



Safety as a Component of Creating Art

Facts, Knowledge, Workspace,
Personal Practices, and Medium-
Specific Hazards

OUTLINE

- Why Art Safety?
- Risk
- “Creating Art Safely” Video
- Ideal Work Environment
- Safe practices
- Labels Indicating Risk and Hazards
- Signs of Exposure
- Proper Waste Disposal
- Mediums of Art
- Risk and Risk Assessments – High Risk/ Low Frequency
- UO Emergency Procedures
- Knowledge Resources/ References

Why Art Safety?

- Health and Safety Issues
- Environmental Issues
- Fire Safety
- Hazard Communication
- Community Right to Know
- **Inform/Educate/Create**



Similar Risk For Chemical Industry Workers and Artists

Risk Factors

- Body Burden
- Dose
- Environment
- Precautions
- Susceptibility

Chemical-Specific Hazards

- | | | |
|-------------|--------------------------|----------------------------|
| • Adhesives | • Powders | • Chlorinated Hydrocarbons |
| • Dusts | • Preservatives | • Glycol Ethers |
| • Dyes | • Alcohols | • Ketones |
| • Metals | • Aliphatic Hydrocarbons | • Turpentine |
| • Pigments | • Aromatic Hydrocarbons | • Citrus Cleaners |

Reactions to Exposure

- Acute
- Chronic (latency periods)

Ailments due to lack of knowledge

- Marie Curie → aplastic pernicious anemia (radium/ radioactivity)
- Goya → plumbism (lead)
- Van Gogh → mental illness (camphor, turpentine, absinthe)

Sources of Risk

Types of Hazards

- mechanical
- Chemical

States of matter and Routes of Exposure

- Respirable solids
- Fumes
- Vapors
- Toxic/ flammable liquids

Chemical Hazard Classification

- | | |
|----------------------|---------------|
| • Toxic/ Nontoxic | • Oxidizer |
| • Carcinogen | • Combustible |
| • Reproductive Toxin | • Flammable |
| • Anesthetic | • Explosive |
| • Asphyxiant | • Corrosives |

Hierarchy of Controls

- Design
- Engineering
- Personal protection

A Six Step-Process for Creating Art Safely

[Creating Art Safely: A Six-Step Process | Yale Environmental Health & Safety](#)



Ideal Work Environment

- Kept up – diligently
- Ventilation – appropriate/adequate
 - General (dilution) vs. Local
- Wastes – disposed properly
- Fire – managed risks & prevention



Best Design & Work Practices

Ventilating the Indoor Environment:

Ventilation controls heat, humidity, removes airborne hazards, prevents fire & explosion.

Local exhaust employed for high hazards.

Storage practices that minimize hazards:

Compliance with regulation.

Storage segregated from Use.

Small quantity containers & numbers.

Closed containers.

Labeled containers.

No high-piled storage.

Separate incompatibles.

Flammable cabinets and Safety Cans.

Rag cans – empty nightly.

Spill kits at the ready.

Life/Safety practices:

Practiced emergency procedures.

Practice use of Fire Extinguishers.

Store minimum flammables needed for work.

Remove all sources of ignition.

Transfer liquids in small quantities.

Keep exits clear (esp. combustibles).

Inspect studio regularly.

Involve professional staff in responses to large spills of flammables.

Wear appropriate protective clothing.

Keep an accurate inventory of flammable materials.

Discard old and unused materials.

Evaluate MSDS and SDS for hazards & response guidance.

Ensure functionality of smoke/fire detection apparatus.

Work practices

Storage practices

Labels Indicating Risk and Hazards

Labeling & Hazard Communication

- ACMI approved/certified products
 - AP = NonToxic
 - CL = Certified to have adequate hazard warning information
- Hazardous Materials
 - OSHA MSDS
 - OSHA SDS
 - NFPA labeling
 - HMIS labeling
 - GHS labeling



Hazardous Materials Classification



HEALTH	
FLAMMABILITY	
PHYSICAL HAZARD	
PERSONAL PROTECTION	

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM	
HAZARD INDEX	PERSONAL PROTECTION INDEX
4 - EXTREME HAZARD 3 - SERIOUS HAZARD 2 - MODERATE HAZARD 1 - SLIGHT HAZARD 0 - MINIMAL HAZARD	A - Goggles B - Goggles and gloves C - Goggles and gloves and apron D - Goggles and gloves and apron and shoe coverings E - Goggles and gloves and apron and shoe coverings and respirator F - Goggles and gloves and apron and shoe coverings and respirator and hood G - Goggles and gloves and apron and shoe coverings and respirator and hood and full body suit H - Goggles and gloves and apron and shoe coverings and respirator and hood and full body suit and hood I - Goggles and gloves and apron and shoe coverings and respirator and hood and full body suit and hood and hood J - Goggles and gloves and apron and shoe coverings and respirator and hood and full body suit and hood and hood and hood K - Goggles and gloves and apron and shoe coverings and respirator and hood and full body suit and hood and hood and hood and hood X - Goggles and gloves and apron and shoe coverings and respirator and hood and full body suit and hood and hood and hood and hood and hood
PERSONAL PROTECTION EQUIPMENT	

Danger – hazards can cause serious injury (blindness, amputation) or death.

Warning – hazards can cause less than serious injuries.

Caution – warning that users should be careful when using, handling, or storing a chemical

OSHA-SDS Format for Chemical Manufacturers

1. Identification*

- GHS product identifier
- Other means of identification
- Recommended use of the chemical and restrictions on use
- Supplier information (including name, address, phone number, etc.)
- Emergency phone number

2. Hazard(s) identification*

- Classification of the chemical in accordance with paragraph (d) of §1910.1200
- Signal word, hazard statement(s), pictogram(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200. Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., Flame, skull and crossbones
- Describe any hazards not otherwise classified that have been identified during the classification process
- Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥ 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that x% of the mixture consists of ingredient(s) of unknown acute toxicity is required.

3. Composition/information on ingredients

4. First-aid measures

5. Fire-fighting measures

6. Accidental release measures

7. Handling and storage

8. Exposure controls/personal protection

9. Physical and chemical properties

10. Stability and reactivity

11. Toxicological information

12. Ecological information**

13. Disposal considerations**

14. Transport information**

15. Regulatory information**

16. Other information**

GHS Label

Product Name: 1,1,2-Trichlorotrifluoroethane

Product Code (UN#, ECHA, CAS#): UN No. 3282 ECHA No. 200-606-1 CAS No. 76-13-1

Signal Word: **DANGER**

Hazard Statement: **HAZARD STATEMENTS**
Causes mild skin irritation. Causes eye irritation. Toxic to aquatic life with long lasting effects. Harms public health and the environment by destroying ozone in the upper atmosphere.

Precautionary Statement: **PRECAUTIONARY STATEMENTS**
Avoid release to the environment. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Pictograms:

Additional Information: **ADDITIONAL INFORMATION**

Supplier Identification: Sigma-Aldrich 3000 Spruce St. St. Louis, MO 63103 USA 3147769255
CONSULT SDS FOR ADDITIONAL INFORMATION ON HAZARDS

International-GHS Labeling TRANSPORTATION LABELS

Transportation labels may only be required in some countries or regions. The EU currently requires these on outside packaging. Labeling pictograms may appear in the Hazard(s) Identification section and/or Transport section of SDS.

Create your own GHS labels

With DuraLabel printers and supplies, it's easy to create custom safety and visual communication labels. DuraSuite™ software includes 7 different formats tailored to specific applications. See reverse for more details.

*Sections #12 and #13 are expanded to help explain what information chemical manufacturers must provide for HCS OSHA-GHS labeling.
**Not mandatory for OSHA compliance, but may be required by other agencies and/or governments.

Protect Yourself and Know Signs of Exposure

- Good personal hygiene
- Use of protective attire
 - Clothing
 - Gloves (what, why)
 - Eye Protection
 - Respiratory protection through UO Program
- Symptoms of Exposure
- First Aid – be prepared
- Medical Attention

Symptoms	Possibilities
Skin dryness, itching, inflammation	Solvents, resins, cutting oils, fiberglass, photochemicals
Eye inflammation, irritation, tearing	Acid/alkali vapors, dusts, gases, smoke, sprays
Ear ringing, deafness	Noise, caffeine, quinine, hydroquinones
Sneezing, runny nose, cough, sore throat	Dusts, fumes, gases; vapors from solvents, printmaking, photochemicals
Wheezing, shortness of breath	Dusts and powders (rosin, silica); alkali, photochemical, and solvent vapors
Flulike	Metal fumes
Dizziness, drowsiness, headache, body tingling	Solvent vapor inhalation, asphyxiant gases, carbon monoxide, cyanide
Abdominal discomfort	Photo and printmaking chemicals; solvents

All waste bottles should be labeled/tagged when accumulation starts

All fields are required University of Oregon
Eugene, OR 97403

Contact Information

Principal Investigator
L Smith

Responsible Party
Joe Jack

Contact Number
(541)346-XXXX

Start Date
4/25/24

Contents (Do not Abbreviate)

Contents (Do not Abbreviate)	Percent (%)
<u>Ethyl Acetate</u>	<u>20</u>
<u>Methanol</u>	<u>20</u>
<u>Hexanes</u>	<u>40</u>
<u>tetrahydrofuran</u>	<u>20</u>

☐ **Hazardous Waste**

Hazard Type (Mark Applicable Hazard)

<input type="checkbox"/> Acidic (Corrosive)	<input checked="" type="checkbox"/> Toxic/Poisonous
<input type="checkbox"/> Basic (Corrosive)	<input checked="" type="checkbox"/> Reactive
<input checked="" type="checkbox"/> Ignitable/Flammable	<input type="checkbox"/> Oxidizing

CAUTION

UNWANTED MATERIALS

ALL fields above are REQUIRED

Accumulation Date
4/25/24

Corrosive: ACIDIC $\text{pH} \leq 5.5$
BASIC $\text{pH} \geq 12$

Ignitable/Flammable: Flash Point $\leq 140^\circ \text{F}$
(most solvents)

Reactive: Reacts with water or creates gasses on contact with acids (cyanides, sulfides, reactive lithium species, organometallic compounds, etc.)

Oxidizing: Hydrogen peroxide, nitric acid, nitrates, perchlorates, etc.

Toxic: Halogenated solvents, metals (Ag, As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn), carcinogens, etc.

For Information Contact:
Hazardous Waste Specialist: 541-346-2348
safety@uoregon.edu

All fields on the front must be completed before pick-up.



To Request Pick Up of Correctly Labeled Waste, Follow Links on EHS Website

[Hazardous Waste Pick-Up | Safety and Risk Services \(uoregon.edu\)](#)

UO Police | Emergency Management | Risk & Insurance | **Environmental Health & Safety** | Enterprise Resilience | About

Location Innovation Lab

ENVIRONMENTAL HEALTH & SAFETY

Building Environmental Science Services

Hazardous Materials Services

Chemical Safety

Hazardous Materials Guide

Hazardous/Regulated Materials Transportation

Hazardous Waste Pick-Up

Procedure for Radioactive Waste Tag

Radioactive Waste Pick-up

Safety Data Sheet Links

Occupational Health and Safety Services

Research Safety Services

University Fire Marshal Services

Environmental Services

EHS Safety Training

REPORT A SAFETY CONCERN

Hazardous Waste Pick-Up

Environmental Health and Safety (EHS) collects hazardous materials in several categories for disposal, treatment or recycling for all UO departments.

Contacts




- [Seth Sponcey](#), Hazardous Waste Program Coordinator (P) 541-346-2348
- [Ben Bythell](#), Hazardous Materials Manager, Chemical Safety Officer, (P) 541-346-0371

Process

Hazardous Waste Pick-Ups

Submit a service request through the Environmental Health and Safety Assistant (EHSA) online system here:

PLACE A WASTE PICKUP REQUEST

- [Click here for first time login instructions](#) 
- [Click here for a waste submittal GUIDE](#) 
- [Click here to learn how to access the Chemical Exchange/Re-Use inventory](#) 

Please allow three business days for collection.

Mediums of Art

- Drawing
- Painting
- Printmaking
- Photography
- Jewelry & Metalsmithing
- Sculpture
- Woodworking



Drawing

- Irritating Dusts (chalk, charcoal)
- Solvent-based inks
- Toxic pigments (e.g. chrome yellow, PbCrO_4)



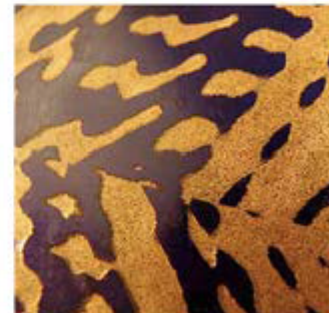
interior house)

*Hg is mercury

Printmaking

- Dusts, Inks, Etchants, Resists, Stone/Plate Cleaners, Solvents, Mechanical Tools
 - Flammable, Toxic, Corrosive, Physical injury
 - Ferric chloride, acids, Dutch Mordant ($\text{KClO}_4, \text{HCl}, \text{H}_2\text{O}$)
- Mitigating risks
 - Hazard Communication
 - Risk analysis
 - Protective mechanisms

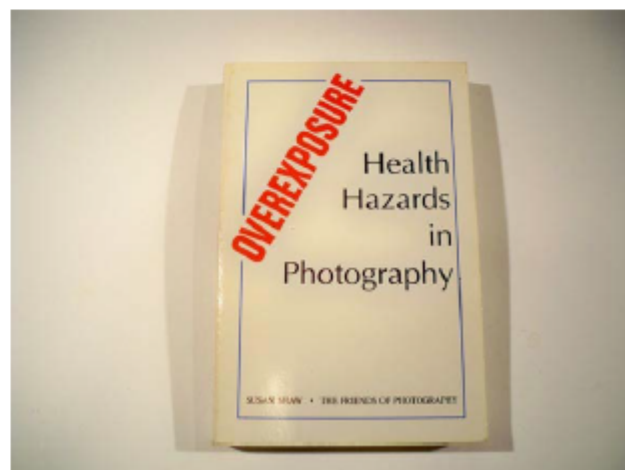
NontoxicPrint.com
Nontoxic Printmaking



A Research Resource and
Practical Guide for
Printmakers, Artists and Educators

Photography

- Dusts, Developers, Stop Baths, Fixers, Intensifiers, Toners
 - Flammable, toxic, mutagen, corrosive, oxidizers
 - Hydroquinone, acetic acid, boric acid, potassium dichromate (hexavalent chromium), potassium ferricyanide, heavy metals, sulfides, silver salts, bleach, potassium permanganate.
- Mitigating Risks
 - HazCom, Risk Analysis, Substitution, Protection

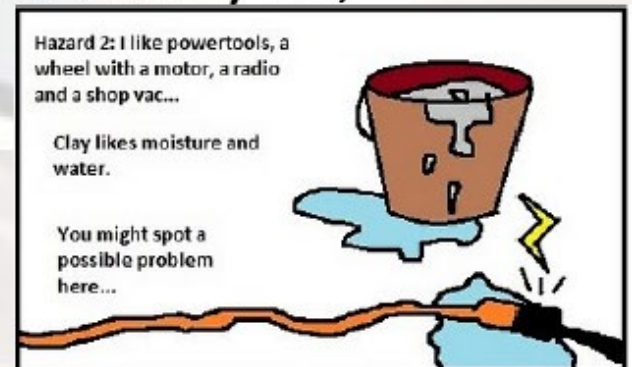


Glass, Jewelry, Metalsmithing

- Dusts, Stains, Fluxes, Solder, Fumes, Plating Solutions, Pickle, Welding
 - Flammable, toxic, corrosive, carcinogen
- Temperature, Non-ionizing Radiation
 - Burns, fatigue
- Mitigating Risks – HazCom, Risk Analysis, Substitution, Protection

Sculpture

- Dusts, Pigments, Borax, Lime, Acids, Finishing products
 - Irritants, toxics, corrosives, flammables
- Tools & Toolwork
- Mitigating Risks – HazCom, Risk Analysis, Substitution, Protection



Woodworking

- Dusts, Engineered Wood Products, Finishing Products, Adhesives
- Tools & Toolwork
- Mitigating Risks – HazCom, Risk Analysis, Substitution, Protection, Guarding



College of Design Technology Services

Our Services

Output Room

Computing Labs

Woodshops

PDX Fabrication Lab

Polymer Lab

Woodshops

Our Services

Output Room

Computing Labs

Woodshops

COVID-19 Woodshop
Procedures

Woodshops Access

Woodshops Tools & Equipment

Woodworking Tools Videos

Lawrence Hall Woodshop

Millrace Woodshop

Supplies and Local Resources

PDX Fabrication Lab

Polymer Lab

Woodshops



The Lawrence Hall Woodshop and the **Millrace Woodshop** are both located in Eugene, and managed by [Facilities Support Services](#).

The Lawrence Hall Woodshop is a tools resource for students currently enrolled in College of Design courses. The Millrace Woodshop is for Product Design and Interior Architecture scheduled classes.

The open shop environment has been created to provide a safe, and professionally supervised space in which students can create high-quality projects, while learning skills that further prepare them to excel in their chosen careers.

Fall/ Winter/ Spring Term Hours

Monday, Tuesday, Wednesday, Thursday
10:00 AM – 12:00 PM, 1:00 PM – 7:00 PM

Risk Assessment

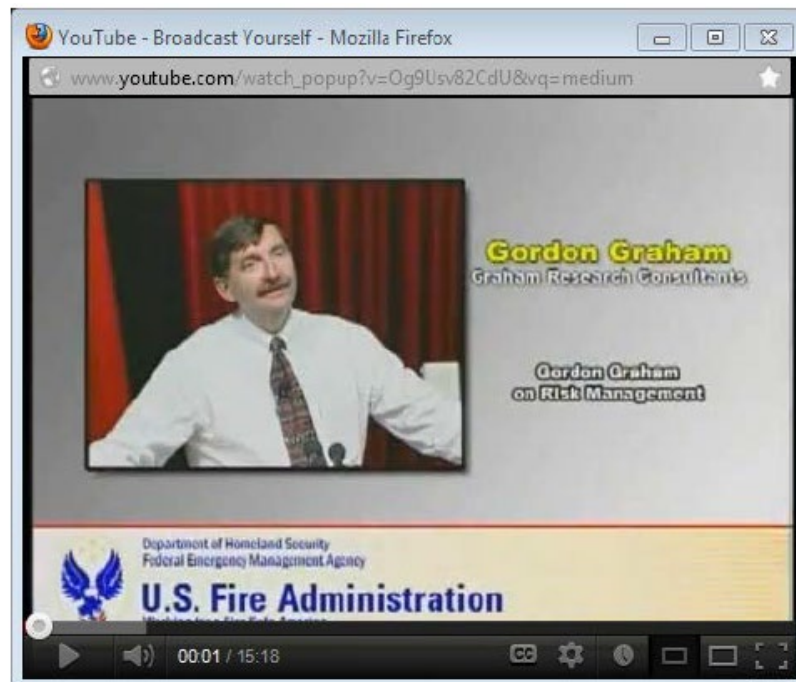
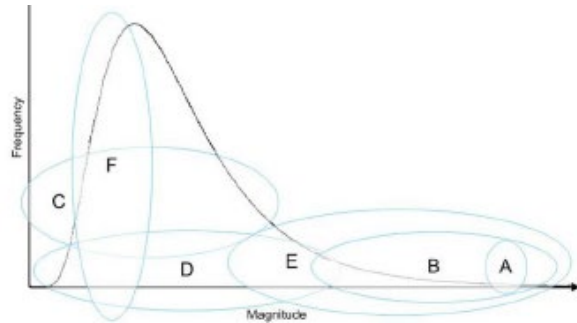
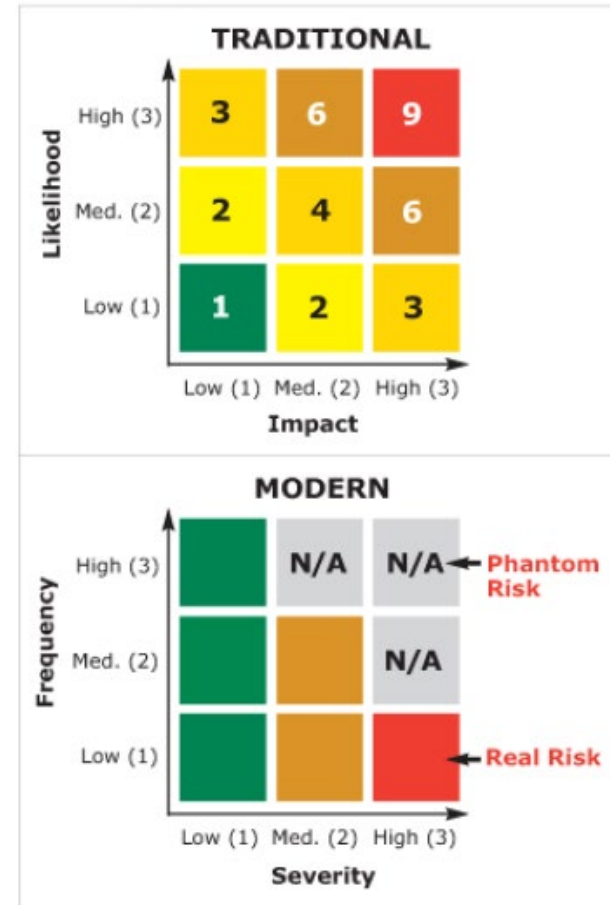


EXHIBIT 1
Measuring high and low risks



<https://www.youtube.com/watch?v=GvOSoTA4JMg&pp=ygUdZ29yZG9uIGdyYWVhbnSBYaXNrIGFzc2Vzc21lbnQ%3D>

UO Emergency Procedures



EMERGENCY PROCEDURES

Emergencies 911	Non-Emergency 541-346-2919	Suicide & Crisis Lifeline 988	Facilities Issues 541-346-2319
SHELTER IN PLACE <ul style="list-style-type: none">Evaluate situation and choose appropriate shelter location that provides the best protection based on the situation.Move to shelter and take personal items if space allows.Remain sheltered until instructed that it is safe to leave.If safe to do so, monitor alerts.uoregon.edu for the latest information.	EARTHQUAKE <ul style="list-style-type: none">Drop, cover, and hold on. Take cover under sturdy furniture.Cover head and neck with hands.When shaking stops, evacuate the building.Do not re-enter until building has been assessed and cleared.	PERSON WITH A WEAPON <ul style="list-style-type: none">Move quickly to a safe space and call 911.Provide a description of the person and their location. <p>AVOID (RUN) If you have a clear exit and are able to.</p> <p>BARRICADE (HIDE) If it isn't safe to run and the attacker is nearby.</p> <p>CONFRONT (FIGHT) As a last resort or if the threat is imminent.</p>	
AIR QUALITY <ul style="list-style-type: none">Check AQI index on airnow.gov.Move work inside and close all doors and windows.KN95 and N95 masks can be helpful with unhealthy air quality.	MEDICAL <ul style="list-style-type: none">Call 911.Acquire and use appropriate Personal Protective Equipment.Render aid to the best of ability/training/comfort with available equipment and/or people.Stay with victim until emergency responders arrive.	EVACUATION <ul style="list-style-type: none">Every person MUST evacuate the building.Do not use elevators.In the case of evacuation, carry necessary personal belongings (keys, phone, wallet, etc.) at all times. Do not re-enter spaces.	
HAZARDOUS MATERIALS <ul style="list-style-type: none">Move away from site of hazard to a safe location.Call 541-346-2919 to report the situation.Alert others to stay clear of the area. If situation is life-threatening, activate fire alarm pull station to evacuate the building.Inform emergency personnel if you have been exposed or have important information.		FIRE <ul style="list-style-type: none">Leave the building immediately when signaled by fire alarm.Activate the nearest fire alarm pull station if you discover the fire first.Use only stairs and fire exits during evacuation. Avoid elevators.Alert emergency personnel if anyone is missing, trapped inside, or needs assistance. Do not re-enter the building until it is all clear.	

 safety.uoregon.edu
 alerts.uoregon.edu

 UNIVERSITY OF OREGON

- Familiarize yourself with this Poster.
- It contains information regarding what to do, and the numbers to call in the case of various Emergencies.
- Copies are posted throughout campus.

EHS WEBSITE

<https://safety.uoregon.edu/environmental-health-and-safety>



ENVIRONMENTAL HEALTH & SAFETY

Building Environmental Science Services

Hazardous Materials Services

Occupational Health and Safety Services

Research Safety Services

University Fire Marshal Services

Environmental Services

EHS Safety Training

REPORT A SAFETY CONCERN

Environmental Health and Safety

Environmental Health & Safety (EHS) promotes compliance and responsible behaviors as exemplified and required by health, safety, and environmental standards, codes, regulations, and university programs. The department provides educational, monitoring, problem-solving, and support service functions to the entire university community.



Books on Art Safety

Books

"Artist Beware", Michael McCann, PhD,
CIH

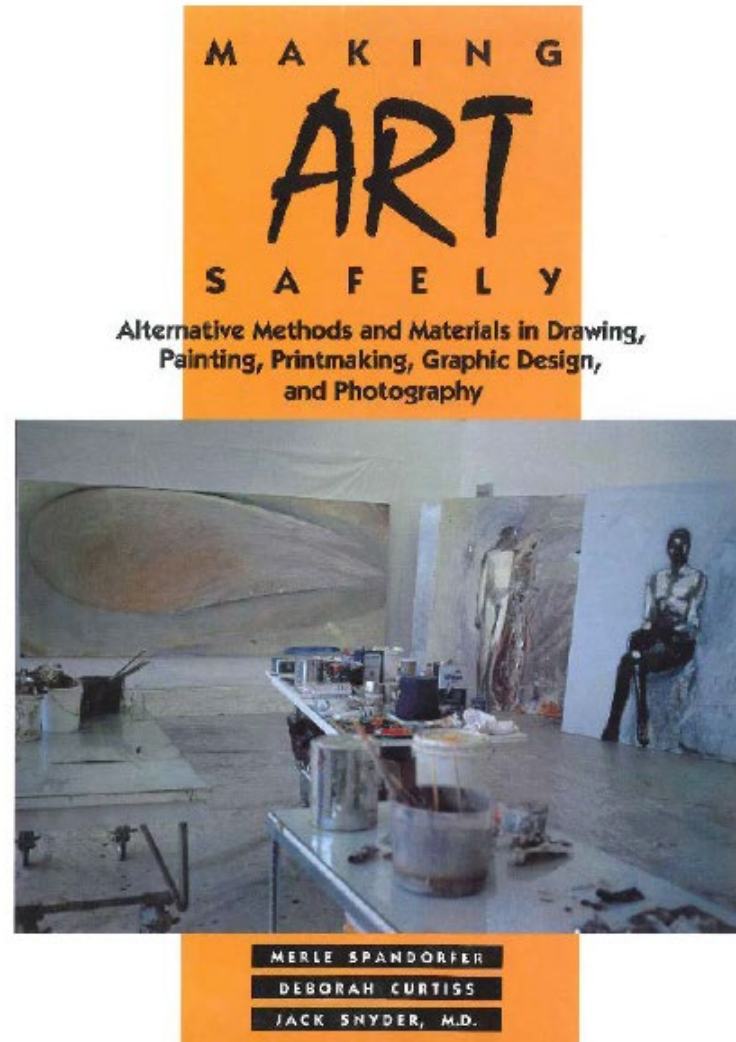
"The Artist's Complete Health and
Safety Guide", Monona Rossol, MS,
MFA

"Overexposure: Photography Hazards",
Susan Shaw and Monona Rossol

"Making Art Safely", M. Spandorfer, D.
Curtiss, J. Snyder, MD

"Stage Fright: Health & Safety in
Theater", Monona Rossol, MS, MFA

"Health Hazards Manual for Artists",
Michael McCann, PhD, CIH



Knowledge Resources

Regulatory

- U.S. Occupational Safety and Health Act
- U.S. Consumer Product Safety Commission
 - “Art and Craft Safety Guide”
www.cpsc.gov Publication 5015
- U.S. Environmental Protection Agency
- OSHA HazCom
- CDC - NIOSH
- ICC Life/Safety Codes

Peer

- Art and Creative Materials Institute: <https://www.acmiart.org/>
- Arts, Crafts & Theater Safety:
<https://www.artscraftstheatersafety.org/lectures.html>
- City of Tucson, Health & Safety in the Arts:
<https://www.tucsonaz.gov/Government/Office-of-the-City-Manager/Community-Safety-Health-Wellness>