

GHS 101: SAFETY DATA SHEETS (SDS)



Role of Safety Data Sheets in the Harmonized System

Safety Data Sheets are an essential component of the GHS and are intended to provide comprehensive information about a substance or mixture for use in workplace chemical management.

In the GHS, they serve the same function that the Material Safety Data Sheet or MSDS does in OSHA's HazCom Standard.

They are used as a source of info about hazards, including environmental hazards, and to obtain advice on safety precautions.

The SDS is normally product related and not specific to workplace; nevertheless, the information on an SDS enables the employer to:

1. Develop an active program of worker protection measures, including training, which is specific to the workplace.
2. Consider measures necessary to protect the environment.

SDS also provides important source of information for other target audience in the GHS – so certain elements may be used for the transport of dangerous goods, emergency responders (including poison centres), and those involved in the professional use pesticides and consumers.

Criteria for Determining Whether an SDS Should be Produced

An SDS should be produced for substances and mixtures which meet the harmonized criteria for physical, health, or environmental hazards under the GHS and for all mixtures which contain ingredients that meet the criteria for carcinogenic, toxic to reproduction or specific target organ toxicity in concentrations exceeding the cut-off limits for SDS specified by the criteria for mixtures.

Competent authorities may also requires SDSs for mixtures not meeting the criteria for classification but containing hazardous ingredients in certain concentrations.

SDS Format

Information in the SDS should be presented using the following 16 headings in the order given below

1. Identification

2. Hazard(s) identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and Storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

SDS Content

SDSs should provide a clear description of the data used to identify the hazards. The minimum information for each section listed below should be included.

If specific information is not applicable or not available under a particular sub-heading, the SDS should clearly state this.

Some subheadings are national or regional in nature and SDSs should contain such information as is relevant for the area the SDSs are intended.

Annex 4 contains guidance on SDS preparation

Minimum Information for an SDS
From GHS R3 Table 1.5.2

1. Identification of the substance or mixture and of the supplier

- a) GHS Product Identifier
- b) Other means of identification
- c) Recommended use of the chemical and restrictions on use
- d) Supplier's details (including name, address, phone number etc.)
- e) Emergency phone number

2. Hazard identification

- a) GHS classification of the substance/mixture and any national or regional information
- b) GHS label elements, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in the black and white or the name of the symbol e.g. "flame", "skull and crossbones");
- c) Other hazards which do not result in the classification (e.g. "dust explosion hazard") or are not covered by the GHS.

3. Composition/information on ingredients

Substance

- a) Chemical identity;
- b) Common name, synonyms, etc.;
- c) CAS number and other unique identifiers
- d) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of a substance.

Mixture

The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS and are present above their cut-off levels.

NOTE: For information on ingredients, the competent authority rules for CBI take priority over the rules for product identification.

4. First aid measures

- a) Description of necessary measures, subdivided according to the different routes of exposure, i.e. inhalation, skin and eye contact and ingestion;
- b) Most important symptoms/effects, acute and delayed.
- c) Indication of immediate medical attention and special treatment needed, if necessary.

5. Fire-fighting measures

- a) Suitable (and unsuitable) extinguishing media.
- b) Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products).
- c) Special protective equipment and precautions for fire-fighters.

6. Accidental release measures

- a) Personal precautions, protective equipment and emergency procedures.
- b) Environmental precautions.
- c) Methods and materials for containment and cleaning up.

7. Handling and storage

- a) Precautions for safe handling.
- b) Conditions for safe storage, including any incompatibilities.

8. Exposure controls/personal protection

- a) Control parameters e.g. occupational exposure limit values or biological limit values.
- b) Appropriate engineering controls.
- c) Individual protection measures, such as personal protective equipment.

9. Physical and chemical properties

- a) Appearance (physical state, color etc.);
- b) Odor;
- c) Odor threshold;
- d) pH;
- e) Melting point/freezing point;
- f) Initial boiling point and boiling range;
- g) Flash point;
- h) Evaporation rate;
- i) Flammability (solid, gas);
- j) Upper/lower flammability or explosive limits;
- k) Vapor pressure;
- l) Vapor density;
- m) Relative density;
- n) Solubility(ies);
- o) Partition coefficient: n-octanol/water;
- p) Auto-ignition temperature;
- q) Decomposition temperature;
- r) Viscosity.

10. Stability and reactivity

- a) Reactivity;
- b) Chemical stability;

- c) Possibility of hazardous reactions;
- d) Conditions to avoid (e.g. static discharge, shock or vibration);
- e) Incompatible materials;
- f) Hazardous decomposition products.

11. Toxicological information

Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including:

- a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);
- b) Symptoms related to the physical, chemical and toxicological characteristics;
- c) Delayed and immediate effects and also chronic effects from short and long term exposure;
- d) Numerical measures of toxicity (such as acute toxicity estimates).

12. Ecological information

- a) Ecotoxicity (aquatic and terrestrial, where available);
- b) Persistence and degradability;
- c) Bioaccumulative potential;
- d) Mobility in the soil;
- e) Other adverse effects.

13. Disposal information

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

14. Transport information

- a) UN number;
- b) UN proper shipping name:

- c) Transport hazard class(es);
- d) Packing group, if applicable
- e) Environmental hazards (e.g.: Marine pollutant (Yes/No));
- f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);
- g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with the transport or conveyance within or outside their premises.

15. Regulatory information

Safety, health and environmental regulations specific for the product in question.

16. Other information including information on preparation and revision of the SDS

Fill in additional information as needed.

Guidance for Compiling a Safety Data Sheet

Cut off values/concentration limits for each health and environmental hazard class

Hazard class	Cut-off value/concentration limit
Acute toxicity	≥1.0%
Skin corrosion/Irritation	≥1.0%
Serious eye damage/eye irritation	≥1.0%
Respiratory/Skin sensitization	≥0.1%
Germ cell mutagenicity (Category 1)	≥0.1%
Germ cell mutagenicity (Category 2)	≥1.0%
Carcinogenicity	≥0.1%
Reproductive toxicity	≥0.1%

Specific target organ toxicity (single exposure)	≥1.0%
Specific target organ toxicity (repeated exposure)	≥1.0%
Aspiration hazard (Category 1)	≥10% of Category 1 ingredient(s) and kinematic viscosity > 20.5mm ² /s at 40°C
Aspiration hazard (Category 2)	≥10% of Category 2 ingredient(s) and kinematic viscosity > 14 mm ² /s at 40°C
Hazardous to the aquatic environment	≥ 1.0%

There may be some cases when available hazard data warrants an SDS on basis other than cut off values or concentration limits.

And an SDS may be required for mixtures that are deemed acutely toxic or toxic to the aquatic environment in concentrations equal to or greater than 1%

Some competent authorities may choose not to regulate certain categories within a hazard class, in such cases, no SDS would be needed.

If an SDS is required for a substance or mixture, then the information required to be included in the SDS should in all cases be provided in accordance with GHS requirements.

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GHS 101: CLASSIFICATION OF SUBSTANCES AND MIXTURES



GHS 101: Classification

[For OSHA specific guidance on classifying, visit [health hazards](#) and [physical hazards](#)]

As we learned in [GHS 101: An Overview](#), the original 1992 Earth Summit mandate had two primary goals related to a harmonized system: 1) harmonized criteria for classifying substances and mixtures according to their health, environmental and physical hazards; and 2) harmonized hazard communication elements.

The IOMC divided work on the scope of these two elements into **three parts**, with each part developed by a different committee or organization:

1. Classification criteria for health and environmental hazards - Developed by the Organization for Economic Cooperation and Development (OECD)
2. Classification criteria for physical hazards - Developed by the United Nations Subcommittee of Experts on the Transport of Dangerous Goods (UNSCETDG) and the International Labour Organization (ILO) working group
3. Hazard communication elements (including SDSs and labels) - Developed by the ILO

Three primary tasks for teams working on harmonizing classification criteria:

1. Compare major classification systems and identify similar or identical elements as well as develop consensus on elements that were dissimilar
2. Examine scientific basis for criteria which define hazard class of concern (e.g. acute toxicity, carcinogenicity) and gain expert consensus on the test methods, data interpretation and level of concern and consensus on the criteria
3. Develop consensus on the process or the scheme for using criteria when there is a decision tree approach or where there is a dependant criteria in the classification scheme

As you can see, classification is the starting point for hazard communication.

What Exactly Does the GHS Cover?

For classification, the GHS applies to pure substances and their dilute solutions and to mixtures. It does not apply to “articles” as defined by OSHA

Substances means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities derived from the process used, but excluding any solvent, which may be separated without affecting the stability of the substance or changing its composition

Mixtures means a mixture or solution composed of two or more substances in which they do not react

"Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees

Alloy means a metallic material, homogeneous on a macroscopic scale, consisting of two or more elements so combined that they cannot be readily separated by mechanical means. Alloys are considered to be mixtures for the purposes of classification under the GHS.

The GHS is meant to be simple and transparent with a clear distinction between classes and categories in order to allow for self-classification.

When classifying hazards, only the intrinsic hazardous properties of substances or mixtures are considered. The data used for classification may be obtained from tests, literature and practical experience.

The process starts by identifying relevant information regarding the hazards of a substance or mixture; that information is reviewed, and a decision is made whether the substance or mixture should be classified as hazardous and the degree of the hazard.

How to Classify Mixtures for the GHS:

- Test data for that mixture is used when available
- If no test data exists, bridging principles can be applied
 - Bridging principles work by taking the available test data for the substances and/or ingredients that make up the mixture, and using it to classify the mixture
- If no test data exists, and bridging principles will not work, then each hazard in the official GHS book has information on estimating the hazard of a mixture

Additional Testing Considerations

The GHS does not include requirements for testing substances. Tests that are carried out should be done so in a scientific and reproducible manner.

The criteria for determining health and environmental hazards are test method neutral – allowing for different approaches as long as they are scientifically sound.

Test methods for determining physical hazards are generally more clear-cut and are specified in the GHS.

One goal of the GHS is to reduce duplicative testing and animal testing, and it allows test data already generated for the classification of chemicals under existing systems to be used when classifying the same chemicals for GHS.

When this creates conflict between an existing system and GHS, expert judgment is needed.

Furthermore, tests that do not require the use of live animals are preferred to those using sentient live experimental animals.

Testing on humans solely for hazard identification purposes is generally not acceptable; nevertheless, epidemiological data and experience on the effects of chemicals on humans should be taken into account in the evaluation of human health hazards of chemicals.

The quality and consistency of the data are important. For some hazard classes, classification results directly when the data satisfy the criteria.

For others, classification of a substance or a mixture is made on the basis of the total weight of evidence.

There are specific considerations for the classification of mixtures.

Some substances react slowly with atmospheric gases, e.g. oxygen, carbon dioxide, water vapour, to form different substances, or react very slowly with other ingredients of a mixture or self polymerise; however, substances produced by such reactions are typically sufficiently low that they do not affect classification of the mixture.

Cut-off Values and Concentration Limits

There may be cases where the cut-off values or concentration limits used for untested mixtures based on hazards of its ingredients do not adequately convey the identifiable hazard the mixture poses. If a classifier has information that the hazard of an ingredient will be evident below the cut-off value or concentration limit, then the mixture should be classified accordingly.

Conversely, if data shows hazard of an ingredient will not be present at level above GHS cut-off, mixture could be classified according to those data. In such cases, data should be retained and made available for the use of values other than the GHS cut-off and concentration limits.

GHS 101: GHS DEFINITIONS



Aerosols - means any non-refillable receptacles made of metal, glass or plastics and containing a gas compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state. Aerosol includes aerosol dispensers.

Alloy - means a metallic material, homogeneous to the naked eye, consisting of two or more elements so combined that they cannot be readily separated by mechanical means. Alloys are considered to be mixtures for the purpose of classification under the GHS.

Aspiration - means the entry of a liquid or solid chemical product into the trachea and lower respiratory system directly through the oral or nasal cavity, or indirectly from vomiting;

ASTM - means the "American Society of Testing and Materials".

BCF - means "bioconcentration factor".

BOD/COD - means "biochemical oxygen demand/chemical oxygen demand".

CA - means "competent authority".

Carcinogen - means a chemical substance or a mixture of chemical substances which induce cancer or increase its incidence.

CAS - means "Chemical Abstract Service".

CBI - means "confidential business information".

Chemical identity - means a name that will uniquely identify a chemical. This can be a name that is in accordance with the nomenclature systems of the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS), or a technical name.

Competent authority - means any national body(ies) or authority(ies) designated or otherwise recognized as such in connection with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Compressed gas - means a gas which when packaged under pressure is entirely gaseous at -50°C ; including all gases with a critical temperature $\leq -50^{\circ}\text{C}$.

Contact sensitizer - means a substance that will induce an allergic response following skin contact. The definition for "contact sensitizer" is equivalent to "skin sensitizer".

Corrosive to metal - means a substance or a mixture which by chemical action will materially damage, or even destroy, metals.

Criteria - means the technical definition for the physical, health and environmental hazards;

Critical temperature - means the temperature above which a pure gas cannot be liquefied, regardless of the degree of compression.

Dermal Corrosion: - see skin corrosion;

Dermal irritation: - see skin irritation.

Dissolved gas - means a gas which when packaged under pressure is dissolved in a liquid phase solvent.

EC₅₀ - means the effective concentration of a substance that causes 50% of the maximum response.

EC Number or (ECN°) - is a reference number used by the European Communities to identify dangerous substances, in particular those registered under EINECS.

ECOSOC - means the "Economic and Social Council of the United Nations".

EINECS - means "European Inventory of Existing Commercial Chemical Substances".

End Point - means physical, health and environmental hazards;

ErC₅₀ - means EC₅₀ in terms of reduction of growth rate.

EU - means "European Union".

Explosive article - means an article containing one or more explosive substances.

Explosive substance - means a solid or liquid substance (or mixture of substances) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not emit gases.

Eye irritation - means the production of changes in the eye following the application of test substance to the front surface of the eye, which are fully reversible within 21 days of application.

Flammable gas - means a gas having a flammable range with air at 20°C and a standard pressure of 101.3kPa.

Flammable liquid - means a liquid having a flash point of not more than 93°C.

Flammable solid - means a solid which is readily combustible, or may cause or contribute to fire through friction.

Flash point - means the lowest temperature (corrected to a standard pressure of 101.3 kPa) at which the application of an ignition source causes the vapors of a liquid to ignite under specified test conditions.

Gas - means a substance which (i) at 50 °C has a vapor pressure greater than 300 kPa; or (ii) is completely gaseous at 20 °C at a standard pressure of 101.3 kPa.

GESAMP - means "the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection of IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP."

GHS - means "the Globally Harmonized System of Classification and Labelling of Chemicals".

Hazard category - means the division of criteria within each hazard class, e.g., oral acute toxicity includes five hazard categories and flammable liquids includes four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

Hazard class - means the nature of the physical, health or environmental hazard, e.g., flammable solid carcinogen, oral acute toxicity.

Hazard statement - means a statement assigned to a hazard class and category that describes the nature of the hazards of a hazardous product, including, where appropriate, the degree of hazard;

IARC - means the "International Agency for the Research on Cancer".

ILO - means the "International Labor Organization".

IMO - means the "International Maritime Organization".

Initial boiling point - means the temperature of a liquid at which its vapor pressure is equal to the standard pressure (101.3kPa), i.e., the first gas bubble appears.

IOMC - means the "Inter-organization Program on the Sound Management of Chemicals".

IPCS - means the "International Program on Chemical Safety".

ISO - means International Standards Organization.

IUPAC - means the "International Union of Pure and Applied Chemistry".

Label - means an appropriate group of written, printed or graphic information elements concerning a hazardous product, selected as relevant to the target sector(s), that is affixed to, printed on, or attached to the immediate container of a hazardous product, or to the outside packaging of a hazardous product.

Label element - means one type of information that has been harmonized for use in a label, e.g., pictogram, signal word.

LC₅₀ (50% lethal concentration) - means the concentration of a chemical in air or of a chemical in water which causes the death of 50% (one-half) of a group of test animals.

LD₅₀ - means the amount of a chemical, given all at once, which causes the death of 50% (one half) of a group of test animals.

L(E)C₅₀ - means LC₅₀ or EC₅₀.

Liquefied gas - means a gas which when packaged under pressure, is partially liquid at temperatures above -50°C. A distinction is made between.

(i) High pressure liquefied gas: a gas with a critical temperature between -50°C and +65°C; and

(ii) Low pressure liquefied gas: a gas with a critical temperature above +65°C.

Liquid - means a substance or mixture which at 50°C has a vapor pressure of not more than 300kPa (3bar), which is not completely gaseous at 20 °C and at a standard pressure of 101.3kPa, and which has a melting point or initial melting point of 20°C or less at a standard pressure of 101.3 kPa. A viscous substance or mixture for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test; or to the test for determining fluidity (penetrometer test) prescribed in section 2.3.4 of Annex A of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

MARPOL - means the "International Convention for the Prevention of Pollution from Ships".

Mixture - means a mixture or a solution composed of two or more substances in which they do not react.

MSDS - means "Material Safety Data Sheet" and in this document is used interchangeably with Safety Data Sheet (SDS).

Mutagen - means an agent giving rise to an increased occurrence of mutations in populations of cells and /or organisms.

Mutation - means a permanent change in the amount or structure of the genetic material in a cell;

NGO - means "non-governmental organization".

NOEC - means the "no observed effect concentration".

OECD - means "The Organization for Economic Cooperation and Development".

Organic peroxide - means a liquid or solid organic substance which contains the bivalent -O-O- structure and may be considered a derivative of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals. The term also includes organic peroxide formulation (mixtures).

Oxidizing gas - means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.

Oxidizing liquid - means a liquid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material.

Oxidizing solid - means a solid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material.

QSAR - means "quantitative structure-activity relationships".

Pictogram - means a graphical composition that may include a symbol plus other graphic elements, such as a border, background pattern or color that is intended to convey specific information.

Precautionary statement - means a phrase (and/or pictogram) that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous product, or improper storage or handling of a hazardous product. Product identifier means the name or number used for a hazardous product on a label or in the SDS. It provides a unique means by which the product user can identify the substance or mixture within the particular use setting (e.g. transport, consumer or workplace).

Pyrophoric liquid - means a liquid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air.

Pyrophoric solid - means a solid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air.

Pyrotechnic article - means an article containing one or more pyrotechnic substances;

Pyrotechnic substance - means a substance or mixture of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative, self-sustaining exothermic (heat-related) chemical reactions.

Readily combustible - solid means powdered, granular, or pasty substance or mixture which is dangerous if it can be easily ignited by brief contact with an ignition source, such as a burning match, and if the flame spreads rapidly.

Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria - means the latest revised edition of the United Nations publication bearing this title, and any published amendment

thereto.

Recommendations on the Transport of Dangerous Goods, Model Regulations - means the latest revised edition of the United Nations publication bearing this title, and any published amendment thereto.

Refrigerated liquefied gas - means a gas which when packaged is made partially liquid because of its low temperature.

Respiratory sensitizer - means a substance that induces hypersensitivity of the airways following inhalation of the substance.

RID - means The Regulations concerning the International Carriage of Dangerous Goods by Rail [Annex 1 to Appendix B (Uniform Rules concerning the Contract for International Carriage of Goods by Rail) (CIM) of COTIF (Convention concerning international carriage by rail)], as amended.

SAR - means "Structure Activity Relationship".

SDS - means "Safety Data Sheet" and in this document is used interchangeably with Material Safety Data Sheet (MSDS).

Self-Accelerating Decomposition Temperature (SADT) - means the lowest temperature at which self-accelerating decomposition may occur with substance as packaged.

Self-heating substance - means a solid or liquid substance, other than a pyrophoric substance, which, by reaction with air and without energy supply, is liable to self-heat; this substance differs from a pyrophoric substance in that it will ignite only when in large amounts (kilograms) and after long periods of time (hours or days).

Self-reactive substance - means a thermally unstable liquid or solid substance liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). This definition excludes substances or mixtures classified under the GHS as explosive, organic peroxides or as oxidizing.

Serious eye damage - means the production of tissue damage in the eye, or serious physical decay of vision, following application of a test substance to the front surface of the eye, which is not fully reversible within 21 days of application.

Signal word - means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The GHS uses 'Danger' and 'Warning' as signal words.

Skin corrosion - means the production of irreversible damage to the skin following the application of a test substance for up to 4 hours.

Skin irritation - means the production of reversible damage to the skin following the application of a test substance for up to 4 hours.

Skin sensitizer - means a substance that will induce an allergic response following skin contact. The definition for "skin sensitizer" is equivalent to "contact sensitizer".

Solid - means a substance or mixture which does not meet the definitions of a liquid or gas.

SPR - means "Structure Property Relationship".

Substance - means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

Substance - which, in contact with water, emits flammable gases means a solid or liquid substance or mixture which, by interaction with water, is liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

Supplemental label element - means any additional non-harmonized type of information supplied on the container of a hazardous product that is not required or specified under the GHS. In some cases this information may be required by other competent authorities or it may be additional information provided at the discretion of the manufacturer/distributor.

Symbol - means a graphical element intended to succinctly convey information.

Technical name - means a name that is generally used in commerce, regulations and codes to identify a substance or mixture, other than the IUPAC or CAS name, and that is recognized by the scientific community. Examples of technical names include those used for complex mixtures (e.g., petroleum fractions or natural products), pesticides (e.g., ISO or ANSI systems), dyestuffs (Color Index system) and minerals.

UNCED - means the "United Nations Conference on Environment and Development".

UNCETDG/GHS - means the "United Nations Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals".

UNITAR - means the "United Nations Institute for Training and Research";

UNSCEGHS - means the "United Nations Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals".

UNSCETDG - means the "United Nations Sub-Committee of Experts on the Transport of Dangerous Goods".

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