

MI DEQ & RETAP Pollution Prevention (P2) Training

P2 & Environmentally Preferable Purchasing (EPP)

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EPP: What is It?

□ Environmentally Preferable Purchasing (EPP) is the practice of purchasing products that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.

EPP: What Products?

EPP products can include:

- Recycled content products**
- Less toxic products**
- Water conserving products**
- Energy conserving products**
- More durable products**
- Biodegradable products**
- Products with less packaging**

EPP: What is It?

Definitions:

- ❑ Post-consumer waste: generated by consumer after product has served its use.**
- ❑ Remanufactured products: have been made from existing product materials to meet normal specifications.**
- ❑ Recyclable products: can be recycled.**

EPP:

The Link Between Environment & Procurement

- Procurement can be front line of defense against pollution & wasteful practices.
- Simpler & less costly than end of pipe practices.
- Can often be centralized operation so have some control over what products are purchased.
- Large purchasers can drive national, regional, local & even global markets.

EPP: Why Use EP Products?

- ❑ Recycled aluminum cans require 95% less energy to manufacture.**
- ❑ Using 1 ton of recycled paper saves 20 trees and 7,000 gallons of water.**
- ❑ 100 Energy Star computers and monitors can save \$10,000 in energy costs over 5 years.**
- ❑ Correlation between improved health and working environment when using certain EP products.**

EPP: Markets for EP Products

- ❑ Greater demand will drive down prices.**
- ❑ Many municipal recycling programs have periodic trouble selling collected materials. Buying recycled-content products will support these markets.**
- ❑ Many vendors do not carry EP products because they sense no demand.**

EPP: Who is Doing It?

- ❑ Hundreds of communities & towns across the country**
- ❑ State governments – Massachusetts made it mandatory**
- ❑ All federal agencies**
- ❑ Private companies & organizations**
- ❑ School Districts?**

EPP Case Study: Santa Monica, CA

- Replaced traditional cleaning products with less toxic alternatives in 15 of 17 product categories, cut spending by 5%**
 - ⇒ Support from the top**
 - ⇒ Upfront research**
 - ⇒ Included end-users in process**
 - ⇒ Team approach**
 - ⇒ Vendors, product demonstrations & training**

EPP: Buy Clean Initiative

Starting an EPP Program in a School

- Identify key team players:**
 - ⇒ Superintendent**
 - ⇒ Director of Facilities**
 - ⇒ Purchasing Personnel**
 - ⇒ Principal**
 - ⇒ Custodial Staff**
- Forge partnership between Facilities Director & Purchasing Department**
- Develop an EPP Policy Statement**

EPP:

How to Implement a Program

- ☐ Inventory current cleaning products**
 - ⇒ Product Inventory Sheet**
- ☐ Identify cleaning product ingredients & safety concerns**
 - ⇒ Use Material Safety Data Sheets (MSDS)**
- ☐ Develop & list desired product attributes**
 - ⇒ EPP Selection Criteria Checklist**

How to Implement an EPP Program

- ❑ **Develop a purchasing policy & EPP bid specifications**
- ❑ **Identify alternative cleaners & evaluate them**
- ❑ **Make the switch!**
 - ⇒ **Establish target date & inform all involved parties**
 - ⇒ **Arrange training for custodial staff**
 - ⇒ **Change out cleaning products**

EPP Training Exercise

GOALS

- Understand basics of implementing an EPP program:**
 - Brief “walk-through” of the process**
 - Recognize general tools necessary to implement a program at your school**
 - You won’t be an expert!!**

EPP Training Exercise

Product Inventory Sheet

School: Danny Boy Academy

Date: March 8, 2002

Product Name	Use	Quantity Used (per month)		Quantity In Stock	
		Lbs.	Gals.	Lbs.	Gals.
1. Superscore	floor stripper	1 gallon		5 gallons	
2. Simple Green	all purpose cleaner	10 gallon		25 gallons	
3. H ₂ Orange ₂ Concentrate	cleaner/degreaser	1/2 gallon		5 gallons	
4.					
5.					

Training Exercise

Product Ingredients & Safety Concerns

☐ Use MSDS to Identify Attributes

☐ What Are Attributes?

- ✓ Product characteristics that impact human health & the environment**

☐ Examples

- ✓ Carcinogens – does it contain carcinogens?**
- ✓ Flammability – is it highly flammable?**
- ✓ Biodegradability – is the product biodegradable?**

Superscope (Floor Stripper) Carcinogens

section 3 - hazards identification

emergency overview

clear green liquid with floral odor.

corrosive. causes severe eye and skin burns. causes respiratory tract irritation.

potential health effects

hmis ratings

inhalation: causes respiratory tract irritation.

health: 3

eye contact: causes severe eye burns. may cause blindness.

flammability: 0

skin contact: causes severe skin burns.

reactivity: 0

skin absorption: 2-butoxyethanol may be absorbed through the skin and cause toxic effects to the liver, kidneys and blood forming systems.

ppe: see section 8

ingestion: material can burn the mouth, throat, and stomach.

chronic health risks: preexisting conditions aggravated by

overexposure: chronic diseases of the respiratory system, kidneys and liver.

carcinogenicity: ntp carcinogen: no iarc monographs: no osha regulated: no

Superscope (Floor Stripper)

Flash Point & Corrosiveness (pH)

section 5 - fire fighting measures

flash point: none. method used: none. lel: none. uel: none.
nfpa ratings: health: 3 flammability: 0 reactivity: 0
extinguishing media: use water, foam, c02.
special firefighting procedures: none known.

section 9 - physical and chemical properties

odor/appearance : floral, green physical state : liquid
ph : 12.8-13.2 vapor pressure : none
vapor density : >1 boiling point : 212.f
freezing point : none melting point : none
spec. gravity : 1.0 solubility h20 : complete
% volatiles-vol : 90

Superscope (Floor Stripper)

Chronic Health Risks

section 3 - hazards identification

emergency overview

clear green liquid with floral odor.

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Superscope (Floor Stripper)

Skin/Eye Irritant

section 3 - hazards identification

emergency overview

clear green liquid with floral odor.

corrosive. causes severe eye and skin burns. causes respiratory tract irritation.

potential health effects

hmis ratings

inhalation: causes respiratory tract irritation.

health: 3

eye contact: causes severe eye burns. may cause blindness.

flammability: 0

skin contact: causes severe skin burns.

reactivity: 0

skin absorption: 2-butoxyethanol may be absorbed through the skin and cause toxic effects to the liver, kidneys and blood forming systems.

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ingestion: material can burn the mouth, throat, and stomach.

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Training Exercise

Identify Alternative Cleaners

- Identify Vendors and Alternative Cleaners**
 - You are the client!**
 - Request specific information regarding their cleaning products**
- Make the Switch to Environmentally Friendly Cleaning Products!!**

H₂Orange₂

Flammability/Flash Point

SECTION III - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A

FLAMMABLE EXPLOSIVE LIMITS % BY VOLUME: Lower: N/A
Upper: N/A

FIRE EXTINGUISHING MEDIA: CO₂ or Dry Chemical

SPECIAL FIRE-FIGHTING PROCEDURES: None known

UNUSUAL FIRE AND EXPLOSION HAZARD: None known

H₂Orange₂

Corrosiveness (pH) & Biodegradability

SECTION IV - PHYSICAL DATA

BOILING POINT:	112 Degrees F.
SPECIFIC GRAVITY (Water=1):	1.02
SOLUBILITY IN WATER:	Complete
MELTING POINT:	Unknown
PH:	3.6
APPEARANCE:	Clear
ODOR:	Citrus

SECTION VII - SPILL, LEAK OR DISPOSAL PROCEDURES

WASTE DISPOSAL METHOD: Biodegradable Product. Dispose of container according to state, federal and local laws.

PRECAUTIONS IN HANDLING AND STORING: Store indoors. Store away from strong reducing agents.

OTHER PRECAUTIONS TO BE TAKEN: None known

H₂Orange₂ Skin/Eye Irritant

SECTION V - PRODUCT HEALTH HAZARD DATA

PRINCIPAL ROUTES OF ABSORPTION:

Inhalation -	N/A
Ingestion -	May cause stomach upset
Skin -	May cause skin irritation if left on for long periods of time.
Eye -	May cause eye irritation

POSSIBLE SYMPTOMS OF OVEREXPOSURE:

Dry skin or stinging sensation

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation -	N/A
Ingestion -	Drink several glasses of water and consult physician.
Skin -	If irritation occurs, rinse thoroughly with water for at least 5 minutes. Apply moisturizing cream. If irritation persists, consult physician.

“Before” EPP: Purchasing Department Goals

- Best Customer Service**
- Work with Suppliers to reduce Costs**
- Work with Suppliers to reduce Toxics in raw materials**
- Work with Suppliers to reduce Shipping / Packaging wastes**
- Perform “Cost Reduction Initiatives Affirmative Procurement Purchases” (AP²)**

Affirmative Procurement Purchases (AP²) Elements

- Recovered Materials Preference Program**
- Promotion Program**
- Estimation, Certification & Verification Program**
- Monitoring**
- Review**
 - Incorporate requirements for recovered material content**
 - Remove purchasing guidelines that hinder AP² efforts**

AP² Exemptions

AP² purchasing requirements should be exempted when:

- Item made from recovered material is too expensive**
- Few suppliers of items exist**
- Long delays in receiving item**
- Unacceptable performance**

Affirmative Procurement Purchases (AP²)

- ☐ Team management by:**
 - ☐ P2 & EHS staff**
 - ☐ Commodity Managers, Internal Consumers & Suppliers/Contractors**
- ☐ Review waste stream data**
- ☐ Develop examples of Successes**
- ☐ Understand Barriers to Success**
- ☐ Objective: Purchase/Develop products, services & packaging that solve waste problems for customers & suppliers.**
- ☐ Develop suggestions for “Headquarters” assistance**

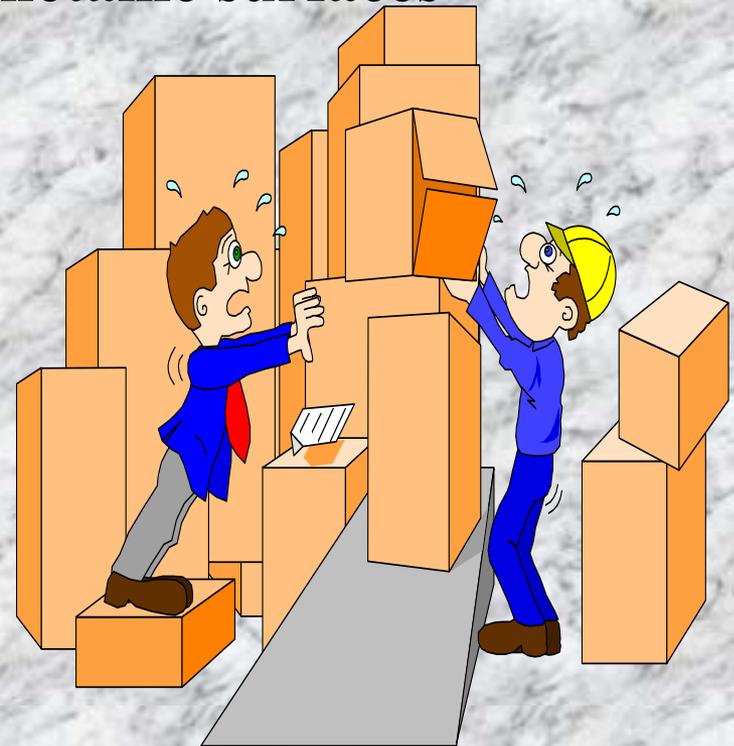
AP² Requirements

❑ Material must not:

- ❑ Prevent the application of paint to a surface
- ❑ Cause a corrosive attack on metallic surfaces
- ❑ Attack rubber components
- ❑ Attack painted surfaces

❑ Should be:

- ❑ Non-carcinogenic
- ❑ Environmentally friendly
- ❑ Easily disposed of



AP² Requirements

- Price no greater than 1.5 x Methyl Chloroform
- Flash point (closed cup) equal to or greater than 140 degrees F
- Evaporation rate comparable to Stoddard Solvent
- Must remove organic materials (Oil, greases, cutting fluids, etc.)
- Nonvolatile Residue must not create adhesion problems (Not to exceed 100 PPM)
- Electrical resistance should be greater than 30 Megohms

EMS Benefits

Continual Improvement Efforts

- ❑ MEK used to clean windshield edge prior to sealant application
- ❑ Waste MEK disposal cost: **\$268 for 1 drum/year**
- ❑ EMS/EMP objective to investigate MEK in cleaning application prompts company call
- ❑ KPPC provides assessment & identifies NMP alternative cleaner
- ❑ Company tests & implements option to improve health & safety by eliminating a carcinogen
- ❑ Next P2 step: water-based adhesive & cleaner?

Suggestions for “Headquarters”

- ❑ **More direct funding for implementing AP2**
- ❑ **Issue AP2 guidance**
 - ❑ **Provide better information to suppliers on AP2 requirements**
 - ❑ **Incorporate requirement for AP2 into contracts**
 - ❑ **Allow more time to respond to AP2 information requests**
- ❑ **Establish “testing program” & disseminate results.**

Performance-Based EMS with Suppliers

- ❑ Ford Louisville Assembly Plant worked with supplier to eliminate lead from e-coat operations (Took 1 year!)**
- ❑ Coating supplier monitors VOC content**
- ❑ EMS Surveillance Audit Finding: No lead-based paints; What did you replace it with? What is the impact? Let me see your Aspects List!!!**
- ❑ Is the e-coat sludge “special waste” a significant impact/aspect?**

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***Next Steps: Implement EPP &
Buy Clean!***

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