

# HMIS LABELING SYSTEM

Calvin uses the HMIS (Hazardous Materials Identification System) to rate chemical hazards. These labels will be found throughout campus but primarily in the Science Building and DeVries Hall. The labels provide the user and responder with a quick summary of the chemical hazards. The label does not include ALL pertinent information. Consult the MSDS to be certain that all hazardous/potentially hazardous properties of the chemical are considered.

The labels have color coded bars that relate to the following hazards:

Blue = Health

Red = Flammability

Yellow = Reactivity

White = Personal Protective Equipment

Labels rate hazards in the Health, Flammability and Reactivity sections on a scale from 0 to 4, 0 being the least hazardous and 4 being very hazardous.

## HEALTH

**0. MINIMAL HAZARD** This material poses no significant risk to health. The materials are listed on the MSDS with the following minimal hazard warning: May be harmful by inhalation, ingestion, or skin absorption. May cause eye irritation. May cause skin irritation.

**1. SLIGHT HAZARD** This material causes irritation or minor, reversible injury on contact with eyes, skin, mucous membranes, or upper respiratory tract. This category includes materials, which are listed on the MSDS as harmful only if swallowed.

**2. MODERATE HAZARD** This material causes temporary or minor, reversible injury. This category includes materials, which are listed on the MSDS as harmful if swallowed, inhaled, or absorbed through the skin.

**3. SERIOUS HAZARD** This material causes major injury upon contact unless prompt remedial action is taken and medical treatment is given. This category includes materials, which are listed on the MSDS as causing severe irritation, or extensive tissue damage.

**4. SEVERE HAZARD** This material causes permanent tissue damage, major tissue damage, or may be life threatening upon a single exposure or with repeated exposures. This category includes materials, which are listed on the MSDS as being extremely destructive to at least one type of tissue, or which may be fatal if swallowed, inhaled, or absorbed through the skin.

**[ ]1 or [ ]\*** **CHRONIC HEALTH EFFECTS** This material may cause chronic (long-term) health effects or may be carcinogenic (may cause cancer). This superscript designation is in addition to the number listing outlined above.

(A higher rating is awarded to material which is harmful through inhalation or skin contact than that which is harmful through oral ingestion – a type of exposure less likely to occur under routine working conditions. Note that ratings 1 and 2 apply to effects that are largely reversible, while ratings 3 and 4 indicate that exposure may cause permanent damage.)

## FLAMMABILITY

**0. MINIMAL HAZARD** This material is normally stable and will not burn unless heated.

**1. SLIGHT HAZARD** This material must be preheated before ignition will occur. Flammable liquids in

this category will have flash points (the lowest temperature at which ignition will occur) at or above 200° F (NFPA Class IIIB).

**2. MODERATE HAZARD** This material must be moderately heated before ignition will occur. Flammable liquids in this category have flash points between 100° and 200° F (NFPA Class II &

Class IIIA).

**3. SERIOUS HAZARD** This material is capable of ignition under almost all normal temperature conditions, and includes flammable liquids with flash points below 100° and boiling point above 100° F (NFPA Class IB & Class IC).

**4. SEVERE HAZARD** This category includes very flammable gases or very volatile liquids with flash points below 73° and boiling points below 100° F (NFPA Class IA).

## REACTIVITY

**0. MINIMAL HAZARD** This material is normally stable, even under fire conditions, and will not react with water.

**1. SLIGHT HAZARD** This material is normally stable, but can become unstable at high temperatures and pressures. This material may react with water but it will not release energy violently. This category includes materials which are listed as being sensitive to moisture.

**2. MODERATE HAZARD** This material is normally unstable and will readily undergo violent chemical change, but will not detonate. This material may react violently with water or may form potentially explosive mixtures with water.

**3. SERIOUS HAZARD** This material is capable of detonation or explosive reaction but requires a strong initiating source or must be heated under confinement before initiation. The category also includes materials which react explosively with water.

**4. SEVERE HAZARD** This material is readily capable of detonation or explosive decomposition at normal temperatures and pressures.

**[ ]1 SPECIFIC CONDITION EFFECTS** This material may react violently or explosively under certain storage conditions or when used in combinations or mixtures with specific other materials. Consult the MSDS (including the footnotes found there) for details.

## PERSONAL PROTECTION

**A:** Safety glasses should be worn when handling this material. This is the minimal rating given to any material.

**B:** Safety glasses and protective gloves should be worn when handling this material. This rating is given to materials which have the potential for skin irritation, or which may be harmful if absorbed through the skin.

**C:** Goggles, protective gloves, and a laboratory apron should be worn when handling this material. This rating is given to materials which have the potential for splashing and which are listed as having a HEALTH HAZARD RATING of 2 or higher.

**D:** A face shield, goggles, protective gloves, a laboratory apron, and an exhaust fume hood should be used when handling this material. This rating is given to materials which are capable of detonation or of explosive reaction. This rating would apply to all materials which receive a REACTIVITY HAZARD rating of 3 or 4.

**E:** Safety glasses, protective gloves, and an exhaust fume hood should be used when handling this material. This rating is given to materials which have the potential for releasing harmful vapor, mist, or dust into the air.

**H:** Splash goggles, a laboratory apron, protective gloves, and an exhaust fume hood should be used when handling this material. This rating is given to materials which, in addition to having the potential for releasing harmful vapor, mist, or dust into the air, also have the potential for splashing. Strong acids, strong bases, and strong organic solvents would fall into this category.

**PLEASE NOTE: SOME PERTINENT INFORMATION ABOUT REACTIVITY WITH SPECIFIC MATERIALS MAY BE LISTED UNDER FOOTNOTES AT THE END OF EACH MSDS**