6th Advanced Program to train CPQIH

Group 5

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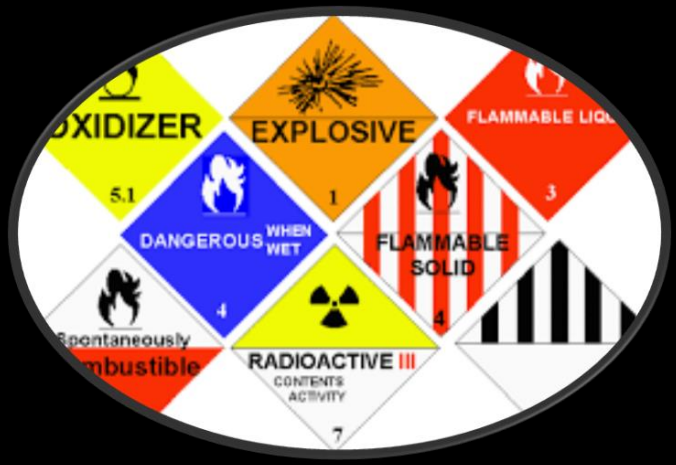
Plan for this presentation

- **Defining** hazardous material
- **5 objective elements**
  - – identifying
  - - sorting, labelling, handling, storage, transporting, disposal
  - - radioactive materials
  - - managing spills
  - -training staff

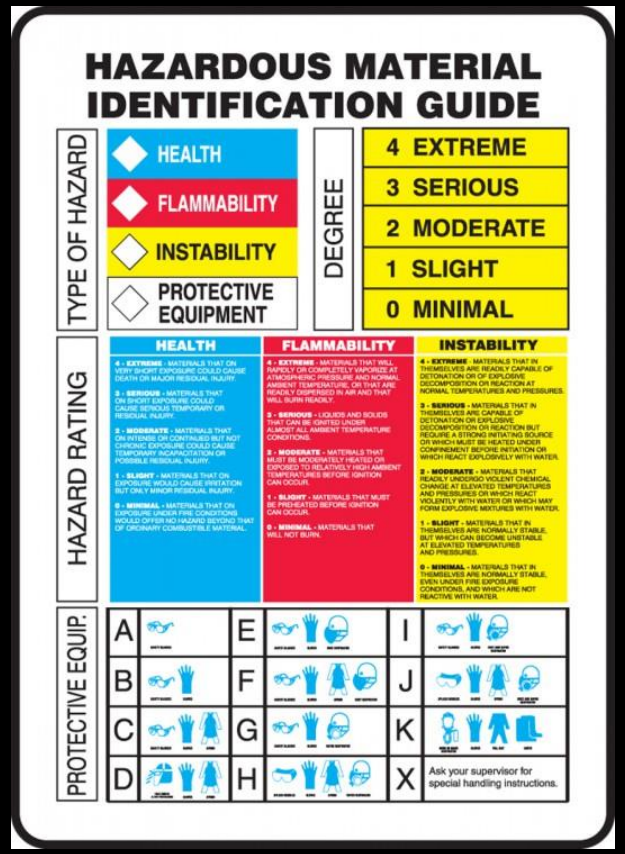
Definition of Hazardous material

- item or agent (biological, chemical, radiological, physical)
- **potential harm to humans, animals, environment**
- either by itself or through interaction



Objective A

Ensure patient, staff remain safe from Hazardous material



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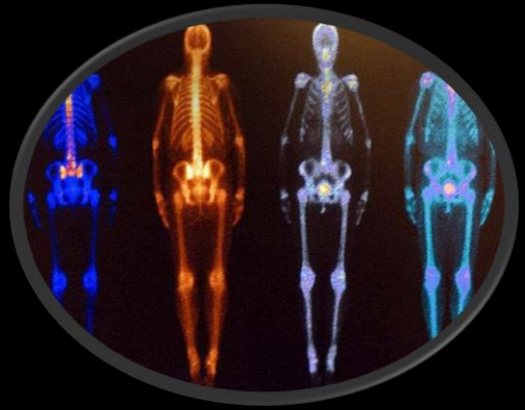
Identify the hazardous material in the organisation



Evidences

- SDS
- Staff training

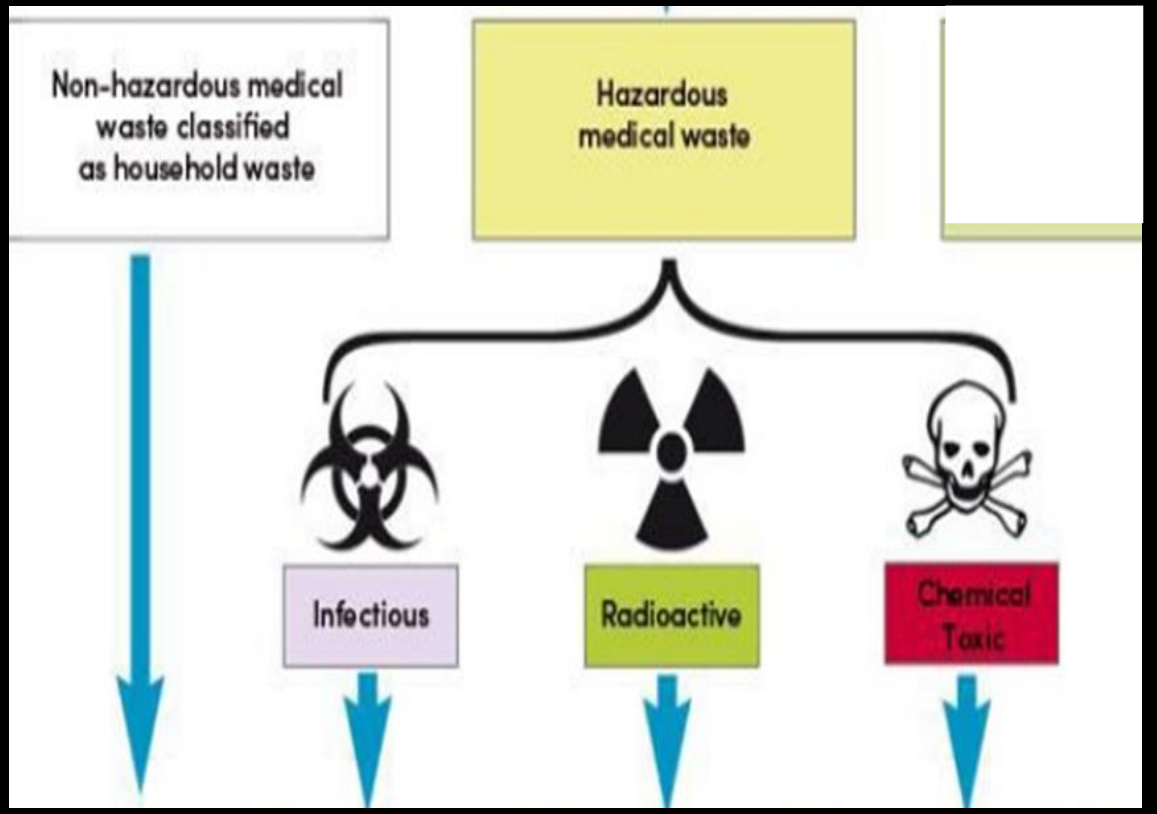
Objective B

Implements process for sorting, labelling, handling, storage, transport & disposal of hazardous material

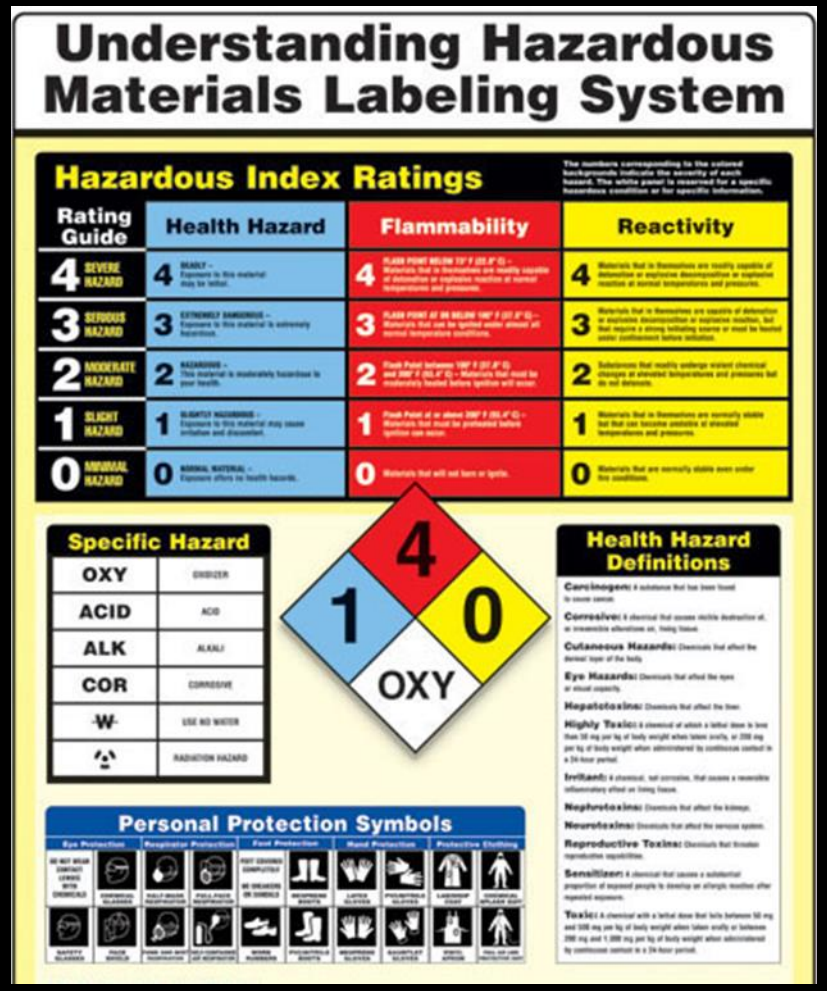
Requirements

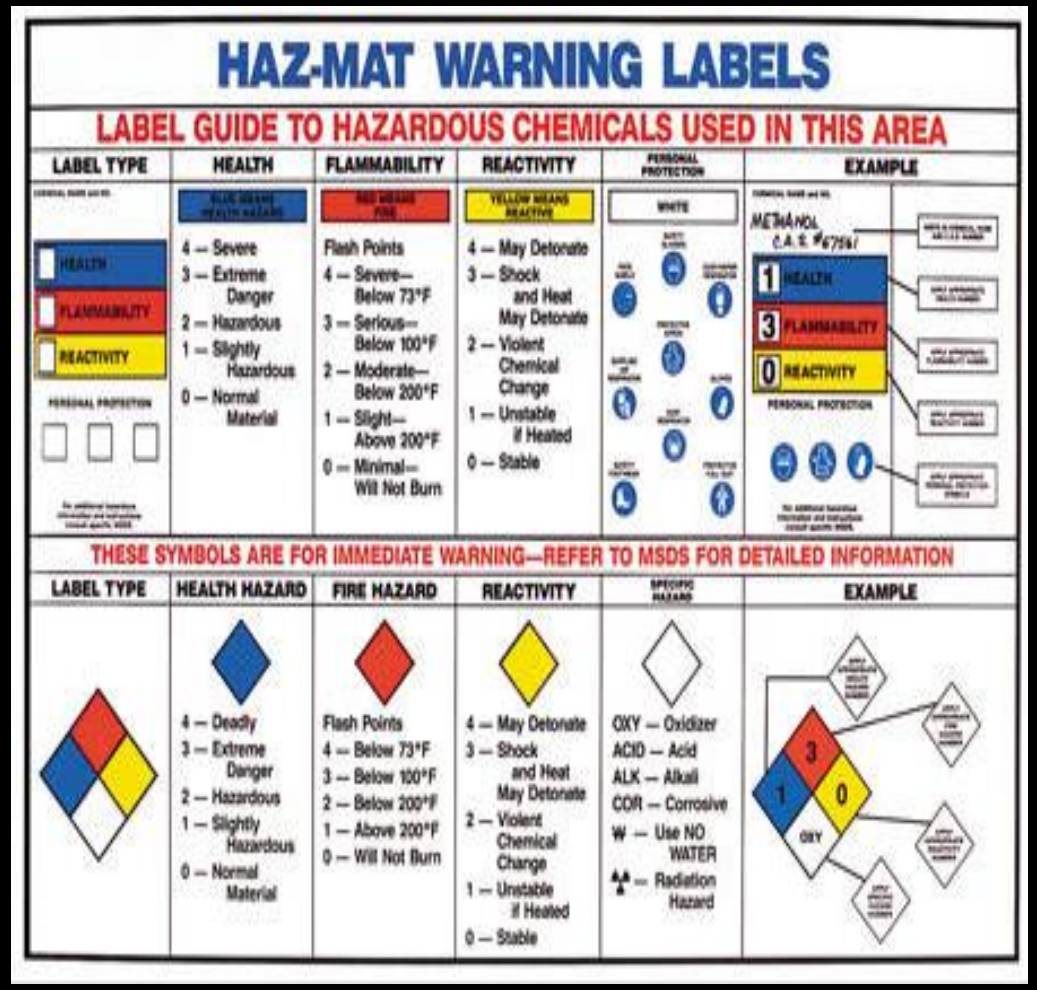
- organisation shall conduct an exercise of **hazard identification and risk analysis (HIRA)** associated with handling of hazardous materials
- necessary steps to eliminate or reduce such hazards and associated risks

Sorting


Non-hazardous medical waste classified as household waste
Hazardous medical waste
Infectious
Radioactive
Chemical Toxic

Labelling





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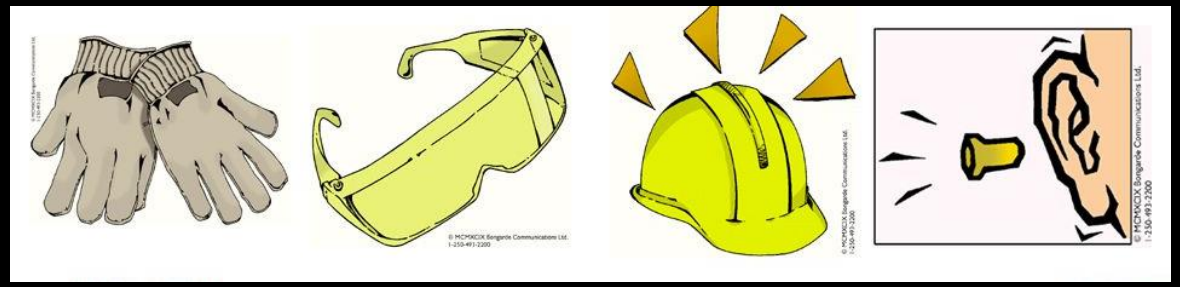
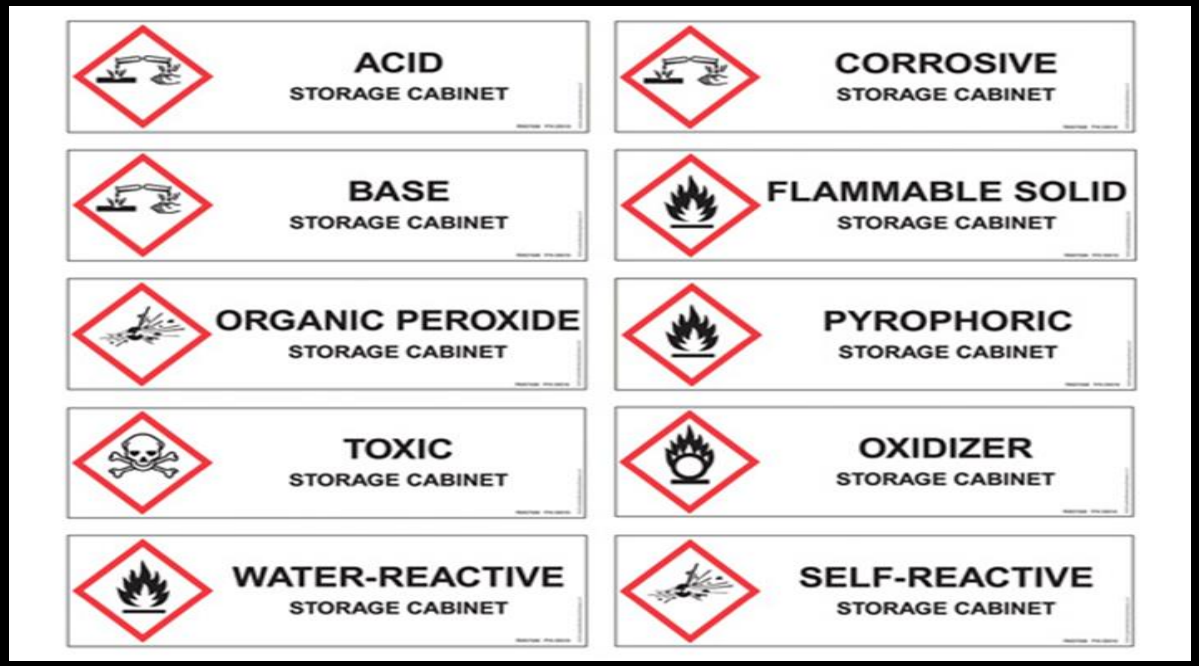
Handling


HAZARDOUS
WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY
AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.
GENERATOR'S INFORMATION:
NAME
ADDRESS
PHONE
CITY
STATE
ZIP
EPA ID NO.
MANIFEST TRACKING NO.
ACCUMULATION START DATE
EPA WASTE NO.
HAZARDOUS WASTE, SOLID, N.O.S.
NA3077
HANDLE WITH CARE!




WARNING
Hazardous materials storage area

Storing


ACID
STORAGE CABINET
CORROSIVE
STORAGE CABINET
BASE
STORAGE CABINET
FLAMMABLE SOLID
STORAGE CABINET
ORGANIC PEROXIDE
STORAGE CABINET
PYROPHORIC
STORAGE CABINET
TOXIC
STORAGE CABINET
OXIDIZER
STORAGE CABINET
WATER-REACTIVE
STORAGE CABINET
SELF-REACTIVE
STORAGE CABINET

MATERIAL SAFETY DATA SHEET - 9 SECTIONS

SECTION 1 - PRODUCT INFORMATION

Product Name
Product Use
Manufacturer's Name
Physical and Mailing Address
Emergency Contact Phone Number

WHMIS Classification (optional)

Supplier's Name
Physical and Mailing Address
Emergency Contact Phone Number

SECTION 2 - HAZARDOUS INGREDIENTS

Hazardous Ingredients (very specific)

SECTION 3 - PHYSICAL DATA

Physical State (What does it look like? Is it a liquid, gas, or solid?)
What happens to it under a variety of circumstances? (i.e. heat, freezing, dropping, etc.)
Flammability and how to extinguish. Includes a wide variety of details concerning how easily this product

SECTION 4 - FIRE AND EXPLOSION DATA

will ignite / explode and how to deal with it.
How stabile is this product?

How it reacts under various conditions.

SECTION 5 - REACTIVITY DATA

Incompatibility with other substances.

Hazardous Decomposition Products

Information about how the product affects and enters the body. Immediate affect. Long term toxic affect.

SECTION 6 - TOXICOLOGICAL PROPERTIES

Exposure limits. In summery, immediate and long term affects to the human body.

SECTION 7 - PREVENTIVE MEASURES

Personal Protective Gear; ventilation, etc.; leak and spill info; waste disposal; handling and storage; special shipping instructions

SECTION 8 - FIRST AID MEASURES

Information for immediate first aid treatment. Usually always ends with "contact a Doctor"

SECTION 9 - PREPARATION INFORMATION / *Who prepared this and contact info*

Health	1
Fire	1
Reactivity	0
Personal Protection	C

Material Safety Data Sheet
Ethylene glycol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ethylene glycol

Catalog Codes: SLE1072

CAS#: 107-21-1

RTECS: KW2975000

TSCA: TSCA 8(b) inventory: Ethylene glycol

CI#: Not available.

Synonym: 1,2-Dihydroxyethane; 1,2-Ethanediol; 1,2-Ethandiol; Ethylene dihydrate; Glycol alcohol; Monoethylene glycol; Tescol

Chemical Name: Ethylene Glycol

Chemical Formula: HOCH2CH2OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: 1-800-901-7247
International Sales: 1-281-441-4400

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ethylene glycol	107-21-1	100

Toxicological Data on Ingredients: Ethylene glycol: ORAL (LD50): Acute: 4700 mg/kg [Rat]. 5500 mg/kg [Mouse]. 6610 mg/kg [Guinea pig]. VAPOR (LC50): Acute: >200 mg/m 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Non-mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

MATERIAL SAFETY DATA SHEET
MSDS FOR HOT MIX ASPHALT

DATE REVISED: June 11, 2009

SECTION 1 - MANUFACTURER'S INFORMATION	
Manufacturer: **Pike Industries, Inc.** **3 Eastgate Park Road** **Belmont, NH 03220**	**Information Telephone:** **(603) 527-5100** **24 Hour Emergency Phone Number:** **Chemtrec 1-800-424-9300**
Product Trade Name and Synonyms: HOT MIX ASPHALT **(Asphalt Concrete, Black top, Bituminous Concrete)**	
Date Prepared: December 1, 2000	**Signature of Preparer:**

SECTION 2 - INGREDIENTS/IDENTITY INFORMATION
Ingredient: Asphalt (Petroleum) **PG 64-22 PG 58-28 PG 64-28** **Percent:** <4 – 7% **CAS Number:** 8052-42-4 **OSHA PEL:** N/A **ACGIH TLV:** 5 MG/M3 (Fume)
Ingredient: Aggregate (Crushed Stone, Sand, Gravel) **Percent:** >93 – 96% **CAS Number:** N/A **OSHA PEL:** 15 MG/M3 TDUST (MFR) **ACGIH TLV:** 10 MG/M3 (MFR)

SECTION 3 - PHYSICAL /CHEMICAL CHARACTERISTICS			
SOLUBILITY IN WATER:	N/A	**% VOLATILE (By Volume) AT 68° F:**	N/A
EVAPORATION RATE:	N/A	**SPECIFIC GRAVITY:**	2.275 - 2.5000
APPEARANCE AND ODOR: Black - Brown Sand and Stone Mixture with Petroleum (Asphaltic) Odor.			

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA			
FLASHPOINT: (Method Used)	**> 450°F Minimum COC**		
FLAMMABLE LIMITS:	**LEL:** N/A	**UEL:**	N/A
EXTINGUISHING MEDIA:	**CO_2, Dry Chemical, Foam**		
SPECIAL FIRE FIGHTING PROCEDURES: Wear NIOSH/MSHA approved SCBA & Full Protective Equipment (FP N)			
Unusual Fire and Explosive Hazards: Do not heat above flash point.			

Transporting

- Avoid patient/crowded areas
- Avoid using lifts meant for patients and/or movement of sterile equipment
- Selection of time important-Select time of minimum movement (Not while doctors are on rounds; Not during visiting hour)
- Preferably use the hospital ramp
- Ergonomics to be taken into consideration: avoid lifting, prefer trolleys
- Waste bags should be sealed or tied properly
- Hazardous and non-hazardous waste should be carried in separate vehicles

Table. 8.3

Colour code	*Hazardous Substance (Number index)*
Orange	Explosives, Compressed gas (1)
Green	Non flammable (2)
Red	Flammable
White	Poisonous
White and Red strips	Flammable solid
Yellow	Peroxides
White	Peroxides
Yellow and magenta	Infections
White and Black	Corrosive

Transporting


MEDICAL WASTE
SEGREGATION CHART
SHARPS
Red Sharps Container
✓ Needles
✓ Ampules
✓ Broken Glass
✓ Blades
✓ Razors
✓ Staples
✓ Trocars
✓ Guide Wires
✓ Other Sharps
BIOHAZARD
Red Container or Red Liner in Container
✓ Infectious Waste
✓ Blood Products (albumin.etc)
✓ Contamminated Personal Protective Equipment (PPE)
✓ IV Tubing
✓ Cultures, Stacks
TRACE CHEMO
Yellow Container
✓ Empty vials, ampules
✓ Empty Syringes, Needles
✓ Empty IVs
✓ Gowns
✓ Gloves
✓ Tubing
✓ Aprons
✓ Wipes
✓ Packaging
RCRA HAZARD
Black Container
✓ Hazardous meds (RCRA)
✓ Half/Partial doses (RCRA)
✓ Hazardous bulk meds
✓ P-listed drugs, packaging
✓ Bulk chemo
✓ Pathological Waste (Incineration Only)
PHARMACEUTICAL
Blue Container
✓ Pills
✓ Injectables
✓ Antibiotics
RADIOACTIVE
Shielded Containers with Radioactive Symbol
✓ Fluorine-18 (F-18). 110 minutes half-life.
✓ Technetium-99 (T-99m). 6 hours half-life.
✓ Iodine-131 (I-131). 8 days half-life.
✓ Strontium-89 (Sr-89). 52 days half-life.
✓ Iridium-192 (Ir-192). 74 days half-life.
✓ Cobalt-60 (Co-60). 53 years half-life.
BIOMEDICAL WASTE SOLUTIONS
Download this Printable Chart At
www.BioMedicalWasteSolutions.com/Medical-Waste-Disposal/

Disposal


BIOHAZARD
AUTOCLAVE BAG


HOW IS HAZARDOUS WASTE
DISPOSED?
FUELS BLENDING
azardous and non-hazardous wastes are
lended into a fuel source in cement kilns,
ther manufacturers, or power plants.
SOLIDIFICATION
The waste is mixed with cement
to immobilize contaminants.
MICRO-ENCAPSULATION
The waste is mixed with the encasing
material before solidification occurs.
INCINERATION
Performed properly, incineration destroys
the toxic organic constituents and reduces
LANDFILL
Prepared sites where non-liquid
hazardous waste are deposited for
MACRO-ENCAPSULATIO
An encasing material is poured over and
around a larger mass of waste, enclosing it

Improper disposal -can lead to dangerous situations:

- Hospital staff- risk of infections
- Immunocompromised patients-HIV, hepatitis B, C.
- Persons handling wastes.
- Poor waste management - unscrupulous persons will recycle materials from waste.
- Organic portion ferments, fly breeding.
- Development of resistant strains by microorganisms.

Evidences

- SDS, HIRA, staff training

Objective C

- Awareness about **rules and regulations** such as the Atomic Energy Act
- **Norms issued** by Atomic Energy Regulatory Board (AERB) and the directives from the Health Physics Division of Bhaba Atomic Research Centre (BARC).
- **http://aerb.gov.in**

Evidence

- Licence

Objective D

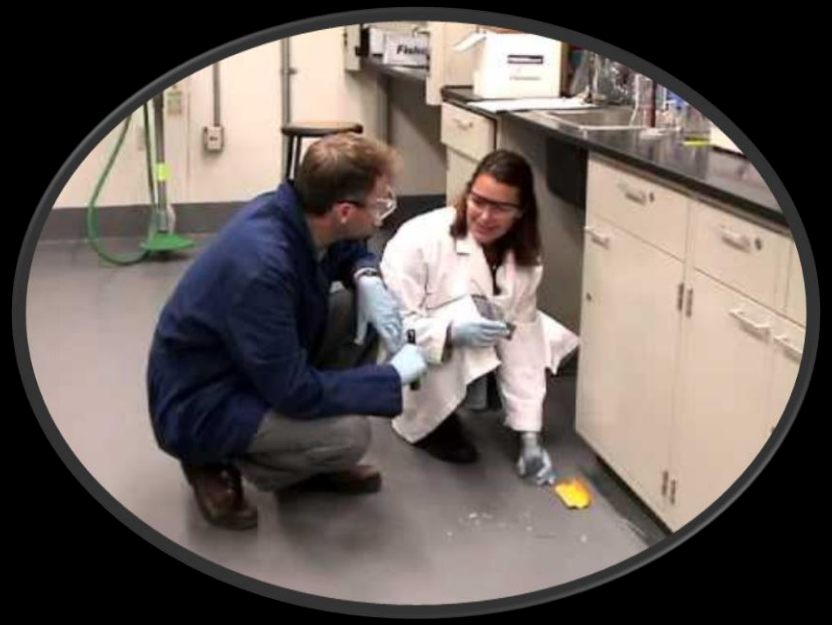
- Organisation could have a HAZMAT kit(s) as part of PPE for handling spills.

Evidence

- Availability of Hazmat kits, PPES
- Staff training

Objective E

- Staff are educated and trained for handling of hazardous materials



- Evidence: staff training

- The end

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