MTAG Manufacturing Technology Advisory Group

MTAG MODULARIZED CURRICULUM

HAZARDOUS MATERIALS

Puget Sound Consortium for Manufacturing Excellence

NSF

TEACH PREP/MTAG CURRICULUM

Hazardous Materials

Lesson Plan

Time Allotment 5 Hours
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MODULE DESCRIPTION

This module teaches students how to recognize hazardous materials in the workplace.

MODULE OBJECTIVE

After completing this module, students should be able to interpret MSDS sheets and demonstrate their ability to identify hazardous materials.

MTAG COMPETENCIES INTRODUCED

C 3.6 Interpret/display MSDS sheets as required
C 7.1 Define the types of hazards (chemical, biological and physical)
C 7.3 Discuss requirements of the Hazard Communication Standard
C 7.5 Evaluate and determine hazards

MANUFACTURING SKILL STANDARDS (MSSC) INTRODUCED

P5 Safety: B. Knowledge of how to use Material Safety Data Sheets (MSDS).

PERFORMANCE CRITERIA

- Using an MSDS for a hazardous material, the student will be able to explain the importance of each section; record the flash point, explosive limits, specific gravity, and evaporation rate; and state in writing how each of these can contribute to a fire/explosion hazard.
- Given the three types of hazards (chemical, biological and physical), the student will be able to give three examples of each.
- The student will be able to locate and read MSDSs and state the material's hazards, distinguish between acute and chronic exposures, and identify necessary protective equipment when working with these materials.
- Given three different scenarios, the students will be able to determine the degree of hazard presented in each scenario and recommend appropriate and immediate as well as corrective action.

SEQUENCING

Introduction
How Materials Enter the Body
Identifying Hazardous Materials
Material Safety Data Sheets
Hazardous Ingredients Data
Physical, Fire and Explosion, and Reactivity Data
Health Hazard, Preventative, and Control Measures
Skill Check
Module Evaluation

EQUIPMENT AND SUPPLIES NEEDED

Two dropper bottles, one with water and the other with rubbing alcohol
Cotton balls
Individual protective equipment: safety glasses, breathing equipment, gloves, etc.
Instructor Note: This module introduces students to the MSDS using three examples that illustrate many of the properties covered by the module. These can be substituted by MSDS's for substances with which instructors are more familiar so long as they address the same critical properties.

INDEX OF INSTRUCTIONAL MATERIALS

RECOMMENDED STUDENT PREREQUISITES

Completed the following module:
Safety in Manufacturing.