

# **Hazardous Materials, Personal Safety, And Refinish Safety**

**Objectives Worksheet**



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# *Module 1 - Safety Data Sheets*



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**SDS Layout****SDS Detailed Information**

Employers are allowed to \_\_\_\_\_ an SDS for a material's use at the \_\_\_\_\_. The revised SDS may not contain less information than the original SDS, and must contain the specified 16 sections, but may include information on hazards relating to the specific workplace, and include local laws, such as waste disposal laws and additional exposure limits. The original SDS must be kept on file at the workplace.

**Section 1: Product Identification**

This includes the product name, product maker name and address and \_\_\_\_\_ phone numbers.

**Section 2: Hazards Identification**

This contains all of the hazards of the \_\_\_\_\_ that should be identified on the label.

**Section 3: Composition / Information on Ingredients**

This lists material ingredients and the \_\_\_\_\_ of each ingredient.

**Section 4: First Aid Measures**

This explains how to treat a \_\_\_\_\_ who has been overexposed and emergency steps to take for immediate treatment.

**Section 5: Firefighting Measures**

This section is for flammables and combustibles. If a material is flammable, it can \_\_\_\_\_ catch fire and burn rapidly or \_\_\_\_\_. The section lists protective equipment to wear if a fire starts, and both the \_\_\_\_\_ and \_\_\_\_\_ explosion limits (UEL and LEL) of a product. The type of extinguisher required for a fire (A, B, C, or D) is identified.

These types include:

- A – ordinary combustibles. Class A fire extinguishers use water.

- B – flammable liquids. Class B and C fire extinguishers use carbon dioxide.
- C – electrical fires.
- D – combustible \_\_\_\_\_. Dry powder is used for extinguishing class D fires.

Most fires in collision repair facilities are A, B, or C fires and there are “A-B-C” fire extinguishers available.

### **Section 6: Accidental Release Measures**

This specifies emergency procedures for what to do in case of a \_\_\_\_\_ or \_\_\_\_\_ release, how to contain the spill or release, and instructions for cleanup.

### **Section 7: Handling And Storage**

This identifies precautions for safe handling, and how to \_\_\_\_\_ the material.

### **Section 8: Exposure Controls / Personal Protection**

This section identifies what \_\_\_\_\_ protection is required when using the material, what protective equipment to \_\_\_\_\_, and engineering controls, such as \_\_\_\_\_ requirements.

### **Section 9: Physical And Chemical Properties**

This section describes how the chemical looks in its \_\_\_\_\_ state, how quickly it pours if a liquid, or appears like if a powder or solid.

### **Section 10: Stability And Reactivity**

This section identifies what the chemical reacts to, and its chemical \_\_\_\_\_.

### **Section 11: Toxicological Information**

This section identifies the routes of how a worker can be exposed to the material, as well as acute and chronic effects of exposure. Chemicals can \_\_\_\_\_ the body from either contact, absorption, ingestion, or inhalation.

Acute exposure is the physical effects a worker might feel after being exposed to one high dose of the material or several doses over a short time.

Chronic exposure is the physical effects a worker might feel after being exposed to repeated doses over a long time.

### **Section 12: Ecological Information (Non-mandatory)**

Sections 12 – 15 are not regulated by OSHA so content in these sections is not \_\_\_\_\_.

**Section 12. Ecological Information**

**Section 13. Disposal Considerations**

**Section 14. Transport Information**

**Section 15. Regulatory Information**

### **Section 16: Other Information**

This section lists the date of preparation and last revision.

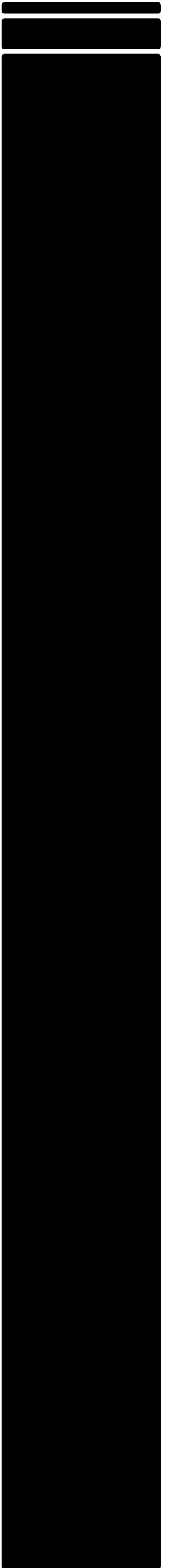
An SDS does not contain \_\_\_\_\_ emergency contact information.

If a product is no longer used at a facility, it is required that the SDS or at least product inventory sheets be kept on file for \_\_\_\_ years for medical purposes.

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# *Module 2 - Labels*



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## **Label Indicators**

### **Label Types**

There are three types of labels commonly used for identifying hazardous materials. These labels include \_\_\_\_\_, workplace, and other means of identification. \_\_\_\_\_ of these labels may replace the SDS.

### **Supplier Label Requirements**

All hazardous chemicals shipped after June 1, \_\_\_\_\_, must be labeled with specified elements including \_\_\_\_\_, signal words, hazard statements, and precautionary statements.

If there is a container without a label do not \_\_\_\_\_ it until you find out from the repair facility manager, what the material is. Once you have determined what the product is, place a label on the container.

### **Hazard Pictograms**

Pictograms are graphic symbols used to communicate specific information about the hazards of a material. They are placed on \_\_\_\_\_ being shipped or transported from a manufacturer, importer, or distributor.

### **Exclamation Mark**

The Exclamation mark appears on materials with \_\_\_\_\_ severe toxicity as compared to material identified by the skull and crossbones.

### **Signal Word**

There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only " \_\_\_\_\_ " should appear on the label.

## **Label Types**

### **Inner And Outer Containers**

The supplier does not have to label the outer container if the \_\_\_\_\_ container label can be seen and read through the outer container.

**When Workplace Labels Are Required**

Workplace labels are required when the original supplier label is \_\_\_\_\_ or defaced. Additionally workplace labels are required if a product is \_\_\_\_\_ or diluted and kept for further use, such as mixing an all-purpose cleaner solution into a spray bottle.

**NFPA Number Codes**

An NFPA code has five numbers, the higher the number, the higher the danger level. With this system:

- \_\_\_ is very low danger.
- \_\_\_ is slightly dangerous.
- \_\_\_ is moderately dangerous.
- \_\_\_ is seriously dangerous.
- \_\_\_ is severely dangerous.

# *Module 3 - Hazardous Materials*



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## **Hazardous Material Exposure**

### **Acute And Chronic Exposure**

Often a phenomenon called “\_\_\_\_\_ (sensory) fatigue” occurs after being exposed to a chemical for a period of time. The chemical can no longer be \_\_\_\_\_, even though the exposure is over the allowable limits.

### **Routes Of Entry**

Hazardous materials can enter the body by breathing or \_\_\_\_\_. This does not mean only by eating or drinking the materials, but such unsanitary practices such as not washing hands before eating, eating or smoking in an area where hazardous materials are used or stored, or touching hands to the face when sneezing or coughing.

Absorption can occur through the skin or eyes. Skin is porous, like a sponge. This includes picking up a solvent-soaked cloth, or \_\_\_\_\_ hands with gasoline or other solvents.

## **Hazardous Material Categories**

### **Isocyanates**

Isocyanates are also released when a product is opened and mixed. \_\_\_\_\_ rubber gloves are recommended to prevent skin exposure. Refinisher's \_\_\_\_\_ are recommended to prevent or reduce eye exposure. If an isocyanate-containing finish splashes on bare skin, wash the exposed area with soap and water for 15 minutes. Refer to the product SDS for specific recommendations.

Isocyanate vapors are released when \_\_\_\_\_, pouring, and applying these products. They are also released when \_\_\_\_\_ a panel with a catalyzed finish residue.

### **Bloodborne Pathogens**

Bloodborne pathogens include \_\_\_\_\_ or hepatitis \_\_\_\_\_ viruses that may be present in blood stains. Detailing technicians may be at the highest risk of exposure.

According to the Centers For Disease Control, “HIV was detectable by tissue-culture techniques \_\_\_–\_\_\_ days after drying, but the rate of inactivation was rapid.” The hepatitis

B virus can live at least one week, and possibly up to \_\_\_\_\_ days in a blood stain outside the body. Following any chance of exposure to bloodborne pathogens, employees should be instructed to see a physician.

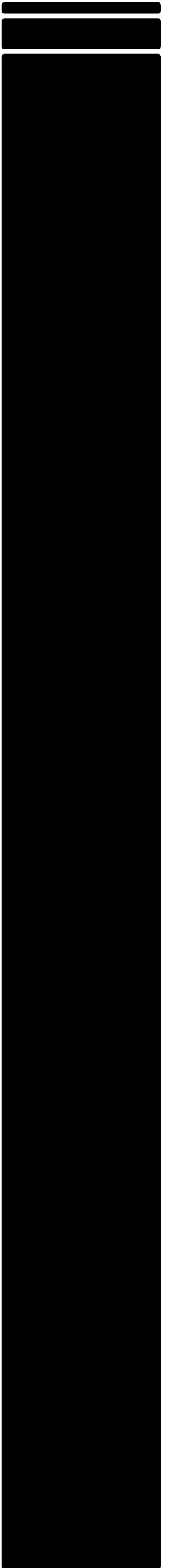
### **Carcinogens**

Certain materials contain known \_\_\_\_\_ (cancer-causing agents). This is a \_\_\_\_\_ effect of exposure to a chemical.

These chemicals are listed by different agencies, such as OSHA, the United States National Toxicology Program (NTP), and the International Agency for Research on Cancer (IARC).



# *Module 4 - Personal Protective Equipment*



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**Hearing Protection****Decibel Levels**

Jet engine	140 dB
Riveting hammer	130 dB
Hammer banging on sheet metal	100 dB
Ventilating fan @708 L/sec (1500 CFM)	90 dB
Arc welder	____dB
Inside a car @ 50 mph	75 dB
Ordinary conversation	____ dB
Quiet whisper	30 dB

**Allowable Sound Levels**

The extent of damage depends primarily on the \_\_\_\_\_ of the noise and \_\_\_\_\_ of the exposure.

Depending on location, hearing protection is required when noise exposures begin to exceed 85 dB, averaged over eight working hours, or an eight-hour time-weighted average (TWA). Hearing protection is recommended, but not required, when noise exposures are at 85 dB TWA. If over 90 dB, the average is over a shorter time. The chart shows how the allowable duration decreases as the average noise level increases. Information on dB levels for specific equipment is provided by equipment makers.

Having to raise your voice to be heard is a good indication that hearing protection is required. At 85 dB, it is necessary to raise your voice to be heard from 1 ft. You need to shout to be heard from 2 ft.

## **Respiratory Protection**

### **NIOSH**

Any respirator for use in the workplace in North America must be approved by the National Institute for Occupational Safety and \_\_\_\_\_ (NIOSH). NIOSH is responsible for testing and approving respirators. Respirators approved by NIOSH undergo a testing and certification process. The use of non-approved respirators is a violation of \_\_\_\_\_ and could result in citations and fines.

### **Particulates**

When choosing the proper \_\_\_\_\_-\_\_\_\_\_ respirator, it may be necessary to distinguish between particulates and vapors. Particulates are solid or liquid particles suspended in the air. Particulates include fumes, which are the solid particulates given off by welding.

\_\_\_\_\_ are solid particulates from sanding or grinding. Dust particulates are larger than fume particulates.

Dust / mist masks are used only for \_\_\_\_\_ particulates that can be seen, such as dust. Do not protect against hazardous contaminants because they are generally loose-fitting, and difficult to achieve a proper face seal.

### **Grade D Air Specifications**

Current Grade D requires that \_\_\_\_\_ must always be monitored on a supplied air breathing system.

### **Respirator Fit-Testing**

Respirators with a face seal must be properly fit-tested before using the respirator on-the-job. Fit-testing must be done \_\_\_\_\_, whenever a different respirator \_\_\_\_\_ is used, and if there is a change in the employee's physical condition which could affect respirator fit. Examples include dental work, significant weight change, or facial scars.

# *Module 5 - Repair Facility Safety*

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**Work And Tool Safety****Ultraviolet Ray Protection**

A lens shade of 10 - \_\_\_\_\_ is recommended for GMA (MIG) welding, and a lens shade of 11 - \_\_\_\_\_ is recommended for aluminum and GTA (TIG) welding.

Another safety measure is to use protective welding curtains that shield a portion of the ultraviolet rays from the welding arc.

**Workplace Education****Written Hazardous Communication Program**

Each workplace is responsible for starting and maintaining a written \_\_\_\_\_  
\_\_\_\_\_ program for all employees who work with hazardous materials.

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