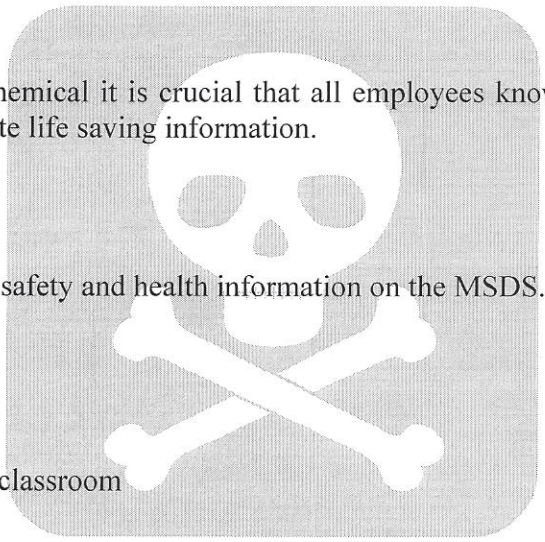
Student Activity 1:

Analyzing The MSDS

Name_____



Purpose:
If an accident occurs with a hazardous chemical it is crucial that all employees know how to read the MSDS and be able to locate life saving information.

Objectives:
The students will be able locate important safety and health information on the MSDS.

Materials:
Sample MSDS
Several MSDS for chemicals kept in your classroom

Procedure:
Use the sample MSDS to locate the correct information and answer the following questions. Then locate an MSDS for a product used in your classroom and answer the same questions. Questions are located on the next page.

	Sample MSDS	Classroom MSDS
1. What is the name of the product?		
2. What does PEL stand for?		
3. Describe the appearance and odor of this product.		
4. What steps should be taken if the product is spilled?		
5. What are the hazardous chemicals that make up this product?		
6. Describe the first aid procedure to be followed if the product comes in contact with your eyes.		
7. If the product catches on fire, how should it be extinguished?		
8. What is the correct way to store this product?		
9. What types of protective gear should be used when handling this product?		
10. If an emergency occurred with this product how could you get information to help you?		

Sample Material Safety Data Sheet

1. Product Information

Product Name: Acme Super Stain
Product Code(s)- 56-9751, 56-9853, 37-0380, 0-0388, BR2300 size: 120 mL, 500 mL
Chemical Name: Product is a mixture
CAS Number: See Section 2
Formula: See Section 2
Synonyms: None known
Distributor: Acme Supply Company
700 Spencer Road
Corning, NY 14830
Chemical Information: 800-277-1430 (8am-5pm (ET) M-F)
(Transportation Spill Response 24 hours): 800-414-4500

2. Composition/ Information on Ingredients

Principle Hazardous Components: Sodium Phosphate, Dibasic (CAS#7768-79-4) 0.25%, Potassium Phosphate, Monobasic (CAS# 3378-77-0) 0.63%
TLV and PEL units: None established

3. Hazard Identification

Emergency Overview: Avoid contact with skin and eyes. Do not ingest.
Potential Health Effects:
Eyes: May cause irritation.
Skin: May cause irritation. Ingestion: May cause gastrointestinal discomfort. Inhalation: May cause irritation to respiratory tract.

4. First Aid Measures

Emergency and First Aid Procedures:
Eyes - Flush with water for at least 15 minutes, raising and lowering eyelids occasionally. Get medical attention if irritation persists.
Skin - Thoroughly wash exposed area for at least 15 minutes. Remove contaminated clothing. Launder contaminated clothing before reuse. Get medical attention if irritation persists.
Ingestion - If swallowed, if conscious, give plenty of water. Immediately call a physician or poison control center. Never give anything by mouth to an unconscious person.
Inhalation - Remove to fresh air. Give oxygen if breathing is difficult; Give artificial respiration if breathing has stopped. Keep person warm, quiet, and get medical attention.

5. Firefighting Procedures

Flash Point (Method Used): Not applicable
NFPA Rating: None established
Extinguisher Media: Use dry chemical, C02 or appropriate foam.
Flammable Limits in Air % by Volume: Not applicable
Autoignition Temperature: Not applicable
Special Firefighting Procedures:
Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Unusual Fire and Explosion Hazards: This product will not burn; it is not expected to explode.

6. Spill or Leak Procedures

Steps to be taken in case material is Released or Spilled: Ventilate area of spill. Eliminate all sources of ignition. Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

7. Special Precautions

Precautions to be taken in Handling or Storing: Store tightly closed in cool, dry, well-ventilated area suitable for general chemical storage.

8. Special Protection Information

Respiratory Protection (Specify Type):
A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.
Ventilation: Local Exhaust: Yes
Mechanical (General): Yes
Special: No
Other: No
Protective Gloves: Rubber, neoprene, PVC, or equivalent.
Eye Protection: Splash proof chemical safety goggles should be worn at all times.
Other Protective Clothing or Equipment: Lab coat, eyewash, and safety shower.

9. Physical Data

Molecular Weight: No information available
Melting Point: Approximately 0 C (water)
Boiling Point: Approximately 100 C (water)
Vapor Pressure: Approximately the same as water
Vapor Density (Air=l): 0.1 (water)
Specific Gravity (H20=1): Approximately I
Percent volatile by Volume: Approximately 99%
Evaporation Rate (H20=1): Approximately I (water)
Solubility in water: Appearance and Odor: Complete, product is an aqueous solution Clear, colorless solution with no odor

10. Reactivity Data

Stability: Stable
Conditions to Avoid: None known Incompatibility (Materials to Avoid): Water reactive agents
Hazardous Decomposition Products: None expected
Hazardous Polymerization: Will not occur

11. Toxicity Data

Toxicity Data: Sodium Phosphate, Dibasic: orl-rat LD50: 17gm/kg
ipr-rat LDlo: 1000mg/kg
Potassium Phosphate, Monobasic: No toxic effects data found
Effects of Overexposure:
Acute: See section 3
Chronic: No data found
Conditions Aggravated by Overexposure:
Target Organs: No information available
Primary Route(s) of Entry: Ingestion, skin

12. Ecological Data

EPA Waste Numbers: None

13. Disposal Information

Waste Disposal Methods: Dispose in accordance with all applicable Federal State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

14. Transport Information

Non-regulated

15. Regulatory Information

EPA TSCA Status: On TSCA Inventory
Hazard Category for SARA Section 311/312 Reporting: Acute

Product or Components	SARA EHS Sec. 302 TPQ	SARA Sec. 313 Chemicals Name List	Chemical Category	CERCLA Sec. 103 RQ lbs.	RCRA Sec. 261.33
Sodium Phosphate	No	No	No	No	No
Potassium Phosphate	No	No	No	No	No

16. Additional Information

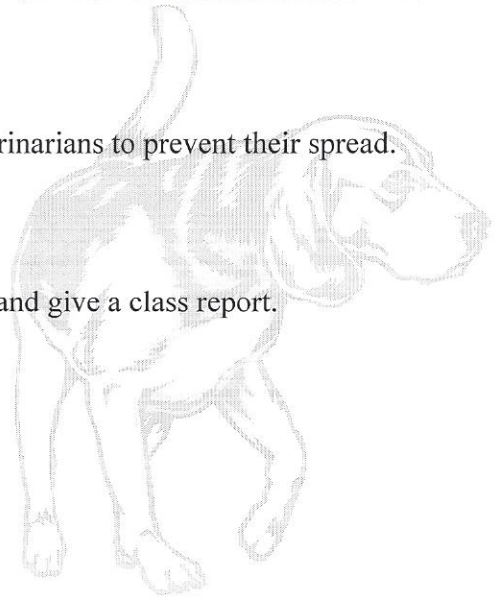
The information provided in this Material Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Acme Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Material Safety Data Sheet. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

Glossary

ACGIH ..... American Conference of Governmental Industrial Hygienists
CSA Number…Chemical Services Abstract Number
CERCLA ... Comprehensive Environmental Response, Compensation, and Liability Act
DOT ..... U.S. Department of Transportation
IARC ... International Agency of Research on Cancer
N/A ..... Not Applicable
NTP ..... National Toxicology Program
OSHA ... Occupational Safety and Health Administration
PEL ..... Permissible Exposure Limit
ppm ..... parts per million
RCRA ... Resource Conservation and Recovery Act
SARA ... Superfund Amendments and Reauthorization Act
TLV ..... Threshold Limit Value
TSCA ... Toxic Substances Control Act

Student Activity 2:
Zoonotic Research

Name_____



Purpose:
Understanding zoonotic diseases enables veterinarians to prevent their spread.

Objectives:
The students will research a zoonotic disease and give a class report.

Materials:
Internet

Procedure:
Choose a zoonotic disease and use the internet to research it and answer the following questions. Be prepared to present your report to the class.

1. Disease Category: virus ____ bacteria ____ fungi ____ parasite ____

2. Common name:

3. Scientific name:

4. What species of animal(s) carry the disease?

5. How do the animals get this disease?

6. How is it passed to humans?

7. What are the signs and symptoms for both animals and humans?

8. How will it harm humans if it is not treated?

9. What is the treatment for animals and humans?

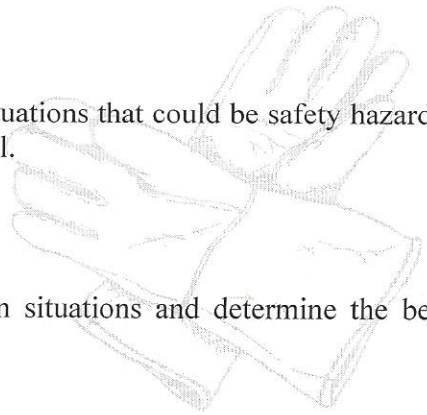
10. List specific ways that this disease can be prevented in animals and humans.

11. Where did you find your information? List at least three websites and any other publications used.

Student Activity 3:

The Safety/Sanitation Situation

Name_____



Purpose:
Every day veterinary staff is faced with situations that could be safety hazards or cause pathogens to spread throughout the hospital.

Objectives:
The students will discuss safety/sanitation situations and determine the best way to handle each situation.

Procedure:
As a group, read and discuss each situation, then determine the best course of action to be taken.

Situations:

1. You are asked to mop the surgery room floor after all the surgeries have been done. When you go to do this, you are unable to find the surgery room mop. You know there is a mop for the kennel area. Should you use this mop? Why or why not?

2. As Carrie is cleaning the surgery room, she notices a pack of sterilized instruments has been opened, but not used. What should Carrie do with the pack?

3. A dog suspected to have Leptospirosis is brought into the hospital. What precautions should be taken to ensure that this dog does not infect other dogs or humans?

4. Jim is cleaning one of the exam rooms and finds several used vaccine syringes. What types of hazard do these represent and how should Jim dispose of them?

5. You are going to assist the vet while she takes x-rays on a parrot. How should you prepare yourself?

6. A new kennel worker starts today and it is your job to talk to him about safety. How would you explain an MSDS?

7. A technician carrying a large bag of dog food slips on a wet floor and hurts his back. How could this injury have been prevented?

8. A cat bites your hand while you're taking it out of its cage. What disease could you get and how could you prevent it?

9. The vet wants you to clean and sterilize a set of surgical instruments. What are your options?

10. Every Friday Jane uses a special disinfectant to clean the exam rooms. She used the last bottle last Friday and the order for a new bottle has not arrived. The only cleaner she can find says "For Use in Outdoor Kennels Only". Should Jane use the cleaner? Why or why not?