


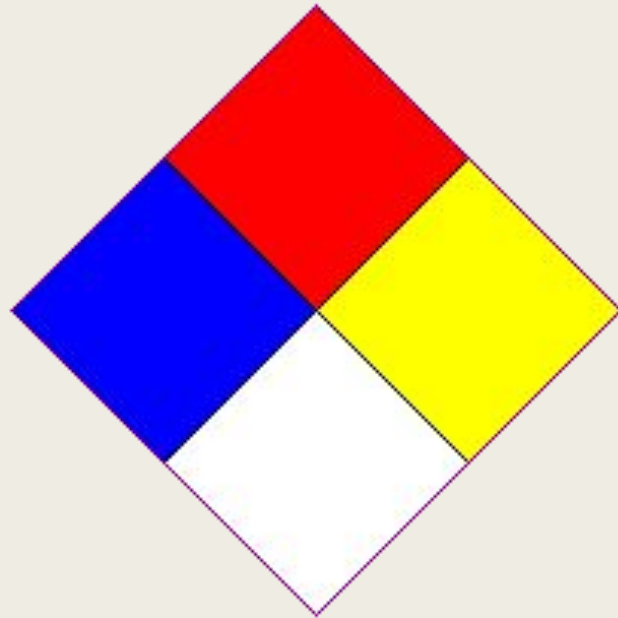


LAB SAFETY & MSDS

You will need a blue, red, and yellow color pencil
(located at lab station 1)



LABORATORY SAFETY



- **Chemical Hazard Label**
- **MSDS**
- **Safety Quiz**

- <https://www.youtube.com/watch?v=3ELbwzqyuhs>



Lab Safety Contract

pg 1-2 of lab book

- This contains all of your lab safety rules and guidelines
- Breaking lab safety rules is the quickest and easiest way to earn failing grades and referrals!

Class room locations

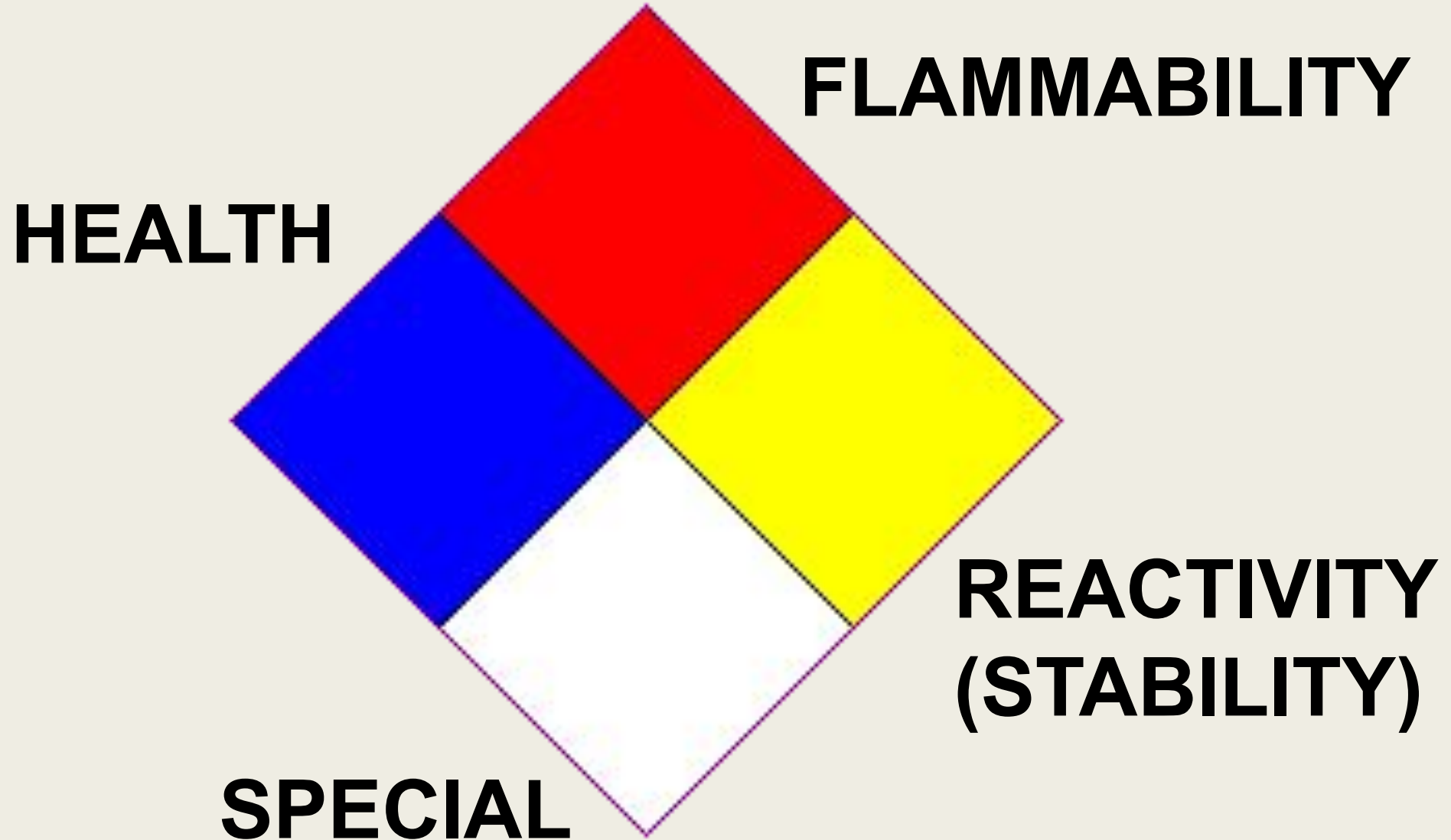
- Fire Blanket
- Broken Glass container
- Safety Glasses
- Fire shut off
- Fire Extinguisher

NFPA CHEMICAL HAZARD LABEL

pg 3 in lab book

- Use the following set of notes to **color, label** and **describe** each part of the safety diamond.

NFPA CHEMICAL HAZARD LABEL



- Health, Flammability, and Reactivity are each measured on a scale of 0-4

0- lowest (safest)

4-highest (most dangerous)

NFPA CHEMICAL HAZARD LABEL

Diborane

Burns readily.

Severe
health
risk.






May
detonate
with heat or
ignition.

Avoid water.



NFPA Rating Explanation Guide



RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable		Radioactive
					Reacts violently or explosively with water
				 OX	Reacts violently or explosively with water and oxidizing

This chart for reference only - For complete specifications consult the NFPA 704 Standard





Gasoline



Clear liquid; distinctive odor. Irritating to eyes/skin/respiratory tract. Also causes: dizziness, drunkenness, unconsciousness. Absorbed through skin. Chronic: dermatitis. Possible cancer hazard. Flammable. Can form explosive mixtures in air.

CAS No. 8006-61-9

MSDS

- **Material Safety Data Sheet**
- **On file for all purchased chemicals.**
- **Includes all information shown on a chemical label and more.**
- **Different formats are used by different chemical companies.**

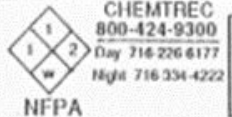
MATERIAL SAFETY DATA SHEET

FREY
SCIENTIFIC

905 Hickory Lane
Mansfield, Ohio 44905
(419) 589-9905

MSDS No. CC 30
Effective Date May 11, 1993

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	CALCIUM METAL		Health	1
Chemical Synonyms	Calcium Metal, Granular, Turnings		Fire	2
Formula	Ca		Reactivity	2
Unit(s) Size	100 to 500 grams			
C.A.S. No.	7440-70-2			

NFPA HAZARD RATING				
LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II HAZARDOUS INGREDIENTS OF MIXTURES

Principal Hazardous Component(s)	%	TLV Units
Calcium Metal: (CAS No. 7440-70-2)	99%	Not established
Magnesium Metal: (CAS No. 7439-95-4)	0.7%	Not established
WARNING! FLAMMABLE SOLID - A FIRE HAZARD		
KEEP DRY AND WELL CLOSED. DANGEROUS WHEN WET.		

SECTION III PHYSICAL DATA

Melting Point (°F)	839°C (1544°F)	Specific Gravity (H ₂ O = 1)	1.54 @ 20°C
Boiling Point (°F)	1487°C (2817°F)	Percent Volatile by Volume (%)	Non-volatile (NA)
Vapor Pressure (mm Hg)	10 mm @ 983°C	Evaporation Rate (1 = 1)	Non-volatile (NA)
Vapor Density (Air=1)	Not listed		
Solubility in Water	Caution: Reacts violently with water to produce hydrogen gas.		
Appearance & Odor	Lustrous, silver-white surface when freshly cut, tarnishes to grayish-white on exposure to air; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-Flammable	Flammable Limits in Air % by Volume	NA	Lower	Upper
Extinguisher Media	Use dry graphite, soda ash, powdered sodium chloride, sand, G I powder.				

SPECIAL FIREFIGHTING PROCEDURES

Do not use water or halogenated hydrocarbons such as Carbon Tetrachloride. Carbon dioxide and dry chemicals are ineffective. Wear a self-contained breathing apparatus; wear goggles. **USE:** Special mixtures of dry chemical or lime is only extinguishing agent to be used.

(1990 EMERGENCY RESPONSE HANDBOOK, DOT P. 5800 5, GUIDE PAGE NO. 40)

UNUSUAL FIRE AND EXPLOSION HAZARDS

Calcium reacts with water to form the hydroxide and hydrogen. Mixed with air, the liberated hydrogen may present an explosion hazard. Explosion or violent reaction may take place if care is not exercised in selecting extinguishants applied to a calcium fire. Finely divided calcium is considered pyrophoric and will cause an explosion when an ignition source is applied. Moderate explosion hazard in intimate contact with very powerful oxidizing agents.

SECTION V HEALTH HAZARD DATA

Threshold Limited Value

None established.

Effects of Overexposure

Solid material will cause skin and eye burns since it reacts with moisture to form caustic. Similarly, the fumes from burning calcium are highly irritating to skin, eyes, and mucous membranes.

Emergency and First Aid Procedures

SKIN: Wipe excess metal from skin. Wash with soap and water.
EYES: Flush with water for 15 minutes. Get prompt medical attention. **INGESTION:** Specific data is not available. Call physician immediately.

SECTION VI REACTIVITY DATA

Stability	Unstable	Conditions to Avoid
	Stable	X
Incompatibility (Materials to Avoid)	Unstable when exposed to moist atmosphere - heat.	
	Moisture from any source, alkali - metal hydroxides and carbonates.	
Hazardous Decomposition Products	Calcium and water react to produce hydrogen. Burning calcium is self sustaining and strongly reducing to adjacent media.	
Hazardous Polymerization	May Occur	Conditions to Avoid
	Will Not Occur	
	X	Not applicable.

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled	Wear protective equipment and clothing. Collect spilled material for reclamation or disposal in sealed containers. Avoid contact with water. Avoid inhalation of dust.
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Waste Disposal Method	Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog size quantities only.
	Recycle or dispose of in an approved incinerator or contract with a licensed chemical waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respirator Protection (Specify Type)	Normally none needed. A NIOSH-approved dust filter mask if needed.		
Ventilation	Local Exhaust	Recommended	Special
	Mechanical (General)	Recommended	Other
Protective Gloves	Rubber	Eye Protection	Chemical safety glasses.
Other Protective Equipment	Safety glasses, smock, apron, eye wash station and a fire extinguisher.		

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing	Store in a cool, dry place. No smoking or open flames when opening container. Wash thoroughly after handling.
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Other Precautions	Read label on container before using. Do not wear contact lenses when working with chemicals.
	Store under kerosene or other neutral oil. Never store under halogenated hydrocarbons. Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Rev. No. No. 6	Date 5/11/93	Approved Alexander A. Piccinilli	Chemical Safety Coordinator AP
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The information contained herein is furnished without warranty of any kind. Employees should use this information only as a supplement to other information obtained.

Lab Safety Test

- We will have a lab safety test.....
- It is your responsibility to read over the lab safety sheet in the front of your lab manual and be prepared for the test and any future labs