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# Facilitator's Guide

**GHS**  
**AN INTRODUCTION**

# ***GHS***

## ***An Introduction***



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# INTRODUCTION TO THE FACILITATOR'S GUIDE

## *GHS – An Introduction*

The aim of this Facilitator's Guide, when used in conjunction with the Video program, is to provide the facilitator with discussion points important to the overall development of the program and to allow participants the opportunity of discussing the impact the program may have on current work practices and whether in fact changes may be required.

The time allocated to the program will be determined by which areas are seen as important to each Organisation, the time taken to develop the points made in the program and whether other data specific to your own environment is included in addition to, or instead of, the program examples.

**EACH FACILITATOR SHOULD CAREFULLY READ THE GUIDE DISCUSSION NOTES SUGGESTED AND PREPARE THEIR OWN INPUT ACCORDINGLY.**

The program transcript is included to allow your Organisation to fully research the program content and develop specific examples critical to the performance of your own workforce.

Where the Video program is made available to small or remote sections of your Organisation, some other examples or discussion points may be preferred to suit the needs of these people and if so, should be developed prior to distribution of the program. Maximum benefit will then be obtained by your people.

All information included in the Facilitator's Guide may be copied and distributed with the exception of the transcript of the Video program. Any information which is copied or distributed must only be used internally by the Organisation that purchased the guide.



SCREEN SHOT FROM THE VIDEO PROGRAM

# INTRODUCTION TO THE VIDEO PROGRAM

Duration: 13 minutes

Every year, vast quantities of chemicals are sold and shipped, for use in workplaces around the world.

And, with a global level of trade comes a need to ensure that the hazards pertaining to chemical products are clearly communicated - regardless of where in the world those products are being put to use.

While national laws and regulations relating to chemicals may be similar, they are often different enough to require multiple sets of Labels, Safety Data Sheets, and other information when being traded internationally.

All this creates the potential for confusion - which, when dealing with hazardous chemicals - could have disastrous consequences in the workplace.

Developed at the UN level, the Globally Harmonised System of Classification and Labelling of Chemicals (or GHS for short) aims to develop a single, globally harmonised system to address:

- Classification of chemicals, and
- Hazard Communication, through:
  - Labels, and
  - Safety Data Sheets

This program provides an overview of these elements as your workplace makes the transition to the GHS.

# TRANSCRIPT OF THE VIDEO PROGRAM

## *GHS – An Introduction*

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Every year, vast quantities of chemicals are sold and shipped, for use in workplaces around the world.

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All this creates the potential for confusion - which, when dealing with hazardous chemicals - could have disastrous consequences in the workplace.

### **What is the GHS?**

Developed at the UN level, the Globally Harmonized System of Classification and Labelling of Chemicals (or GHS for short) aims to develop a single, globally harmonised system to address:

- Classification of chemicals, and
- Hazard Communication, through:
  - Labels, and
  - Safety Data Sheets

The GHS is not a regulation or standard. The GHS document, (sometimes referred to as 'The purple book') establishes a system of hazard classification and communication. Regulatory bodies in countries that decide to adopt the GHS, do so by adjusting their existing requirements.

This may mean that, local authorities may have requirements in addition to what the GHS requires.

The overall strategy is to allow classification and hazard communication elements in existing systems to converge - rather than attempting to roll out a new global system. Thus, many of the elements of the GHS may seem quite familiar to you.

Also, the adoption of the GHS is often accompanied by a transitional period - during which time, GHS compliant Labels and Safety Data Sheets may co-exist with those that predate GHS requirements.

If you wish to know the timelines of GHS implementation for your area, you should check with the appropriate authority.

## **Classification**

The GHS aims to provide a logical and comprehensive approach to defining Physical, Health, and Environmental hazards of chemicals.

It is the classification that a chemical receives under the GHS that determines the information required on its Labels and Safety Data Sheets.

The GHS typically defines hazards by:

- Class, which defines the type of hazard, and -
- Category, which indicates a degree of severity - with Category 1 being the most severe.

Under the GHS, Hazard Classes fall into three groups:

- Physical,
- Health, and
- Environmental

Physical Hazards tend to relate to physical threat or the potential for destruction. They include such Classes as:

- Explosives
- Flammable Gases (including chemically unstable gases)
- Aerosols
- Oxidizing Gases
- Gases Under Pressure
- Flammable Liquids
- Flammable Solids
- Self-Reactive Substances and mixtures
- Pyrophoric Liquids
- Pyrophoric Solids
- Self-Heating Substances and mixtures
- Substances which, in contact with water, emit flammable gases
- Oxidizing Liquids
- Oxidizing Solids
- Organic Peroxides, and -
- Substances Corrosive to Metals

Health Hazards tend to describe hazards that impact upon health generally, and include Classes for:

- Acute Toxicity
- Skin Corrosion/Irritation
- Serious Eye Damage/Eye Irritation

- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific Target Organ Toxicity - Single Exposure
- Specific Target Organ Toxicity - Repeated Exposure, and:
- Aspiration Hazards

Environmental Hazards are hazardous to the general environment, and include:

- Hazardous to the Aquatic Environment, both -
  - Acute, and -
  - Long Term. And -
- Hazardous to the Ozone Layer

## Labelling

Every combination of class and category classification under the GHS, requires a unique combination of Label elements, including:

- Pictograms
- Signal Words, and
- Hazard Statements

GHS pictograms are recognisable as being in the shape of a square, set on a point. They have a red frame, containing a black symbol, on a white background.

There are nine GHS pictograms in all, and depending on the hazard, one or several may be present on a label. As a general guide...

This pictogram is used for oxidisers...

This may be used with:

- Flammables
- Self-reactives
- Pyrophorics
- Self-heating substances
- Substances emitting flammable gas, and
- Organic peroxides

This pictogram may be used with:

- Explosives
- Self-reactives, and
- Organic peroxides

This pictogram is associated with:

- Acute Toxicity (Severe)

This pictogram is used for substances that are:

- Corrosive to metals, or that can cause
- Skin Corrosion, or
- Serious eye damage

This pictogram signifies:

- Gases under pressure

This pictogram has a range of applications, including:

- Carcinogenicity
- Respiratory sensitization
- Reproductive toxicity
- Specific target organ toxicity (repeated)
- Germ cell mutagenicity, and
- Aspiration hazards

This pictogram indicates:

- Aquatic environmental hazards

This pictogram may also be used to indicate a range of hazards, including:

- Acute Toxicity (harmful)
- Skin/eye irritation
- Skin sensitization
- Specific Target Organ Toxicity (single), and -
- Hazardous to the ozone layer

The pictogram is just one element that may make up a GHS compliant label. Other elements - also required by the GHS classification of a chemical may include:

A Product Identifier - which may be the technical name for the chemical, and would generally indicate the chemical identity of the substance.

This identifier should match the SDS accompanying the chemical. For mixtures or alloys, the label may include the chemical identities of all ingredients that contribute to the hazard.

Signal Words are used to indicate the relative level of severity of a hazard. They are:



- DANGER - for more severe hazards, and -
- WARNING - for less severe hazards

Hazard Statements are prescribed statements that describe the nature, and where appropriate - the degree of the hazard.

Precautionary Statements - are intended to prevent improper storage and handling, and to reduce the adverse effects that may result.

Precautionary Statements can cover:

- Prevention
- Response
- Storage, and
- Disposal
- ...or be of a General nature.

Supplier Identification - including the name, address and other contact details of the manufacturer or supplier is another useful label element. Expiry dates may also be included where appropriate.

It should be noted that in many cases - different legislation is in place for hazardous chemicals that are in transit - than that which affects labelling requirements in the workplace. Care should be taken to ensure that dangerous goods packaged for transport are labelled in accordance with the appropriate legislation.

## **Safety Data Sheets**

Safety Data Sheets, or SDS's, are another important component of hazard communication in the GHS.

SDS's, which are known in some areas as MSDS's, (for Material Safety Data Sheets), are designed to provide comprehensive information about a substance or mixture which is defined as a hazard.

SDS's can be invaluable for providing information about hazards, as well as providing advice about precautions that may need to be undertaken when working with a potentially hazardous chemical or mixture.

Under the GHS, SDS's use the following 16 section format:

- Identification of the substance or mixture and of the supplier
- Hazards identification
- Composition/information on ingredients
- First aid measures
- Firefighting measures
- Accidental release measures
- Handling and storage
- Exposure controls / personal protection
- Physical and chemical properties

- Stability and reactivity
- Toxicological information
- Ecological information
- Disposal considerations
- Transport information
- Regulatory information, and
- Other information ...which may include information on preparation and revision of the SDS.

SDS's should be reviewed at regular intervals to make sure the information contained in them is still current.

New and significant information may change the classification of a chemical, and thus its Labelling and SDS requirements - so it's best to ensure you are up to date.

## **Conclusion**

The Globally Harmonized System of Classification and Labelling of Chemicals may be having an impact on your workplace.

If this is the case, you can expect to see:

- New classification rules and hazard classes
- A new standardised format for Safety Data Sheets, and
- New label formats with new information and pictograms

But because the GHS seeks to harmonise existing systems, much of the end result may seem quite familiar. After all - the GHS seeks to make things clearer for everyone working with hazardous chemicals.

Hazardous chemicals in the workplace can pose a multitude of hazards and risks.

Any chemicals you work with must be properly labelled, and it is important that you know how to effectively gain valuable information from the labels around you.

You should know how to access SDS's for the chemicals you work with - and how to quickly find information within them.

Make sure you have the knowledge and the training required to ensure your workplace is a safe one.

## **PART ONE**

### **WHAT IS THE GHS?**

Developed at the UN level, the Globally Harmonized System of Classification and Labelling of Chemicals (or GHS for short) aims to develop a single, globally harmonised system to address:

- Classification of chemicals, and
- Hazard Communication, through:
  - Labels, and
  - Safety Data Sheets

The GHS is not a regulation or standard. The GHS document, (sometimes referred to as 'The purple book') establishes a system of hazard classification and communication. Regulatory bodies in countries that decide to adopt the GHS, do so by adjusting their existing requirements.

This may mean that, local authorities may have requirements in addition to what the GHS requires.

The overall strategy is to allow classification and hazard communication elements in existing systems to converge - rather than attempting to roll out a new global system. Thus, many of the elements of the GHS may seem quite familiar to you.

Also, the adoption of the GHS is often accompanied by a transitional period - during which time, GHS compliant Labels and Safety Data Sheets may co-exist with those that predate GHS requirements.

If you wish to know the timelines of GHS implementation for your area, you should check with the appropriate authority.



#### **DISCUSSION**

Are any elements of the GHS evident in your workplace?

## **PART TWO**

# **CLASSIFICATION**

The GHS aims to provide a logical and comprehensive approach to defining Physical, Health, and Environmental hazards of chemicals.

It is the classification that a chemical receives under the GHS that determines the information required on its Labels and Safety Data Sheets.

The GHS typically defines hazards by:

- **Class**, which defines the type of hazard, and -
- **Category**, which indicates a degree of severity - with Category 1 being the most severe.

Under the GHS, Hazard Classes fall into three groups:

- **Physical,**
- **Health, and**
- **Environmental**

Physical Hazards tend to relate to physical threat or the potential for destruction. They include such Classes as:


- **Explosives**
- **Flammable Gases (including chemically unstable gases)**
- **Aerosols**
- **Oxidizing Gases**
- **Gases Under Pressure**
- **Flammable Liquids**
- **Flammable Solids**
- **Self-Reactive Substances and mixtures**
- **Pyrophoric Liquids**
- **Pyrophoric Solids**
- **Self-Heating Substances and mixtures**
- **Substances which, in contact with water, emit flammable gases**
- **Oxidizing Liquids**
- **Oxidizing Solids**
- **Organic Peroxides, and -**
- **Substances Corrosive to Metals**

Health Hazards tend to describe hazards that impact upon health generally, and include Classes for:

- **Acute Toxicity**
- **Skin Corrosion/Irritation**
- **Serous Eye Damage/Eye Irritation**
- **Respiratory or Skin Sensitization**
- **Germ Cell Mutagenicity**
- **Carcinogenicity**
- **Reproductive Toxicity**
- **Specific Target Organ Toxicity - Single Exposure**
- **Specific Target Organ Toxicity - Repeated Exposure, and:**
- **Aspiration Hazards**

Environmental Hazards are hazardous to the general environment, and include:

- Hazardous to the Aquatic Environment, both -
  - Acute, and -
  - Long Term. And -
- Hazardous to the Ozone Layer



## DISCUSSION

What are most common physical classes of chemicals in your workplace?

## **PART THREE LABELLING**

Every combination of class and category classification under the GHS, requires a unique combination of Label elements, including:

- **Pictograms**
- **Signal Words, and**
- **Hazard Statements**

GHS pictograms are recognisable as being in the shape of a square, set on a point. They have a red frame, containing a black symbol, on a white background.

There are nine GHS pictograms in all, and depending on the hazard, one or several may be present on a label.



This pictogram is used for Oxidisers.



This pictogram may be used with:

- Flammables
- Self-reactives
- Pyrophorics
- Self-heating substances
- Substances emitting flammable gas, and
- Organic peroxides



This pictogram may be used with:

- Explosives
- Self-reactives, and
- Organic peroxides



This pictogram is associated with Acute Toxicity (Severe)



This pictogram is used for substances that are:

- Corrosive to metals, or that can cause
- Skin Corrosion, or
- Serious eye damage



This pictogram signifies Gases under pressure



This pictogram has a range of applications, including:

- Carcinogenicity
- Respiratory sensitization
- Reproductive toxicity
- Specific target organ toxicity (repeated)
- Germ cell mutagenicity, and
- Aspiration hazards



This pictogram indicates Aquatic environmental hazards



This pictogram may also be used to indicate a range of hazards, including:

- Acute Toxicity (harmful)
- Skin/eye irritation
- Skin sensitization
- Specific Target Organ Toxicity (single), and -
- Hazardous to the ozone layer



Other elements required by the GHS classification of a chemical may include:

**A Product Identifier** - which may be the technical name for the chemical, and would generally indicate the chemical identity of the substance. This identifier should match the SDS accompanying the chemical. For mixtures or alloys, the label may include the chemical identities of all ingredients that contribute to the hazard.

**Signal Words** are used to indicate the relative level of severity of a hazard. They are:

- **DANGER** - for more severe hazards, and -
- **WARNING** - for less severe hazards

**Hazard Statements** are prescribed statements that describe the nature, and where appropriate - the degree of the hazard.

**Precautionary Statements** - are intended to prevent improper storage and handling, and to reduce the adverse effects that may result. Precautionary Statements can cover:

- Prevention
- Response
- Storage, and
- Disposal
- ...or be of a General nature.

**Supplier Identification** - including the name, address and other contact details of the manufacturer or supplier is another useful label element. Expiry dates may also be included where appropriate.

It should be noted that in many cases - different legislation is in place for hazardous chemicals that are in transit - than that which affects labelling requirements in the workplace. Care should be taken to ensure that dangerous goods packaged for transport are labelled in accordance with the appropriate legislation.



## DISCUSSION

Which of these GHS symbols have you seen in your workplace?

## **PART FOUR**

# **SAFETY DATA SHEETS**

Safety Data Sheets, or SDS's, are another important component of hazard communication in the GHS.

SDS's, which are known in some areas as MSDS's, (for Material Safety Data Sheets), are designed to provide comprehensive information about a substance or mixture which is defined as a hazard.

SDS's can be invaluable for providing information about hazards, as well as providing advice about precautions that may need to be undertaken when working with a potentially hazardous chemical or mixture.

Under the GHS, SDS's use the following 16 section format:

- **Identification of the substance or mixture and of the supplier**
- **Hazards identification**
- **Composition/information on ingredients**
- **First aid measures**
- **Firefighting measures**
- **Accidental release measures**
- **Handling and storage**
- **Exposure controls / personal protection**
- **Physical and chemical properties**
- **Stability and reactivity**
- **Toxicological information**
- **Ecological information**
- **Disposal considerations**
- **Transport information**
- **Regulatory information**, and
- **Other information** ...which may include information on preparation and revision of the SDS.

SDS's should be reviewed at regular intervals to make sure the information contained in them is still current.

New and significant information may change the classification of a chemical, and thus its Labelling and SDS requirements - so it's best to ensure you are up to date.



## DISCUSSION

Show an example of a Safety Data Sheet in your workplace. Does it comply with the 16 GHS headings?

## **PART FIVE**

### **CONCLUSION**

The Globally Harmonized System of Classification and Labelling of Chemicals may be having an impact on your workplace.

If this is the case, you can expect to see:

- New classification rules and hazard classes
- A new standardised format for Safety Data Sheets, and
- New label formats with new information and pictograms

But because the GHS seeks to harmonise existing systems, much of the end result may seem quite familiar. After all - the GHS seeks to make things clearer for everyone working with hazardous chemicals.

Hazardous chemicals in the workplace can pose a multitude of hazards and risks.

Any chemicals you work with must be properly labelled, and it is important that you know how to effectively gain valuable information from the labels around you.

You should know how to access SDS's for the chemicals you work with - and how to quickly find information within them.

Make sure you have the knowledge and the training required to ensure your workplace is a safe one.



### **DISCUSSION**

Who are the people in your workplace you can talk to if you have any questions regarding the GHS?

## ASSESSMENT – GHS: AN INTRODUCTION

Name: .....

Date: .....

I.D. (if applicable): .....

Score

---

**1. What does GHS stand for?**

*(circle correct answer)*

- A) Globally Harmonised System
- B) Globally Harmonised Storage
- C) Global Health System
- D) Global Hardware Safety

**2. Which body developed the Globally Harmonized System of Classification and Labelling of Chemicals?**

*(circle correct answer)*

- A) OSHA in the United States of America
- B) The United Nations
- C) Your local workplace safety authority
- D) It is legislation

**3. How many sections are in a GHS compliant Safety Data Sheet?**

*(circle correct answer)*

- A) There are no set sections
- B) 16 sections
- C) 3 sections
- D) 100 sections

4. **The GHS typically defines hazards by:**  
*(circle correct answer)*
- A) Hazards and PPE
  - B) Fire and Water
  - C) Class and Category
  - D) None of the above
5. **Which of these must be on a GHS compliant label?**  
*(circle correct answer)*
- A) Pictogram
  - B) Hazards Statement
  - C) Signal Word
  - D) All of the above
6. **What colour is the diamond of a GHS pictogram?**  
*(circle correct answer)*
- A) Red
  - B) Orange
  - C) Black
  - D) Any colour
7. **What are the 2 signal words that you will find on GHS labels?**  
*(circle correct answer)*
- A) Hazard or Risk
  - B) Liquid or Solid
  - C) Danger or Warning
  - D) Flammable or Corrosive



8.

**What is this pictogram used for?**  
*(circle correct answer)*

- A) Danger
- B) Explosive
- C) Harmful to animals
- D) Aquatic Environmental Hazards



9.

**What is this pictogram used for?**  
*(circle correct answer)*

- A) Carcinogenicity
- B) Respiratory Sensitisation
- C) Germ Cell Mutagenicity
- D) All of the above



10.

**What is this pictogram used for?**  
*(circle correct answer)*

- A) Explosives
- B) Acute Toxicity (harmful)
- C) Gases under Pressure
- D) None of the above

## ANSWERS TO ASSESSMENT

1.    *A) Globally Harmonised System*
2.    *B) The United Nations*
3.    *B) 16 Sections*
4.    *C) Class and Category*
5.    *D) All of the above*
6.    *A) Red*
7.    *C) Danger or Warning*
8.    *D) Aquatic Environmental Hazards*
9.    *D) All of the above*
10.   *B) Acute Toxicity (harmful)*