

CHEMICAL HAZARDS Part 2- Safety Data Sheets and Labeling

Safety Data Sheets (SDS's)

SDSs are prepared by manufacturers of potentially hazardous products. All SDSs are written in a standard format called the Globally Harmonized System. Every sheet contains 16 pieces of information. The order of the information is the same for all sheets:

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/ effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); ACGIH Threshold Limit Values (TLVs); and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the SDS where available as well as appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

*Section 12, Ecological information**

*Section 13, Disposal considerations**

*Section 14, Transport information**

*Section 15, Regulatory information**

Section 16, Other information, includes the date of preparation or last revision.

* indicates sections that are not required as a minimum standard, but may be included at the manufacturer's discretion.

SDS's are used to convey information to you about the hazards associated with substances found in the practice. There should be an SDS for each hazardous product in your workplace.

- Know where a copy of your Hazard Communication Program is kept. Read and understand this document.
- Know where your SDS collection is stored. Your employer should provide you with training on how to read Safety Data Sheets (more information is also provided below.)
- Know which products contain hazardous substances. You can refer to the list in your Hazard Communication Program.

- Read the label on the products you use.
- Know how to find a specific SDS.
- Before you use a product, read the SDS for that product.
- If you cannot find an SDS on any hazardous product in your work area, inform your supervisor or safety coordinator so an SDS can be ordered.

Primary Labels

Manufacturers of hazardous chemicals are required to label all chemical containers with a specified format that includes the following information:

- **Name, Address and Telephone Number** of the chemical manufacturer, importer or other responsible party.
- **Product Identifier** is how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in section 1 of the SDS.
- **Signal Words** are used to indicate the relative level of severity of the hazard and alert the reader to a potential hazard on the label. There are only two words used as signal words, “Danger” and “Warning.” Within a specific hazard class, “Danger” is used for the more severe hazards and “Warning” is used for the less severe hazards. 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 “Danger” should appear on the label.
- **Hazard Statements** describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: “Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin.” All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard classification categories, and chemical users should always see the same statement for the same hazards no matter what the chemical is or who produces it.
- **Precautionary Statements** describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling. There are four types of precautionary statements: prevention (to minimize exposure); response (in case of accidental spillage or exposure emergency response, and first-aid); storage; and disposal. For example, a chemical presenting a specific target organ toxicity (repeated exposure) hazard would include the following on the label: “Do not breathe dust/fume/gas/mist/vapors/spray. Get medical advice/attention if you feel unwell. Dispose of contents/container in accordance with local/regional/ national and international regulations.”

A forward slash (/) designates that the classifier can choose one of the precautionary statements. In the example above, the label could state, “Do not breathe vapors or spray. Get medical attention if you feel unwell. Dispose of contents in accordance with local/regional/national/international regulations.” See Examples 1 and 2A of this document as an example.

In most cases, the precautionary statements are independent. However, OSHA does allow flexibility for applying precautionary statements to the label, such as combining statements, using an order of precedence or eliminating an inappropriate statement.

Precautionary statements may be combined on the label to save on space and improve readability. For example, “Keep away from heat, spark and open flames,” “Store in a well-ventilated place,” and “Keep cool” may be combined to read: “Keep away from heat, sparks and open flames and store in a cool, well-ventilated place.” Where a chemical is classified for a number of hazards and the precautionary statements are similar, the most stringent statements must be included on the label. In this case, the chemical manufacturer, importer, or

distributor may impose an order of precedence where phrases concerning response require rapid action to ensure the health and safety of the exposed person. In the self-reactive hazard category Types C, D, E or F, three of the four precautionary statements for prevention are:

- “Keep away from heat/sparks/open flame/hot surfaces. - No Smoking.”;
- “Keep/Store away from clothing/.../ combustible materials”;
- “Keep only in original container.”

These three precautionary statements could be combined to read: “Keep in original container and away from heat, open flames, combustible materials and hot surfaces. - No Smoking.” Finally, a manufacturer or importer may eliminate a precautionary statement if it can demonstrate that the statement is inappropriate.

- **Supplementary Information.** The label producer may provide additional instructions or information that it deems helpful. It may also list any hazards not otherwise classified under this portion of the label. This section must also identify the percentage of ingredient(s) of unknown acute toxicity when it is present in a concentration of $\geq 1\%$ (and the classification is not based on testing the mixture as a whole). If an employer decides to include additional information regarding the chemical that is above and beyond what the standard requires, it may list this information under what is considered “supplementary information.” There is also no required format for how a workplace label must look and no particular format an employer has to use; however, it cannot contradict or detract from the required information.

An example of an item that may be considered supplementary is the personal protective equipment (PPE) pictogram indicating what workers handling the chemical may need to wear to protect themselves. For example, the Hazardous Materials Identification System (HMIS) pictogram of a person wearing goggles may be listed. Other supplementary information may include directions of use, expiration date, or fill date, all of which may provide additional information specific to the process in which the chemical is used.

Pictograms are graphic symbols used to communicate specific information about the hazards of a chemical. On hazardous chemicals being shipped or transported from a manufacturer, importer or distributor, the required pictograms consist of a red square frame set at a point with a black hazard symbol on a white background, sufficiently wide to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label.

The pictograms OSHA has adopted improve worker safety and health, conform with the GHS, and are used worldwide. Here is the pictogram chart:


<p>Health Hazard</p> <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	<p>Flame</p> <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<p>Exclamation Mark</p> <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p> <ul style="list-style-type: none"> • Gases Under Pressure 	<p>Corrosion</p> <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals 	<p>Exploding Bomb</p> <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
<p>Flame Over Circle</p> <ul style="list-style-type: none"> • Oxidizers 	<p>Environment (Non-Mandatory)</p> <ul style="list-style-type: none"> • Aquatic Toxicity 	<p>Skull and Crossbones</p> <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic)

Secondary or “Workplace” Labeling of Containers

In accordance with policy established by your employer, all containers of hazardous substances must be labeled with the product name and appropriate hazard warnings. As long as the original label remains attached to the container and is legible, all requirements have been met.

If you transfer a substance to a secondary container or the original label becomes unreadable, make sure that an acceptable secondary, or “workplace” label is applied to the container. Refer to your Hazard Communication Program for secondary labeling systems established by your employer. At a minimum, the secondary label must include the product identifier and words, pictures, symbols or combination thereof, which in combination with other information immediately available (such as an SDS collection), provides information regarding the hazards associated with the product. Workplace labels may also utilize pictograms as described in the chart above.

An example of a suitable workplace label is as follows:

Product Name:	
Batch number:	
	
Warning Harmful if swallowed	
Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Dispose of contents/container in accordance with local, state and federal regulations.	
First aid: If swallowed: Call a doctor if you feel unwell. Rinse mouth.	
Your Company Name, Address, City, State, Zip	Telephone (888) 888-8888

² The manufacturer of this chemical determined that calling a doctor was the most appropriate emergency medical advice; therefore, it is listed as part of the first-aid procedures.

³ The downstream users must familiarize themselves with the proper disposal methods in accordance with local, regional, state and federal regulations. It is impractical to expect the label preparer to list all potential regulations that exist.

If you find inadequately labeled containers, immediately notify your supervisor or safety coordinator.

Under some circumstances, you can have unlabeled containers in use. For example, you do not need to attach a label to a container if you are the only person who will be using it and the contents will be used up before your shift ends, flea dips might fit this situation. If you mix only enough flea dip to use on one animal and the container will be emptied between baths, no label is required.

SDS/ LABELING SAFETY QUESTIONS

Are all employees familiar with the practice's hazard communication program, including Safety Data Sheets (SDS), chemical labels, and how to read them?

Do employees understand:

- An explanation of what an SDS is and how to use and obtain one?
- SDS contents for each hazardous substance or class of substances?
- Identification of where they can access the practice's written hazard communication program and where hazardous substances are present in their work area?
- The physical and health hazards of substances in the work area, how to identify them, and specific protective measures to be used?

Who can employees come to for assistance in obtaining, reading and understanding SDSs and container labels?

ADDITIONAL TRAINING RESOURCES

Cal/OSHA List of Hazardous Chemicals: <https://www.dir.ca.gov/title8/339.html>

OSHA Label and Pictogram guidance: <https://www.osha.gov/Publications/OSHA3636.pdf>