Hazardous Communication Training Program

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New Types of Martial Arts

- Okidoki
- Shiitake
- Upsidazi
- No-Kando
- Tung-pi
- Deja-fu

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Introduction

- By The End Of This Course, participants will be able to:
  - List general hazard classifications
  - Identify hazards by container label information
  - Explain container Labeling Requirements
  - Locate and gather information from MSDS

    (Material Safety Data Sheets)

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Hazardous communication also known as Hazcomm is the

“RIGHT TO KNOW” Program

This program is <u>not</u> intended to tell you how to do your jobs.

It is <u>not</u> a <u>technical</u> chemical safety course.

It is Hazard Communication

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Introduction

- Hazard Communications is a two way street:
  - You have a right to receive information
  - You have the responsibility to provide information

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Regulating Authority

- OSHA 29 CFR part 1910-1200
- OSHA 29 CFR Part 1900
- Superfund Amendments and reauthorization act of 1986 (SARA)

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General Hazard Classification

- Corrosive
  - Acids
  - Bases
- Toxic
- Flammable liquid
- Oxidizer/Reactive
- Compressed gas
- Explosive
- Radioactive
- Carcinogen

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Flammable Liquids

- Low Flashpoint
- Will Burn if Ignited With a Flame or Spark

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Health Hazards

- Corrosives/Oxidizers
  - Injuries to tissue or skin
- Toxics/Flammables/Compressed gasses
  - Damage to Respiratory System
- Explosives
  - Over Pressure
  - Flying Objects

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Health Hazards

Radioactive

- Radiation Sickness, Cancer

Carcinogens

- Cancer

Container Label Information

- Safe Handling/Storage Procedures
- Health/Physical Hazard(s)
- Primary Hazard(s)
- First aid treatment
- Manufacturer
- Identity

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Secondary Containers

Are not required to be labeled if used **Immediately** by **one person.**

Must be labeled if used by **more than one person**.

Must be labeled if used/left for **more than one shift**.

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Safety Data Sheet (SDS)

29 CFR 1910.1200. Standard

Prepared by a chemical's manufacture or importer to provide detailed information about the chemicals characteristics, potential hazards and methods for safe use, handling, and storage of the material.

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Safety Data Sheets

Answer a series of four questions

1. What is the material and what do I need to know?
2. What should I do If a hazardous situation occurs?
3. How can I prevent hazardous situations from occurring?
4. Is there any other useful information about this chemical?

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Safety Data Sheet Information (MDS)

Section I	**Identification of Product**
Section II	**Hazardous Ingredients**
Section III	**Physical Data**
Section IV	**Fire and Explosion Hazard Data**
Section V	**Health Hazard**

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Section VI **Reactivity Data**

Section VII **Spill and Disposal procedures**

Section VIII **Protection Information**

Section IX **Handling and Storage precautions**

Section X **Miscellaneous Information**

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SDS

- "MSDS are written by three people:
  - Half by an engineer
  - Half by a doctor
  - And half by a lawyer"

MATERIAL SAFETY DATA SHEET

J. T. Baker Chemical Co., 222 Red School Lane, Phillipsburg, N.J. 08865

SECTION I. IDENTIFICATION OF PRODUCT

CHEMICAL NAME	FORMULA
Acetic Acid, Glacial	CH_3COOH
SYNONYM OR CROSS REFERENCE: Methane carboxylic acid; Ethanoic Acid	CAS NO: 64-19-7

SECTION II. HAZARDOUS INGREDIENTS

MATERIAL	NATURE OF HAZARD

SECTION III. PHYSICAL DATA

BOILING POINT 240°C	MELTING POINT Freezing point 62°F.
VAPOR PRESSURE @ 20°C. 11.3mm	SPECIFIC GRAVITY 1.05
VAPOR DENSITY (AIR=1) 2.07	PERCENT VOLATILE BY VOLUME (%)
WATER SOLUBILITY Soluble	EVAPORATION RATE (_____ = 1)

APPEARANCE
Clear, colorless liquid with strong pungent odor of vinegar.

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (method used)	FLAMMABLE LIMITS @ 212°	Lower	Upper
103°F. (closed cup)		5.4%	16%

FIRE EXTINGUISHING MEDIA: Water spray, dry chemical or carbon dioxide

SPECIAL FIRE-FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARD
Gives off flammable vapor above its flash point.

SECTION V. HEALTH HAZARD

THRESHOLD LIMIT VALUE
10 ppm orl-rat LD_{50}: 3310 mg/kg

HEALTH HAZARDS
Causes severe burns. POISON May be fatal if swallowed. Harmful if inhaled.

FIRST AID PROCEDURES Call a physician. If swallowed, do not give emetics. Give tap water, milk or milk of magnesia. Give whites of eggs beaten with water. If inhaled, remove to fresh air. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before re-use.

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CHEMICAL NAME

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		Can react vigorously with oxidizing material
	STABLE	X	

INCOMPATABILITY (materials to avoid)

Carbonates; Hydroxides; many oxides and phosphates, etc.

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL AND DISPOSAL PROCEDURES

SPILLS Eliminate all sources of ignition. Cover contaminated surfaces with soda ash or sodium bicarbonate. Mix and add water if necessary. Scoop up slurry and wash neutral (make litmus test) waste down drain with excess water, if local environmental regulations permit.

DISPOSAL Dispose through a waste treatment plant if local environmental regulations permit.

SECTION VIII - PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)

Self-contained breathing apparatus

VENTILATION	LOCAL	SPECIAL
	X	
	MECHANICAL (general)	OTHER
	X	

PROTECTIVE GLOVES	EYE PROTECTION
Rubber gloves	Face shield

OTHER PROTECTIVE EQUIPMENT

Approved working clothes

SECTION IX - HANDLING AND STORAGE PRECAUTIONS

STORAGE & HANDLING

Keep away from heat and open flame. Keep in tightly closed container at a temperature above 17°C. (63°F.). If frozen, thaw by moving closed container to warm area. Loosen closure cautiously.

SECTION X - MISCELLANEOUS INFORMATION

Do not get liquid or vapor in eyes, on skin, on clothing. Avoid breathing vapor. Wash thoroughly after handling.

Date issued:_____ Revision:_____ Approved by R. M. Mitchell

Manager, Quality Assurance

Work Area Chemical Storage

- Limit amounts kept in work areas

- Store according to chemical classification

- Do <u>not</u> store alphabetically

- DO store in closed cabinets

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Work Area Chemical Storage

- Store closed to floor rather than above head level

- If stored on open shelves, keep to rear rather than on front edge

- Do Not Store inside hoods

- If not being used, get rid of it!

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Signs and symptoms of exposure

Consider routes of entry and length of exposure;

- External:

Redness

Swelling

Itching

Pain

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Routes of Entry/Exposure

-Internal

Nausea

Lightheadedness

Headaches

Difficulty Breathing

Heart Palpitations

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Acids/Bases

Acids: BURN upon contact with skin & cause immediate pain

- **Floor strippers**
- **Brick cleaner**
- **Graffiti remover**
- **Scale and lime removers**

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Bases: Do not cause immediate pain, but when they do it is worse then acids

* **Glass Cleaner**
* **Drano**
* **Soaps**

Emergency Procedure

Chemical Spill

- **DO NOT attempt to contain or clean spill**

- **DO NOT pull fire alarm**

- **IMMEDIATELY go to a SAFE area and call the emergency number for your facility**

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Safe Work Procedures

* Written Procedures
* Container Labels
* Personal Protective Equipment (PPE)
* Equipment Use
* Housekeeping
* Storage
* Horseplay
* Personal Habits

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Target Organ Hazards

Type: **Hepotoxins**

Affect: **Liver Damage**

Chemical: **Carbon Tetrachloride; Nitrosamines**

Symptom: **Jaundice; Liver Enlargement**

Type: **Nephrotoxins**

Affect: **Kidney Damage**

Chemical: **Haloginated Hydrocarbons, Uranium**

Symptom: **Edema; Proteinuria**

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Type: **Neurotoxins**

Affect: **Nervous System Damage**

Chemical: **Mercury; Carbon Disulfide**

Symptom: **Narcosis; Behavioral Changes**

Type: **Agents That Act On The Blood**

Affect: **Decrease Hemoglobin Function; Deprive Tissues of Oxygen**

Chemical: **Carbon Monoxide; Cyanides**

Symptom: **Cyanosis; Loss of Consciousness**

Type: **Agents That Damage The Lungs**

Affect: **Iritate Oor Damage Pulmonary Tissue; Cancer**

Chemical: **Silica; Asbestos**

Symptom: **Cough; Shortness of Breath; Tightness in chest (These symtoms occur many years after exposure)**

Type: **Reproductive Toxins**

Affect: **reproductive Capabilities;**

(Mutagens – Chromosomal Damage)

(Teratoggens – Fetus Damage)

Chemical: **Lead; DBCP**

Symptom: **Sterility; Birth defects**

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Type: **Cutaneous Hazards**

Affect: **Dermal Layer of The Body**

Chemical: **Ketones; Chlorinated Compounds**

Symptom: **Rashes; Irritation**

Type: **Eye Hazards**

Affect: **Eye or Visual Capacity**

Chemical: **Organic Solvents; Acids**

Symptom: **Conjuntivitis; Corneal Damage**

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Chemicals & the Zoo

- There are two types of zoos
  - Ones where the animals are in the cage and you walk around
  - Ones where you stay in a cage and the animals walk around
- Chemicals are the same as animals

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Chemicals & Zoos

- Chemicals in the cage, and you walk around
  - Keep containers closed
  - Store so they won't spill

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Chemicals & Zoos

- You're in the cage and the chemicals are out

This is called PPE or Personal Protective Equipment and it acts like the "cage" that keeps the chemicals off of you.

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PPE

Types of PPE are:

- Gloves
- Aprons
- Goggles
- Face Shields

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PPE

Where do you find out what PPE to use?

- Your Supervisor
- EHSO
- MSDS

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PPE

EYES:

- ALWAYS wear a face shields when mixing chemicals

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Hands

Different gloves are needed for different jobs. With a few very specail and expensive exceptions, one glove will not protect against all types of chemicals.

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Body

- Always use a rubber or plastic apron when using corrosive material
- Remove any contaminated clothing immediately. You might want to keep a set of sweats in your locker.