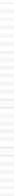




MSDS

Material **S**afety **D**ata **S**heets
8th Grade Science, Y. Cronin





WHY DO WE HAVE MSDS?

To communicate the hazards of a chemical

TO PROTECT THE ENVIRONMENT AND OURSELVES!

- 1.** Laboratory chemicals could be toxic to the environment, people, and animals.
- 2.** To protect living organisms and our environment, we must use and dispose of chemicals responsibly.
- 3.** To protect users (ourselves) and others we must avoid chemical exposure.

REGULATORY REQUIREMENTS: IT'S THE LAW!

US Environmental Protection Agency (EPA)

The EPA - a U.S. government agency (federal agency)

- The mission of EPA is to protect human health and the environment

The State of California, Occupational Safety and Health Administration (Cal-OSHA).

- The mission of Cal OSHA is “safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.”

TYPICAL SAFETY INFORMATION ON A MSDS

1. Information about the chemical and the manufacturer
2. Hazards of the chemical
3. First aid
4. Fire fighting and spill measures
5. Handling, storage, disposal
6. Personal Protective Equipment

METHODS OF *HUMAN* EXPOSURE TO CHEMICALS

1. Inhalation – breathing the chemical. Avoid by not breathing it.
2. Eyes – Avoid by wearing eye protection and handling with caution. Also don't touch your eyes.
3. Oral – Ingestion by mouth. Avoid by not drinking/eating and handling with caution.
4. Dermal – Exposure to skin. Avoid by wearing protective clothing, and gloves and handling with caution.

LETHAL DOSE-50

1. The minimum amount of a chemical required to kill 50% of a test population (usually rats, mice, rabbits).
2. Written as LD50
3. LD = *Lethal Dose*

WHICH IS WORSE, A HIGH LD-50 OR A LOW LD-50? WHY?

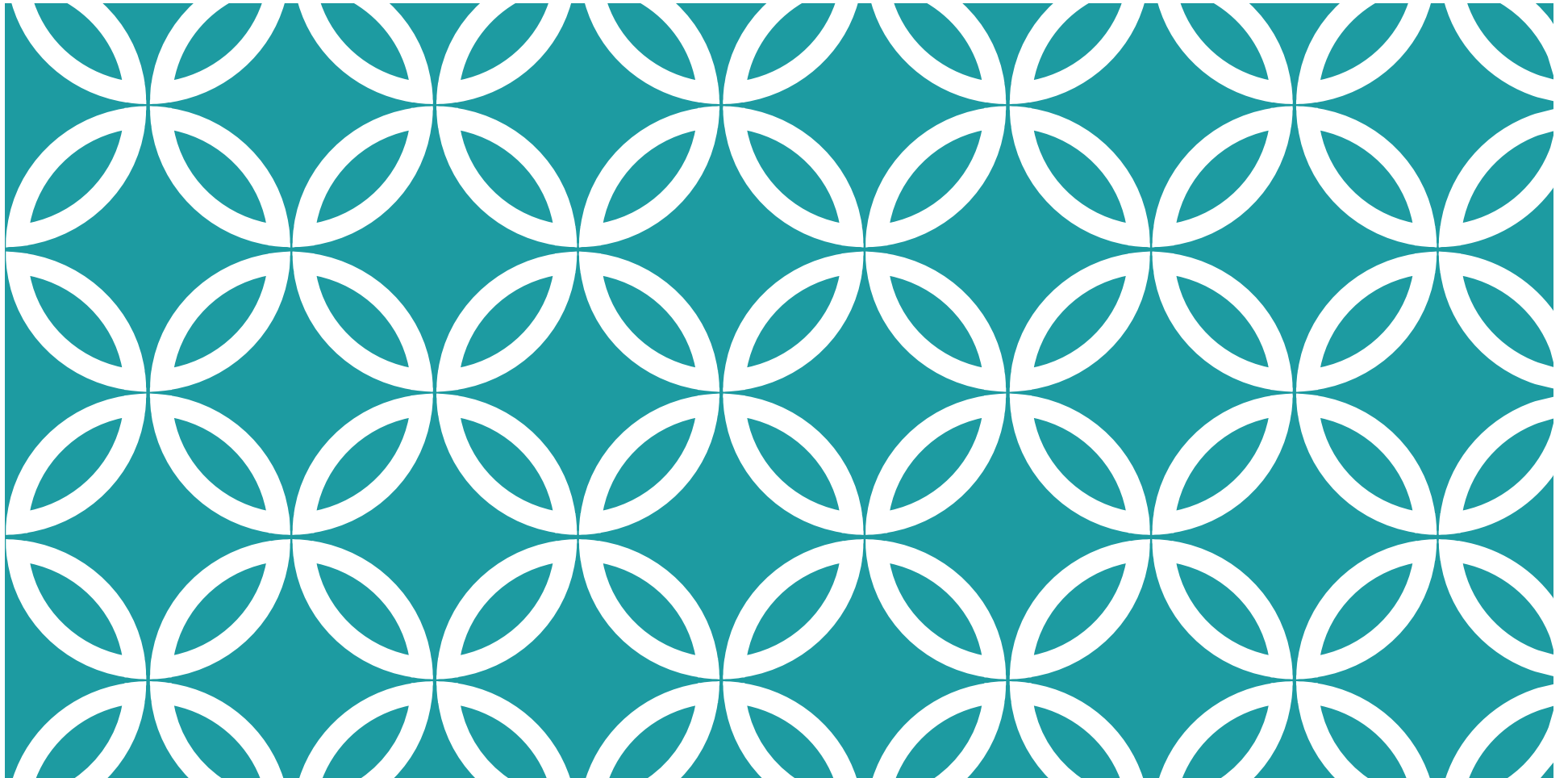
A **high** LD50 means that it would take a **large quantity** of the substance to cause death in 50% of the test subjects.

A **low** LD50 means that a **low dose (or lower quantity)** of the substance would result in death in 50% of the test subjects.

In general the substance with the higher LD50 would be a safer substance, since it would take more of the substance to result in exceeding the LD50 dose/exposure.

HOW TO PROTECT OURSELVES AND OUR ENVIRONMENT

1. Read and understand MSDS information for each chemical being used.
2. If you need assistance or don't understand how to use an equipment or material, ask your teacher!
3. Read chemical labels carefully (double check!)
4. Wear appropriate protective safety gear.
5. Store and dispose of chemicals properly.



**LET'S EXPLORE MATERIAL
SAFETY DATA SHEETS (MSDS)!**

