Identifying and Managing Potentially Hazardous Household Waste

Reilly Kosinski – Total Reclaim, Inc.
Background
Background
Hazardous Waste Classifications
What is Hazardous Waste?

In general, Hazardous Wastes exhibit one or more of the following four hazardous characteristics:

- **Flammable/Ignitability**
  The ability to catch on fire

- **Reactivity**
  The ability to react with other substances

- **Corrosivity**
  The ability to damage/destroy a surface or anything it contacts

- **Toxicity**
  The ability to cause damage a living organism
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Bleach</td>
</tr>
<tr>
<td>2)</td>
<td>Gasoline</td>
</tr>
<tr>
<td>3)</td>
<td>Oil-Based Paint</td>
</tr>
<tr>
<td>4)</td>
<td>Aspirin</td>
</tr>
<tr>
<td>5)</td>
<td>Nail Polish Remover</td>
</tr>
<tr>
<td>6)</td>
<td>Drain Cleaner</td>
</tr>
<tr>
<td>7)</td>
<td>Ant &amp; Roach Killer</td>
</tr>
<tr>
<td>8)</td>
<td>Baking Soda</td>
</tr>
<tr>
<td>9)</td>
<td>Oven Cleaner</td>
</tr>
<tr>
<td>10)</td>
<td>Batteries</td>
</tr>
<tr>
<td>11)</td>
<td>Lighter Fluid</td>
</tr>
<tr>
<td>12)</td>
<td>Latex Paint</td>
</tr>
<tr>
<td>13)</td>
<td>Weed Killer</td>
</tr>
<tr>
<td>14)</td>
<td>Antifreeze</td>
</tr>
<tr>
<td>15)</td>
<td>Paint Thinner</td>
</tr>
</tbody>
</table>
## Answers

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bleach</td>
<td>C,R,T</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gasoline</td>
<td>I,T</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Oil-Based Paint</td>
<td>I,T</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Aspirin</td>
<td>N (also T)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Nail Polish Remover</td>
<td>I,T</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Drain Cleaner</td>
<td>C,R,T</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ant &amp; Roach Killer</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Baking Soda</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Oven Cleaner</td>
<td>C,R,T</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Batteries</td>
<td>C,R,T</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Lighter Fluid</td>
<td>I,T</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Latex Paint</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Weed Killer</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Antifreeze</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Paint Thinner</td>
<td>I,T</td>
<td></td>
</tr>
</tbody>
</table>
Everything is Toxic

There are 4 Toxicity Classes.
Classes I to III are required to carry a **Signal Word** on the label.

**Toxicity Class IV**
- Practically nontoxic
- No Signal Word required since 2002

**Toxicity Class III**
- Slightly toxic
- Signal Word: “**Caution**”, possibly followed by:
  - "Harmful if swallowed", "May be harmful if absorbed through the skin", "May be harmful if inhaled", or "May irritate eyes, nose, throat, and skin"
- Class III materials are estimated to be fatal to an adult human at some dose in excess of 30 grams.
How Toxic is it?

Toxicity Class II

• Moderately toxic
• Signal Word: "**Warning**", possibly followed by:
  • "Harmful or fatal if swallowed", "Harmful or fatal if absorbed through the skin", "Harmful or fatal if inhaled", or "Causes skin and eye irritation"
• Class II materials are estimated to be fatal to an adult human at a dose of 5 to 30 grams.

Toxicity Class I

• Most toxic;
• Requires Signal Word: "**Danger-Poison**", with skull and crossbones symbol, possibly followed by:
  • "Fatal if swallowed", "Poisonous if inhaled", "Extremely hazardous by skin contact--rapidly absorbed through skin", or "Corrosive--causes eye damage and severe skin burns"
• Class I materials are estimated to be fatal to an adult human at a dose of less than 5 grams (less than a teaspoon).
What is Household Hazardous Waste (HHW)?

• Simply put – Residential consumer waste which qualifies as hazardous waste when discarded.
HHW Breakdown

• In general, about 1% of household waste can be classified as hazardous.
• The average household generates about 30 pounds of HHW per year.
• The annual national total is roughly 1.6 million tons
Major Categories of HHW

- E-waste
- Radioactive Waste
- Mercury Containing Wastes (Fluorescent lamps, Thermostats)
- Batteries
- Refrigerant Containing Devices
- Paints and Solvents
- Cleaning Agents
- Pesticides, Herbicides, & Insecticides
- Aerosols, Propane Cylinders
- Automotive Wastes (Oil, Antifreeze, etc.)
- Ammunition
- Pharmaceuticals
What to do with it?

- Use it up
- Reuse/Recycling
- Neutralization (for Corrosives)
- Incineration, Destruction and Waste-to-energy
- Hazardous waste landfill (sequestering, isolation, etc.)
Safety Hierarchy

Elimination

Substitution

Engineering/Maintenance

Instruction/Methods

PPE
E-waste and Radioactive Waste
Magnetism
Magnetism
Potential
Potential
Potential
Potential
Mercury Containing Devices
Batteries

No Short Circuits!!!
Refrigerant Containing Devices
Household Chemicals, Oils, & Gases

- Paints and Solvents
- Cleaning Agents
- Pesticides, Herbicides, & Insecticides
- Aerosols, Propane Cylinders
- Automotive Wastes (Oil, Antifreeze, etc.)
Labels are our Friends!

“Caution”

“Warning”

“Danger”

“Poison”

“Flammable”

“Corrosive”
More Worries...

- Ammunition
- Pharmaceuticals
Where to Start?

• Start at the end
  – Where is the stuff going to go and how much will it cost?
• How are you going to get it there?
  – Shipping, Packaging
• How are you going to house it?
  – Handling
• How are you going to get in your possession?
  – Outreach
• How are you going to afford it?
  – Budget/Show me the Money (and/or Donation).
Lessons Learned

• Trash collects trash
• Research and Make a plan
• Budget and Stick to your budget
• Know “Where does it go?”
• Plan/Perform Outreach
• Utilize partnerships as much as possible
General Ideas

Home –
- Inventory Items
- Additional Labeling
- Safe Storage
- Get Rid of Stuff

At the Shop –
- Inventory
- MSDS/Label
- Track Waste
- Storage
- Disposal
Indoor Air Quality

Pollutant Sources include:

- Cleaners/Chemicals
- Carpet, Furniture, Particle Board, etc.
- Variety of Household products
- People
Helpful Plants

- Spider Plant
- Peace Lily
- Aloe Vera
- Lady Palm
Alternative Cleaners

• Baking Soda
• Borax
• Vegetable Oil Based Soaps
• Salt
• Vinegar
• Lemon Juice
• Corn Starch
Helpful Apps

Checkout the Handout for Apps Regarding...

• Recycling
• HazMat
• Saving Energy
• Be “Green”
Questions???