Art & industrial Technology

Jackson County Central Public Schools

Employee-Right-to-Know Overview

- The ERK Coordinator for your district is Mark Steffen.
- The ERK standard requires employers to make employees aware of hazardous substances and/or agents that may be encountered at work.

Employee-Right-To-Know

• MN Statutes Chapter 5206

- Similar to OSHA Hazard Communication
- MN adopted Federal Hazard Communications OSHA 29 CFR 1910.1200 with some additions
- Employee Right-to-Know Act requires employers to make employees aware of hazards that may be encountered at work:

Written Program

| Include | Be | Provide | |
|---|--|---|--|
| The program must include: Identification of exposed employees Inventory of hazardous substances and agents Safety Data Sheets Training components Training records | Program must be reviewed and updated annually. | Employer must provide staff training each year. | |

Industrial Technology Hazards

Common Chemicals Found in Industrial Technology

- Glues
- Paints
- Stains
- Thinners
- Linseed Oil
- Belt Dressing
- Oil
- Spray Adhesive
- WD-40 Aerosols











Common Industrial Technology Hazards

- <u>Wood dust</u> can cause allergic reactions such as contact dermatitis, causes asthma flare-ups, and is considered carcinogenic.
- <u>Solvents</u> can cause irritation of eyes, nose, throat. Prolonged exposure could cause reproductive or CNS problems. Usually are extremely flammable.
- <u>Noise</u> can cause long term hearing damage.
- <u>Electrical</u> can cause shock injury or even death.

OSHA Machine Guarding Requirements – 1910.212

- All hazards associated with a machine shall be guarded including:
 - Point of Operation
 - Power Transmission Apparatus
 - Other Moving Parts
 - Ejected Chips/Debris
- A guarding device must prevent the operator from putting any part of their body in the danger zone during operation.
- If a guard is missing or damaged, tag out the machine and inform supervisor

Types of Machine Guards:

- Fixed
- Adjustable
- Self-adjusting
- Interlock



Some Additional Requirements

- Grinders have tool/work rest adjusted within ½inch from the wheel; and tongue guard is adjusted within ¼-inch from the wheel.
- Equipment must have grounded plugs or be double-insulated; no cord damage is present.
- Emergency stops are present and must be located within the operator's reach.
- Anti-Automatic Restart Protection (a.k.a. Poweroutage protection) is present
- Chuck keys are spring-loaded.



Compressed Gas

- Gas cylinders should be labeled with contents and whether empty/full
- Gas cylinders should be chained to the wall
- Fuel (acetylene) and oxygen cylinders are to be stored at least 20 feet away from heat sources or combustible materials or with a fire rated wall in between them, unless being used



Welding Hazards

- Use proper gloves, apron, and goggles/face mask
- Always weld behind a curtain or behind closed doors (not in front of others)
- Ensure adequate ventilation is available in the welding area
- Supervision of students while welding is a must

Art Hazards

Hazards Commonly found in ART departments

Jewelry Making

- Metals could cause acute or chronic lung irritation, prolonged exposure could cause cancer.
- Acids could cause eye irritation/damage, dermatitis, acute or chronic lung damage, chemical burns to skin.
- Fluorides irritating to lungs and eyes, corrosive to teeth.
- Heat could cause thermal burns, heat stress.

Hazards Commonly found in ART departments

<u>Ceramics</u>

- Clay inhalation of dust could cause respiratory irritation.
- Glazes effects of inhalation or skin contact range from causing irritation to causing lung cancer (if contain toxic metals).
- Kiln firing effects of inhalation of kiln fumes range from eye irritation to causing lung cancer (if contain toxic metals).

Hazards Commonly found in ART departments

Painting

- Pigments and oil paints many are highly toxic and may cause systemic poisoning. Long term exposure to manganese can cause nerve damage. Chronic exposure to lead can cause toxic build-up in body.
- Solvents could cause skin or respiratory irritation. Prolonged exposure could cause kidney damage or cardiac arrest.
- Acrylic paints or epoxy resins cause skin and respiratory allergies. Ammonia can be irritating to the eyes.

The Art and Creative Materials Institute, Inc. (ACMI) Seals:





The AP (Approved Product) Seal identifies art materials that are safe and that are certified in a toxicological evaluation by a medical expert to contain no materials in sufficient quantities to be toxic or injurious to humans, including children, or to cause acute or chronic health problems.

The CL (Cautionary Labeling) Seal identifies products that are certified to be properly labeled in a program of toxicological evaluation by a medical expert for any known health risks and with information on the safe and proper use of these materials. This Seal appears on only a small percentage of adult art materials in ACMI's certification program and on none of the children's materials. Products with this seal are not hazardous if used correctly. It is important to read the product label in full before opening a product that has the CL Seal. These products should never be given to children in grade 6 or lower or anyone with a physical or mental handicap who is unable to read and understand safety labeling on packages.



Health Effects of Workplace Hazards

Harmful Physical Agents

| Physical agents may also be present in the workplace | | | | |
|--|---------|--|--|--|
| Heat | | | | |
| Noise | | | | |
| Vibrations | | | | |
| Ionizing radiatio | n | | | |
| Non-ionizing rad | liation | | | |

Health Effects

Acute

- Generally manifests quickly (either immediately or within days after an exposure).
- An example would be a chemical spill on skin or splash in the eyes. The acute effect is immediate irritation or corrosion of the skin or eyes.

Chronic

- Usually takes longer to develop through repeated exposures.
- May target certain organs (i.e. asbestos targets the lungs).
- An individual may not be able to sense the exposure.



Routes of Entry

Dermal or Skin

- Absorption
- Direct contact
- Open wound

Inhalation

• Throat and lungs

Ingestion

• Mouth / gastrointestinal tract



Safety Data Sheets

- Manufacturer's recommendation on how to use the chemical safely.
- <u>All</u> chemicals should have an SDS available. Each time a new chemical is acquired, the SDS must be added to the SDS inventory.
- SDSs are available in each department.

Role of the SDS

- Primary Use: The Workplace
- The SDS should provide comprehensive information about a chemical substance or mixture.
- Employers and employees use the SDS as a source of information about hazards and to obtain advice on safety precautions prior to use of chemicals.

Safety Data Sheets

- 1. Product identification
- 2. Hazard identification
- 3. Composition information
- 4. First aid measures
- 5. Firefighting measures
- 6. Accidental release measures
- 7. Handling and storage
- 8. Exposure control/PPE
- 9. Physical and chemical properties

- 10. Stability and reactivity
- 11. Toxicological information
- 12. Ecological information
- 13. Disposal consideration
- 14. Transportation information
- 15. Regulatory information
- 16. Other information

Pictograms have a black symbol on a white background with a red diamond frame

| Exploding bomb (for explosion or reactivity hazards) | | Flame (for fire hazards) | Q | Flame over circle (for oxidizing hazards) | | |
|---|--|---|---|--|--|--|
| Gas cylinder (for gases under pressure) | | Corrosion (for corrosive damage to metals, as well as skin, eyes) | | Skull and Crossbones (can cause death or toxicity with short exposure to small amounts) | | |
| Health hazard (may cause or suspected of causing serious health effects) | | Exclamation mark (may cause less serious health effects or damage the ozone layer*) | | Environment* (may cause damage to the aquatic environment) | | |
| Biohazardous Infectious Materials (for organisms or toxins that can cause diseases in people or animals) | | | | | | |

 The GHS system also defines an Environmental hazards group. This group (and its classes) was not adopted in WHMIS 2015. However, you may see the environmental classes listed on labels and Safety Data Sheets (SDSs). Including information about environmental hazards is allowed by WHMIS 2015.

GHS Labeling – Signal Words

Signal words

 Used to emphasize hazard and discriminate between levels of hazard.

The signal words used in the GHS are:

Danger for more severe hazards

Warning for less severe hazards

Hazard Statements

A statement assigned to a hazard class and category that describes the nature and degree of the hazard(s) of a chemical.

- Example: Flammable liquids
 - Extremely flammable liquid and vapor
 - Highly flammable liquid and vapor
 - Flammable liquid and vapor
 - Combustible liquid

Precautionary Statements

Precautionary information which briefly provides measures to be taken to minimize or prevent adverse effects from physical, health or environmental hazards.

First aid is included in precautionary information

For example:

- Wear splash protection for face
- Keep away from heat/sparks/open flame
- Use explosion-proof electrical equipment
- Wear protective gloves

The Basic Parts of A GHS-Compliant Label

n-Propyl Alcohol

UN No. 1274 CAS No. 71-23-8

DANGER

Highly flammable liquid and vapor. Causes serious eye damage. May cause drowsiness and dizziness.

4

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.

Fill Weight: 18.65 lbs. Gross Weight: 20 lbs. Expiration Date: 6/21/2020

Lot Number: B56754434 Fill Date: 6/21/2013

See SDS for further information.



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GHS Labeling

Secondary Labels

• Need all the information from the original shipping label...

OR

 Product identifier & words, pictures, symbols which provide at least general information regarding the hazards including the specific information regarding the physical and health hazards.

• EXCEPTION

 Portable, immediate-use containers used by the employee who transferred the chemicals do not have to be labeled (not a change).



Control or Eliminate the Hazard

- Ventilation use local exhaust.
- Use least toxic solvent/chemical possible.
- Use personal protective equipment.
- Employees authorized to conduct Lockout/Tagout must shut off and lock-out all power sources, including electrical, gas, fuel oil, mechanical, hydraulic, and pneumatic, etc., before servicing or maintenance activities are performed on equipment.
- Do not eat or allow food in work areas.



Methods of Protection

- Safety Goggles or Glasses
 - Chemical splash goggles use when handling chemicals
 - Glasses for wood dust, metal shavings
- Gloves
 - Disposable only use once!
 - Reusable Heavy duty, clean immediately after use
 - Heat resistant
- Ear Protection
 - Ear plugs
 - Earmuffs



Methods of Protection

Half-face respirator Dust mask

- If using a half-face respirator you must comply with the Respiratory Protection Program.
- If using N95/dust mask, user must review and sign "Voluntary User" form.



Wash Your Hands!

- Use warm water
- Wet both hands and wrists
- Apply liquid soap to palms first
- Lather well, spread lather to back of hands and wrists
- Scrub for at least 15 seconds
- Rinse well and dry completely
- Turn off faucet using disposable towels

Emergency Procedures

- Know where the nearest eyewash is located
- Know where fire extinguishers are located
- Know emergency exit routes
- Immediately report to health office if exposed
- Contact supervisor for spills greater than one gallon



Hazardous Waste

- Must be labeled as "hazardous waste" with a descriptive name and date.
- Paper towels, rags used for stains may be thrown in trash.
- Paper towels, rags used for thinners must be disposed of as hazardous waste.
- Aerosol cans that are empty may be thrown in trash; if there is any product left in an aerosol can it must be disposed of as hazardous waste.
- Latex paint may be thrown in trash if solid (no liquid left).
- Oil-based paints or stains must be disposed of as hazardous waste, regardless of liquid/solid.

Weekly Eyewash/Shower Inspections

Emergency Eyewashes & Showers require weekly inspections which must be documented on the inspection tag.

- All plumbed eyewashes must be flushed for 3 minutes weekly.
- Plumbed showers should be flushed briefly on occasion (monthly) to ensure proper function.
- All units must be accessible, clearly marked, clean, and nozzle covers must be in place.



Electrical Safety

- Do not service equipment unless it is locked out first.
- Only authorized employees are allowed to conduct lockout-tagout on hard-wired equipment.
- Electrical cords should never be repaired with duct tape or electrical tape.
- If equipment has frayed or worn cords, the cords should be replaced.
- Equipment should have a 3-prong (grounded) plug or be double insulated.

Monthly Fire Extinguisher Inspections



- Ensure that the fire extinguisher is accessible.
 - Are any materials blocking the fire extinguisher?
 - Is it visible from all points in the room?
 - If not, is there proper demarcation above the fire extinguisher?
- Is the fire extinguisher properly mounted in a cabinet, on the wall, or in a secure location?
- Is the pressure indicator in the 'green'?
 - Tap the pressure indicator to ensure it is functional.
- Has the fire extinguisher been vandalized in any way to compromise its function?
- Make sure to initial and date the inspection tag at time of inspection.

Thank You for completing the Employee-**Right-to-Know** training Link to the Required Quiz:

If you have any questions regarding this training or any other health and safety topic, please contact:

Cassie Bowser with IEA at 507-382-0364 or cassandra.bowser@ieasafety.com

Link to the Required Quiz: https://docs.google.com/forms/d/e/1FAIpQLSekhzMvgZ5crqp DEu77bgJuJlsY7SVOBRgg33k8GGyRDBHpLg/viewform?usp=sf_l ink