WHMIS
Workplace Hazardous Materials Information System

Thank you to...

Swish MAINTENANCE LIMITED
Quality Cleaning Products Since 1958
IN THE NEWS

May/2003:
11 Workers Sent to Hospital After Chlorine Spill / Store Evacuated

2003:
Woman dies in bathroom when bleach falls into toilet bowl containing bowl cleaner

August/2004:
24 yr. old worker dies as a result of inhaling toxic fumes
School board fined in woman's death

Must pay $150,000 for failing to provide updated training
Caretaker accidentally mixed toilet bowl cleaner, bleach

The Toronto District School Board has been fined $150,000 in the wake of a caretaker's death on the job.

The board pleaded guilty to not providing Gloria Lucas with updated training in the handling of chemicals after she died cleaning a school washroom in June 2002. Lucas, 56, who had worked for the school for 20 years, is believed to have accidentally mixed toilet bowl cleaner with bleach - unleashing a deadly chlorine gas.

The woman's family complained to a co-worker of being unable to breathe and died later that evening in hospital, Ontario's labour ministry says.

After the accident, the ministry laid seven charges against the board under the province's Occupational Health and Safety Act, but the other six were dismissed this week.

"My mother wasn't protected at work," said her daughter, Cheryl Lucas D'Silva. "She's a custodian going there to do a cleaning job, and her employer didn't ensure that she was able to do that."

School board officials say they had removed bleach from schools shortly before Lucas' death, but there were still some bleach products left to be used up, which Lucas was handling.

"What happened to Mrs. Lucas was very, very regrettable, but we no longer use these particular chemicals in our schools," said Tony Brown, the board's legal counsel.

"We have replaced them with other products, some of them green, but bear in mind, many families still use these common household cleaners; it's toilet bowl cleaner and a Doper-style bleach."

Brown said Lucas worked part-time on the evening shift, had been trained in the handling of chemicals in the 1980s but had not received updated training in the years that followed.

But the union and Lucas' family argued she never had appropriate training with chemicals.

"If she had had the proper training, this accident might have been averted," said Bill Young, the health and safety representative of the Canadian Union of Public Employees, Local 4400.

While Young said the fine was substantial, "unfortunately the family doesn't get one penny of this." Because Lucas was a part-time employee, she received no benefits from the board, such as life insurance.

"Do we feel we have closure? No. Do we feel still angry? Yes, it brings up all those frustrations," D'Silva said.

"We weren't involved in any of that behind-the-scenes talk about settling."

For the family, the next move might be in civil court.

"That's something we may pursue," D'Silva said. "We are going to be looking into it."
Waste nitric acid + ~ 20 ml of ethanol
WHMIS - WHAT IS IT?

- CANADA WIDE SYSTEM

- “CONTROLLED PRODUCTS”
  (as defined in the Hazardous Products Act)

- “RIGHT TO KNOW”
WHMIS - MAIN ELEMENTS

**Labels**
- supplier
- workplace
- laboratory

**Material Safety Data Sheets**

**Training**
- core
- workplace specific
WHMIS - RESPONSIBILITIES

SUPPLIER

✓ Classify Product

✓ Apply Supplier Label

✓ Provide Material Safety Data Sheet & renew at least every 3 years
EMPLOYER

- Train employees
- Ensure their understanding
- Make MSDS available
- Ensure products are labeled/identified
- Maintain a current inventory of hazardous materials
EMPLOYEE

✓ Take WHMIS training

✓ Apply WHMIS training to work in a safe manner

✓ Report any violation of the NS OH&S Act and WHMIS Regulations
Products Not WHMIS Controlled:

- Explosives (EXPLOSIVES ACT)
- Radioactive Materials (ATOMIC ENERGY ACT)
- Domestic Goods (CONSUMER PRODUCTS ACT)
- Cosmetics (FOOD & DRUG ACT)
- Food & Food Additives (FOOD & DRUG ACT)
- Drugs & Diagnostic Chemicals (FOOD & DRUG ACT)
- Pesticides (PEST CONTROL PRODUCTS ACT)
OTHER PRODUCTS NOT COVERED:

- Hazardous Waste
- Wood or Wood products
- Manufactured Articles
- Tobacco or Tobacco Products
WHMIS  CLASSES & SYMBOLS

Class A: Compressed Gas

Class B: Flammable & Combustible Material

Class C: Oxidizing Material

Class D, Division 1: Materials Causing Immediate & Serious Toxic Effects

Class D, Division 2: Other Toxic Effects

Class D, Division 3 Biohazardous Infectious Material

Class E: Corrosive Material

Class F: Dangerously Reactive Material
Class A: Compressed Gas

CHARACTERISTICS

- Gas inside cylinder under pressure
- Explosion hazard
- Often a fire hazard, too

Examples:
- aerosols, propane tanks, welding gas cylinders

“During tests ... aerosol can simulator, uncontained fireball ... 10 to 12 feet in diameter” when can ruptured!
Class B: Flammable & Combustible Material

CHARACTERISTICS

- Flammable (at room temperature)
- **Combustible**: burns when heated
- Explosion hazard

**Examples:**
- gasoline, glass cleaners
Class C: Oxidizing Material

**CHARACTERISTICS**

- Supports the oxidation of other materials
- Many oxidizers provide oxygen for a fire
- May burn skin and eyes on contact

**Examples:**
bleach, hydrogen peroxide
Class D, Division 1

Materials Causing Immediate & Serious Toxic Effects

CHARACTERISTICS

- Cause **immediate death** or serious injury in the body

- **Immediate** = symptoms occur within 15 minutes

Examples:

- rubbing alcohol, toluene
Repeated or long-term exposure may cause serious health concerns (chronic lung problems, liver or kidney damage, cancer, birth defects, sterility) or death...

May irritate eyes, skin, or respiratory system

Examples:
laundry products; liquid soaps
Class D, Division 3
Biohazardous Infectious Material

CHARACTERISTICS

- Microbiological agents (bacteria, viruses, toxins)
- Can cause serious illness or death

Examples:
anthrax; hepatitis
Precautions

- Wear proper protective equipment (ABSOLUTE MUST!!!)
- Isolate the area
- Disinfect area after handling
- Wash hands after handling (THOROUGHLY!)
Class E: Corrosive Material

CHARACTERISTICS

- **Burn** eyes and skin on contact
- **Burn** tissues of respiratory tract if inhaled

Examples:
- bleach, toilet bowl cleaner, vinegar, rust removers, strippers, drain openers
Class F:
Dangerously Reactive Material

CHARACTERISTICS

- Unstable; reacts dangerously to jarring, compression, exposure to light, heat or water
- Burn, explode or produce poisonous gases if mixed with incompatible materials

Examples:
styrene, vinyl chloride
WHMIS - LABELS

- SUPPLIER
- WORKPLACE
Supplier Label Requirements

MUST be on all controlled products received at workplaces in Canada

1. Product Identifier
2. Supplier Identifier
3. Risk Phrase(s)
4. WHMIS Symbol(s)
5. First Aid Statement(s)
6. Precautionary Statement(s)
7. Reference to an MSDS
8. Unique Border (Hatched)
9. Bilingual
**Workplace Label - REQUIREMENTS**

**NAME OF THE PRODUCT**
EXTREME FLOOR STRIPPER

**SAFE HANDLING INSTRUCTIONS**
WEAR GOGGLES AND RUBBER GLOVES

**MSDS STATEMENT**
Read MATERIAL SAFETY DATA SHEET

- There is no set format
- Label must be legible
A Workplace Label is required:

- on controlled products produced/used in the workplace
- to replace a Supplier Label that becomes illegible
- when a controlled product is transferred to another container*

*not required if the product is used completely or disposed of by the person decanting it WITHOUT ANYONE ELSE HAVING ACCESS
QUESTIONS?
M S D S  -  MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCTS AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Heavy Duty Detergent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer:</td>
<td>Enviro-Solutions Limited</td>
</tr>
<tr>
<td>Address:</td>
<td>120 Ebb Tide Ave, E, #100</td>
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SECTION II - INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
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<tbody>
<tr>
<td>Water</td>
<td>7732-20-8</td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
</tr>
<tr>
<td>Microbicidal</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
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</tr>
</tbody>
</table>

SECTION III - HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Route of Entry</th>
<th>Eye, skin contact, inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Health Effects</td>
<td></td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Eye, skin contact, inhalation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Eye, skin contact, inhalation.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Eye, skin contact, inhalation.</td>
</tr>
</tbody>
</table>

SECTION IV - FIRST AID MEASURES

<table>
<thead>
<tr>
<th>First Aid Measures</th>
<th></th>
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<tbody>
<tr>
<td>Eye Contact</td>
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<tr>
<td>Skin Contact</td>
<td></td>
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<tr>
<td>Ingestion</td>
<td></td>
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<tr>
<td>Inhalation</td>
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SECTION V - FIRE FIGHTING MEASURES

<table>
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<th>Fire Fighting Measures</th>
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<tbody>
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<td>Flammability</td>
<td></td>
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<tr>
<td>Hazards of Combustion Products</td>
<td></td>
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<tr>
<td>Means of Extinguishment</td>
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SECTION VI - ACCIDENTAL RELEASE MEASURES

<table>
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<th>Accidental Release Measures</th>
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<tbody>
<tr>
<td>Leak and Spills</td>
<td></td>
</tr>
<tr>
<td>Protection Precautions</td>
<td></td>
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</tbody>
</table>

SECTION VII - HANDLING AND STORAGE

<table>
<thead>
<tr>
<th>Storage</th>
<th>KEEP OUT OF REACH OF CHILDREN. Store in closed container. Store away from incompatible materials.</th>
</tr>
</thead>
</table>

SECTION VIII - EXPOSURE CONTROL/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Personal Protective Equipment</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>Eye Protection</td>
<td></td>
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<tr>
<td>Respiratory Protection</td>
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SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical and Chemical Properties</th>
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<tbody>
<tr>
<td>Viscosity</td>
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<tr>
<td>Specific Gravity</td>
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<tr>
<td>Evaporation Rate</td>
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</table>

SECTION X - STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Stability and Reactivity</th>
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<tbody>
<tr>
<td>Reactivity</td>
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SECTION XI - TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Toxicological Information</th>
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<tbody>
<tr>
<td>Acute Toxicity</td>
<td></td>
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SECTION XII - ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Ecological Information</th>
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<tbody>
<tr>
<td>Biological Data</td>
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SECTION XIII - DISPOSAL CONSIDERATIONS

<table>
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<tr>
<th>Disposal Considerations</th>
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<tr>
<td>Product and All</td>
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SECTION XIV - TRANSPORTATION

<table>
<thead>
<tr>
<th>Transportation Information</th>
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<tbody>
<tr>
<td>UN Number</td>
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SECTION XV - REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Regulatory Information</th>
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<tbody>
<tr>
<td>DOT</td>
<td></td>
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<tr>
<td>IATA</td>
<td></td>
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<tr>
<td>IMDG</td>
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Date: February 1, 2021
Prepared by: Technical Services Group
Telephone: (418) 440-4217

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Material Safety Data Sheets

* ACCURATE INFORMATION about the product

* ENGLISH & FRENCH

* PROTECT YOURSELF
MSDS must be

* **Accessible to ALL** in the workplace
* **Up-to-date**
* Renewed at least every 3 years
* May be accessed on the Internet

WHERE ARE YOURS KEPT?
FOUR WAYS TO CAUSE YOU HARM

ABSORPTION

INGESTION

INHALATION

PUNCTURE
WHMIS TERMS

**LC50** – AMOUNT OF CONTROLLED PRODUCT IN AIR FOR INHALATION

- Amount that kills 50% OF TEST POPULATION

**LD50** – MIXTURE OR SOLUTION OF CONTROLLED PRODUCT FOR OTHER ROUTES OF ENTRY (normally ingestion)

- Amount that kills 50% OF TEST POPULATION

LC50 and LD50 values provide a rough indication of acute toxicity
WHMIS TERMS

FLASH POINT - temperature at which a flammable or combustible product will ignite

THRESHOLD LIMIT VALUE - amount of an airborne product that most persons can be exposed to without causing adverse health effects

These are legal limits
Section 1: Product Identification & Use
Section 2: Hazardous Ingredients
Section 3: Physical Data
Section 4: Fire & Explosion Data
Section 5: Reactivity Data
Section 6: Toxicological Information
Section 7: Preventive Measures
Section 8: First Aid Measures
Section 9: Preparation Information
Section 1: Product Identification & Use

- Product name/chemical name
- Product use
- Name, address, phone - manufacturer or supplier
- Emergency contact
Section 2: Hazardous Ingredients

- Chemicals in product
- Percentage of each
- Chemical Abstract #s
- LD50 & LC50
Section 3: Physical Data

- How material behaves in use
- State - solid, liquid, gas
- Appearance & odor
- PH, boiling & freezing point
- Specific gravity, vapour density
Section 4: Fire & Explosion Data

- Flammability, flash point
- Explosion data
- Fire fighting methods
- Hazardous products by combustion
- Sensitivity to impact and static
Section 5: Reactivity Data

- Reactivity & incompatibility
- Stability
- Hazardous decomposition products
Section 6: Toxicological Information

- Routes of entry into the body
- Effects of acute (short term) exposure
- Effects of chronic (long term) exposure
- Legal exposure limits (TLVs)
Section 7: Preventive Measures

- Safe use & handling of the product
- Personal Protective Equipment
- Leak, spill, disposal procedures
- Storage, special shipping instructions

If you follow the advice in this section, you should be well protected!
Section 8: First Aid Measures

- Immediate treatment for overexposure
- Student Health Services Clinic
- EKM Health Centre
Section 9: Preparation Information

- Preparer of the MSDS and phone #
- Preparer location
- When MSDS was prepared
- Renewed every 3 years or if changed
QUESTIONS?
A new **Globally Harmonized System (GHS)** is scheduled to replace WHMIS in 2008

A new **Hazardous Material Information System (HMIS)** will be introduced
HMIS

0 - Insignificant
1 - Slight
2 - Moderate
3 - High
4 - Extreme

Personal Protection: symbols or letter
Hazardous Materials Identification System

HAZARD INDEX

4 Severe Hazard
3 Serious Hazard
2 Moderate Hazard
1 Slight Hazard

PERSONAL PROTECTION INDEX

A
B
C
D
E
F

G + H + I + J + K + L + M + N + O + P + Q + R + S + T + U + V + W + X

Consult your supervisor or S.O.P. for special handling directions

Safety Glasses
Splash Goggles
Face Shield & Eye Protection
Gloves
Boots

Synthetic Apron
Full Suit
Dust Respirator
Vapor Respirator

Dual & Vapor Respirator

Full Face Respirator
Airline Hood or Mask

AMERICAN LABELMARK, Chicago, IL 60646  NC-ECLU

HMIS® © National Paint & Coatings Association
Safety at Work and at Home

✓ Know the chemicals in your building and at home

✓ If they are controlled products, how will you access a current MSDS?

✓ What are the hazards and precautions?

✓ Don’t mix chemicals unless you are trained to do so!

Visit your Acadia H&S Website!
FINAL QUESTIONS?