



OSHA Hazard Communication Standard Safety Training Program



Goal

The goal of the Hazard Communication Standard (HCS) is to ensure that the hazards of all chemicals produced or imported are evaluated, and details regarding their hazards are transmitted to employers and employees.

Objectives

Employers and employees will learn the requirements of chemical labeling and the use of safety data sheets (SDSs) to identify chemical properties; physical health and environmental hazards; protective measures; and safety precautions for handling, storing, and transporting chemicals.

Background

The Occupational Safety and Health Administration (OSHA) established the HCS in 1983 to reduce chemical-related illnesses and injuries, and to give employees "the right to know" when working with hazardous materials. Revised in 2012, the HSC ([29 Code of Federal](#)

[Regulations \(CFR\) 1910.1200](#)) adds uniform requirements for classifying chemicals on labels and SDSs to help employees and employers better understand workplace chemical hazards.

A key revision of the HCS is that it now aligns with the [United Nations' Globally Harmonized System \(GHS\)](#) of Classification and Labelling of Chemicals. This revision improves the quality and consistency of the classification and labeling of chemicals, giving employees quick visual notations to help prevent illness and injuries. It also improves global trade conditions for chemical manufacturers. The revision also requires that employers produce SDSs in a standard 16-section format and train employees – especially those who may not be able to read – to understand and recognize the new label elements, pictograms, and SDS format. Employers, chemical manufacturers, importers, and distributors are all responsible for disseminating information about chemical and physical hazards and protective measures under the HCS.

Recommendations for Employers

OSHA recommends that employers take these steps to implement an effective hazard communication program in the workplace:

- **Obtain and become familiar with OSHA's Hazard Communication Standard.** Employers can find the standard at [29 CFR 1910.1200\(e\)-\(h\)](#), at www.osha.gov.
- **Assign staff to coordinate and run the HCS program.** This includes designating the individual responsible for training.
- **Train all employees in a manner and language they understand.** Training should cover hazardous chemicals they might encounter in their immediate work areas before an initial assignment and when a new hazard is introduced. Employers must keep training records for each employee.

Employees must receive training in:

- detecting the presence or release of a hazardous chemical in the work area;
- understanding the physical and health hazards of the chemicals in the work area;
- using appropriate work practices and personal protective equipment (PPE) to protect themselves from chemical hazards;
- recognizing the details of the employer's hazard communication program, including an explanation of the labeling system and the SDS; and

- knowing how to find and use chemical hazard information.

Employees must receive information on:

- any operations in their work areas where hazardous chemical are present; and
 - the location and availability of the written hazard communication program, including a required list of hazardous chemicals and SDSs.
- **Label all hazardous chemical containers properly.** Employers must label all containers with the product identifier and general information about the chemical's hazards. If labels are removed or defaced, employers must relabel items. Employers should assign one person responsible for ensuring that all hazardous chemical containers are properly labeled.

While employers may use various labeling methods, they must include all required information in the label. Employees must have access to complete information about a chemical's hazards. Labels must be legible and prominently displayed. Employers must present hazard information in languages their employees speak, as long as the information is also offered in English

Exceptions to the container-labeling requirement for employers are:

- Employers are not required to label portable containers if they contain hazardous chemicals transferred from labeled containers and are intended for the immediate use by

the employee who transferred the chemical.

- Pipes or piping systems, engines, fuel tanks, or other operating systems in a vehicle are not considered containers. Still, employers must inform employees of hazards associated with chemicals contained in unlabeled pipes in their work areas.
- For individual stationary process containers, the workplace may use signs, placards, process sheets, batch tickets, operating procedures, or other written materials instead of affixing labels. Using the alternate method is permitted if it identifies the container, includes all required information, and is available to workers in their work area during their shift. (See [29 CFR 1910.1200\(f\)\(6\)](#) for workplace labeling).
- Any chemical substance or mixture subject to the [Environmental Protection Agency Toxic Substances Control Act's labeling requirements and regulations](#) are exempted.

- **Obtain and make available to employees an SDS for each hazardous chemical used at the facility.** While both labels and SDSs must accompany hazardous chemicals, SDSs are a complete source of information about a chemical's hazards. SDSs must contain details about all chemical hazards in a standard 16-section format.

Sections 1-8 of the SDS contain:

- identification;
- hazard(s);

- composition;
- first-aid measures;
- fire-fighting measures;
- accidental release measures;
- handling and storage; and
- exposure controls/personal protection.

Sections 9-11 and 16 of the SDS contain:

- physical and chemical properties;
- stability and reactivity information;
- toxicological information; and
- other information, including date of preparation or last revision of the SDS.

The SDS must also contain **sections 12-15** to align with the GHS, but OSHA does not enforce these sections, which other agencies handle.

If an employer does not receive an SDS from a supplier, the employer must request one. Employers must also give employees access to the SDSs in their work areas and during their shifts in a physical binder or electronic format.

If employers provide the SDSs electronically, employers must:

- train employees to access the SDSs electronically;
- back up the electronic system where the SDSs are kept;
- make hard copies of the SDSs accessible to employees and medical personnel; and
- assign one person to maintain and update SDSs.

Example of the First Page of an SDS

1. IDENTIFICATION OF THE SUBSTANCE

Product Name	WD40 Aerosol
Application	Anti-squeak, moisture repellent, releasing agent
Supplier	WD40 Company Limited PO Box 440 Kilm Farm Milton Keynes, UK MK11 3LF Tel: 01908.555400 Fax: 01908.266900 Email: info@wd40.co.uk
Emergency Telephone	00 44 1908 555 400

2. HAZARD IDENTIFICATION

Flammable. Repeated exposure may cause skin dryness.

Classification	R10, R66
Environment	This product is not expected to be hazardous to the environment.
Physical and Chemical Hazards	Aerosol containers can explode when heated, due to excessive pressure build-up. When sprayed on a naked flame or any incandescent material the aerosol vapors can be ignited.
Human Health	See section 11 for additional information on health hazards. This substance has no evidence of carcinogenic properties.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
Carbon Dioxide	204-656-9	124-38-9	1-5%	---
Petroleum Distillate	265-150-3	64742-48-9	60-80%	Xm, R65, R10, R66

The full text for all R-phrases are displayed in section 16.

4. FIRST-AID MEASURES

Inhalation	Move the exposed person to fresh air at once. Keep the affected person warm and at rest. Get prompt medical attention.
Ingestion	DO NOT INDUCE VOMITTING. NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Immediately rinse mouth and drink plenty of water. Get medical attention.
Skin Contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye Contact	Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eyelids. Continue to rinse for at least 15 minutes. Get medical attention if discomfort continues.

5. FIRE-FIGHTING MEASURES

Extinguishing Media	Use foam, water spray, fog, mist, dry chemicals, sand, dolomite, etc.
Special Fire-Fighting Procedures	Containers close to fire should be removed or cooled with water. Avoid water in a straight hose stream; will scatter and spread fire.
Unusual Fire & Explosion Hazards	Aerosol cans may explode in a fire.

- **Establish a written hazard communication program.** The program must:
 - specify how the employer will comply with labeling requirements for chemical containers in the workplace and chemical containers shipped to other workplaces;
 - provide SDSs and other warnings to employees and downstream employers; and
 - train and inform employees about chemical hazards and protective measures.

The written program must list all hazards, including chemicals and raw materials in each work area. OSHA recommends using the product identifier (the name that appears on the hazardous chemical's label and SDS) to make it easier for employers to track the status of SDSs and labels of a particular hazardous chemical.

Employers must update their programs to account for any new chemicals or hazards in the workplace, so they are always relevant.

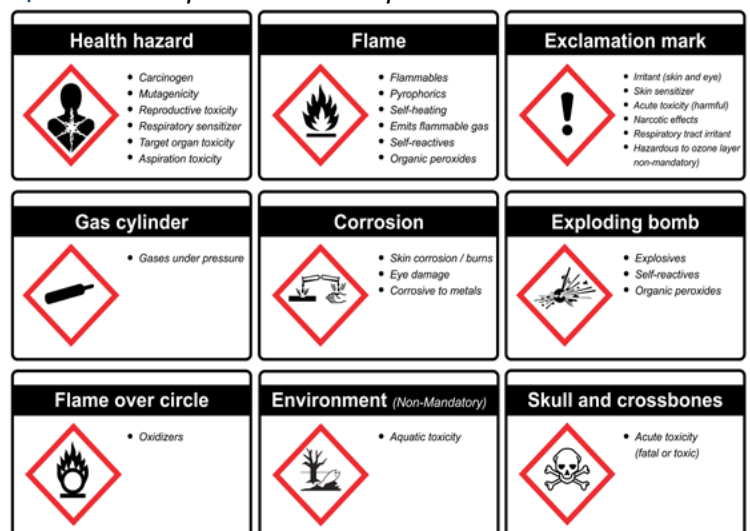
on the appropriate product identifier. However, the same identifier must appear on the label and in Section 1 of the SDS.

- **Signal Word**
Signal words on the label are used to alert the reader of a potential hazard and indicate the hazard's relative severity. Only two signal words are used ("**danger**" or "**warning**"). A label must contain only one of the two words, no matter how many hazards a chemical may have. "Danger" is used for more severe hazards within a class, and "warning" is for less severe hazards.
- **Pictograms**
Pictograms are **graphic symbols used to communicate information about a chemical's hazards**. They consist of a red square frame set at a point with a black hazard symbol on a white background. They must be wide enough to be visible. *Note: While the GHS uses a total of nine pictograms, as depicted in the figures below, OSHA enforces only eight. The environmental pictogram is not required. The eight pictograms required by OSHA do not replace the diamond-shaped U.S. Department of Transportation labels required to transport chemicals.*

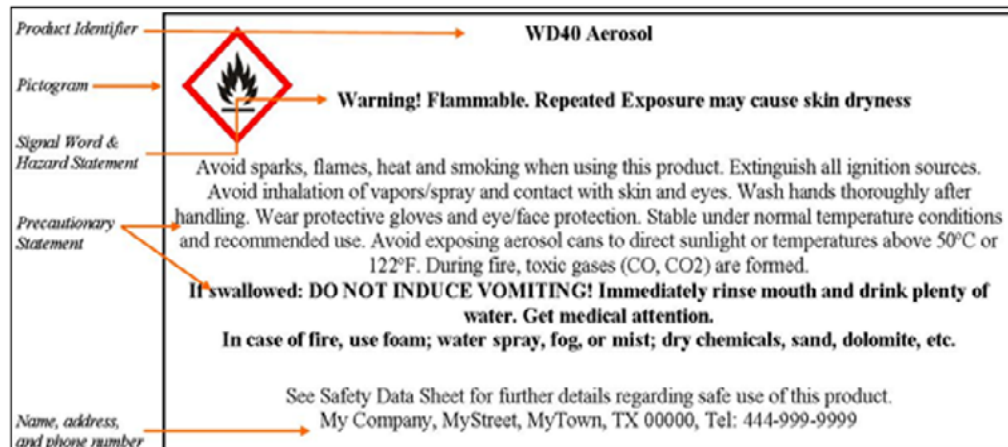
Manufacturer, Importer, & Distributor Responsibilities

Containers shipped to employers by chemical manufacturers, importers, and distributors must be labeled to show:

- **Product Identifier**
The product identifier is the **name, code number, or batch number** used for the hazardous chemical on a label or in the SDS. The manufacturer, importer, or distributor can decide



Example of a GHS-Compliant Label



The GHS hazard pictograms, signal word, and hazard statements should be located together on the label. The actual label format or layout is not specified in the GHS. National authorities may choose to specify where information should appear on the label or allow supplier discretion.

- **Hazard Statements**

A hazard statement describes the nature, and in some cases, the degree of a chemical hazard. Example: "Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin."

- **Precautionary Statements**

Precautionary statements describe recommended measures for preventing or minimizing adverse effects resulting from exposure to the hazardous chemical or improper storage or handling of it. OSHA allows flexibility for combining, ordering by precedence, or eliminating inappropriate statements. Example: "Keep away from heat, sparks, 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."

- **Contact Information**

Contact information should include the name, address, and telephone number of the chemical manufacturer, importer, or another responsible party.

The HCS mandates that chemical manufacturers, importers, and distributors that become newly aware of important information about a chemical's hazards must revise the label within six months.

Chemical manufacturers, importers, and distributors must also provide downstream users with an SDS for each chemical they produce or import. The SDS must be provided at the time of initial product shipment. If the chemical manufacturer, importer, or employer preparing the SDS is aware of important information about a chemical's hazards or ways to protect against them, the new information must be added to the SDS within three months. Each SDS must be in English, though it may also be in other languages. The information must be provided in the standard 16-section format.

Information on the SDS

According to OSHA, a hazardous substance is any chemical that can cause harm to the environment or human life through exposure via inhalation, ingestion, or assimilation. If a product covered by the HCS meets the criteria to be included in a hazard class or category, it is considered to be a "Hazardous Product" and must have an SDS. The HCS specifies the sections and content for the SDS. The section number and heading on an SDS must be presented in the specific order, as follows:

SDS Sec.	SDS Heading	Special Information Elements
1.	Identification	<ul style="list-style-type: none"> • product identifier (e.g., product name); • other means of identification (e.g., product family, synonyms); • recommended use; • restrictions on use; • supplier identifier (e.g., name, full address, and phone number); and • emergency telephone number and any restrictions on the use of that number, if applicable.
2.	Hazard Identification	<ul style="list-style-type: none"> • hazard classification (class, category, or subcategory) of substance or mixture or a description of the identified hazard for "Physical or Health Hazards Not Otherwise Classified"; • label elements: <ul style="list-style-type: none"> ○ symbol (image) or the name of the symbol; ○ signal word; ○ hazard statement(s); and ○ precautionary statement(s). • other hazards which do not result in classification (e.g., molten metal hazard).
3.	Composition/Information or Ingredients	<ul style="list-style-type: none"> • when a hazardous product is a material or substance: <ul style="list-style-type: none"> ○ chemical name; ○ common name and synonyms; ○ Chemical Abstract Service (CAS) registry number and any unique identifiers; and ○ chemical name of impurities, stabilizing solvents, or additives. • for each material or substance in a mixture that is classified in a health hazard class: <ul style="list-style-type: none"> ○ chemical name; ○ common name and synonyms;

		<ul style="list-style-type: none"> ○ CAS registry number and any unique identifiers; and ○ concentration> <p><i>Note: Confidential business information rules can apply.</i></p>
4.	Composition/Information or Ingredients	<ul style="list-style-type: none"> • first-aid measures by route of exposure: <ul style="list-style-type: none"> ○ inhalation; ○ skin contact; ○ eye contact; and ○ ingestion. • most important symptoms and effects (acute or delayed); and • immediate medical attention and special treatment, if necessary.
5.	Fire-Fighting Measures	<ul style="list-style-type: none"> • suitable extinguishing media; • unsuitable extinguishing media; • specific hazards arising from the hazardous product; and • special protective equipment and precautions for fire-fighters.
6.	Accidental Release Measures	<ul style="list-style-type: none"> • personal precautions, protective equipment, and emergency procedures; and • methods and materials for containment and cleaning up.
7.	Handling and Storage	<ul style="list-style-type: none"> • precautions for safe handling; and • conditions for safe storage (including incompatible materials).
8.	Exposure Controls/Personal Protection	<ul style="list-style-type: none"> • control parameters, including occupational exposure guidelines or biological exposure limits and the source of those values; • appropriate engineering controls; and • individual protection measures (e.g., personal protective equipment).
9.	Physical and Chemical Properties	<ul style="list-style-type: none"> • appearance, such as physical state or color; • odor; • odor threshold; • pH; • melting point/freezing point; • initial boiling point/boiling range; • flashpoint; • evaporation rate;

		<ul style="list-style-type: none"> • flammability (solid, gas); • lower flammable/explosive limit; • upper flammable/explosive limit; • vapor pressure; • vapor density; • relative density; • solubility; • n-octanol-water partition coefficient; • auto-ignition temperature; • decomposition temperature; and • viscosity.
10.	Stability and Reactivity	<ul style="list-style-type: none"> • reactivity; • chemical stability; • possibility of hazardous reactions; • conditions to avoid (e.g., static discharge, shock, or vibration); • incompatible materials; and • hazardous decomposition products.
11.	Toxicological Information	<p>Concise but complete description of the various toxic health effects and the data used to identify those effects, including:</p> <ul style="list-style-type: none"> • information on the likely routes of exposure (inhalation, ingestion, skin, and eye contact); • symptoms related to the physical, chemical, and toxicological characteristics; • delayed and immediate effects and chronic effects from short-term and long-term exposure; and • numerical measures of toxicity, including acute toxicity estimates (ATEs).
12.	Ecological Information*	<ul style="list-style-type: none"> • ecotoxicity; • persistence and degradability; • bioaccumulation potential (the potential of accumulation of elements and compounds of harmful substances in the tissues of living organisms); • mobility in soil; and • other adverse effects.

13.	Disposal Considerations*	information on safe handling for disposal and methods of disposal, including any contaminated packaging.
14.	Transport Information*	<ul style="list-style-type: none"> • transportation number; • proper shipping name; • transport hazard class(es); • packing group; • environmental hazards; • transport in bulk, if applicable; and • special precautions.
15.	Regulatory Information*	safety, health, and environmental regulations specific to the product.
16.	Other Information*	date of the latest revision of the SDS.

*OSHA does not enforce sections 12-15, which other agencies handle.



Evaluate and Reassess the Program

Review the company's HCS periodically and revise the program as appropriate to address changes, new chemicals, or new hazards in the workplace. Although the HCS does not require companies to evaluate and reassess their hazard communication program, it must remain current and relevant for the company and its employees.

Review Questions

1. Employees must be trained in understanding safety data sheets.

- A. true
- B. false

2. All employees should participate in hazard communication training.

- A. true
- B. false

3. Proper labeling

- A. must be in English or another language if needed.
- B. must identify the chemical.
- C. must contain a hazard warning.
- D. must contain the name and address of the responsible party.
- E. all of the above.

4. Employees should be able to find safety data sheets:

- A. locked in the safety officer's desk.
- B. in their work areas.
- C. kept by the chief financial officer.

Answers

1. (A. True); 2. (A. True); 3. (E. all of the above); 4. (B. in their work areas).



www.txsafetyatwork.com

1-800-252-7031, Option 2

*The Texas Department of Insurance,
Division of Workers' Compensation (DWC)-Workplace Safety
P.O. Box 12050
Austin, TX 78711-2050*

Disclaimer: Unless otherwise noted, this document was produced by the Texas Department of Insurance, Division of Workers' Compensation using information from staff subject specialists, government entities, or other authoritative sources. Information contained in this fact sheet is considered accurate at the time of publication. For more free publications and other occupational safety and health resources, visit www.txsafetyatwork.com, call 800-252-7031, option 2, or email resourcecenter@tdi.texas.gov.