria.
- Santa Monica, CA, and Minnesota have both initiated RFRs using the identical criteria.
- Others across the country have agreed to use it.



## From Massachusetts RFR

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### **Multi-State Approach**

This procurement has been designed in consultation with various state and local governments across the country for the purpose of establishing a set of minimum criteria that they and others can use in drafting their contract bids. This effort was coordinated by the Center for a New American Dream and included the participation of Massachusetts; Minnesota; Missouri; Washington; King County, Washington; Phoenix, Arizona; Santa Monica, California; Seattle, Washington; and the Pacific Northwest National Laboratory. Additional information on this working group is available from Marcia Deegler at 617 720-3356 or Scot Case at 610-373-7703.

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## Additional Information

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- Center for a New American Dream - [www.newdream.org/procure/products/cleaners.html](http://www.newdream.org/procure/products/cleaners.html)
  - INFORM's "Cleaning for Health" report - [www.informinc.org/CFHbook.htm](http://www.informinc.org/CFHbook.htm)
  - Janitorial Products Pollution Prevention Program - [www.westp2net.org/Janitorial/jp4.htm](http://www.westp2net.org/Janitorial/jp4.htm)
  - U.S. Environmental Protection Agency "Cleaning Wizard" - [www.epa.gov/opptintr/epp/cleaners/select/](http://www.epa.gov/opptintr/epp/cleaners/select/)
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