DG and GHS Classification System

UNEP / ICCA Workshop

TEMA

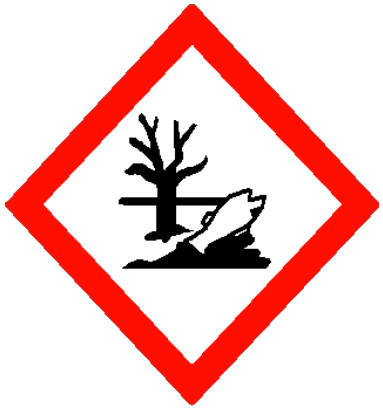
June 2014

DG and GHS Classification System

UN Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

DG and GHS Classification System

Pictograms



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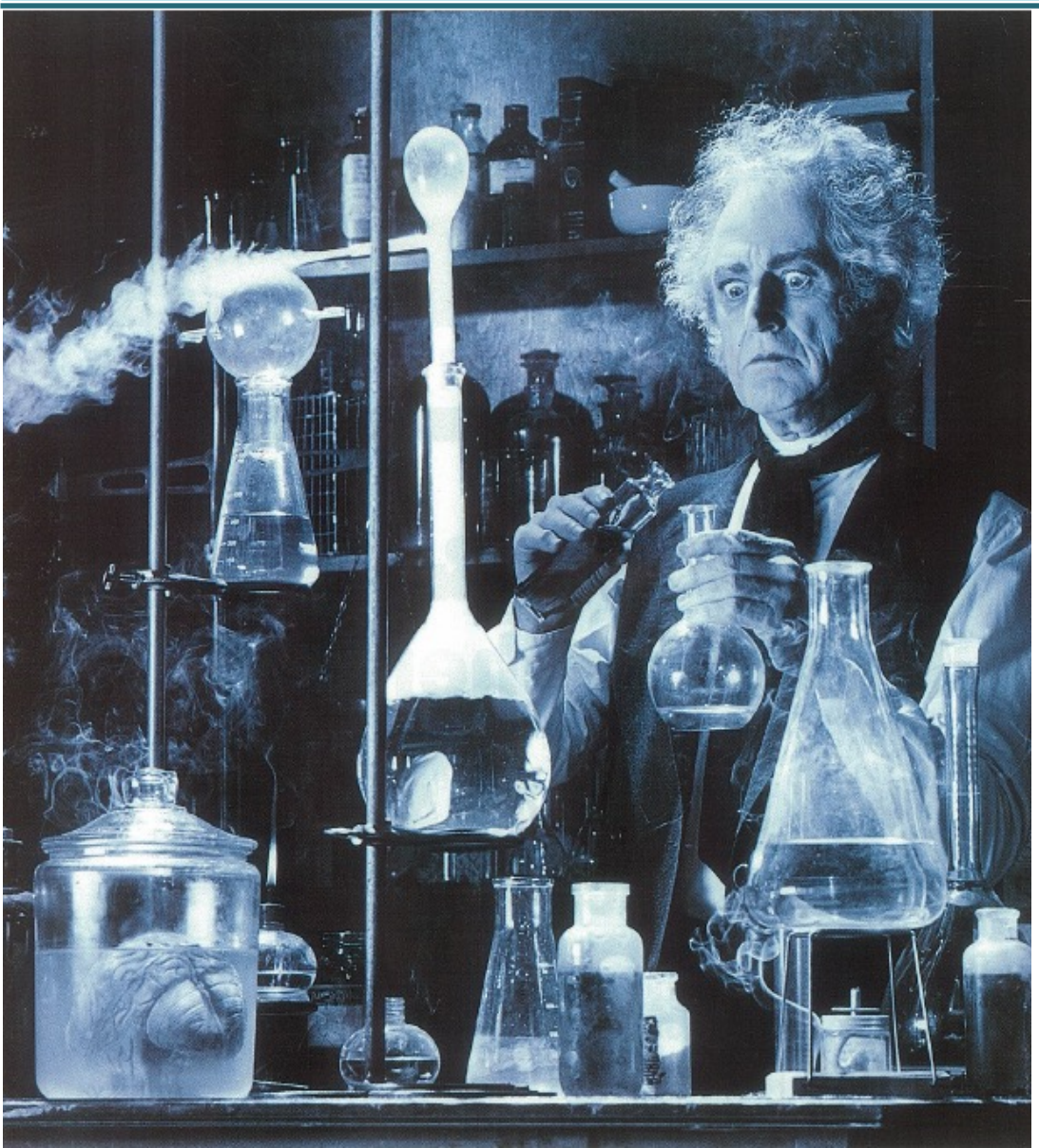

Why Chemical Safety?

All chemicals are hazardous:

EXPOSURE KILLS!

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Why Chemical Safety?

- **People:**

Prevent death and serious injury.

- **Facilities:**

Prevent destruction and unhealthy workplace environment.

- **Environment:**

Contamination.

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Challenges in Chemical Safety

- Lack of understanding of chemical hazard.
- Upskilling workers handling and using chemicals.
- Preventing incidents involving chemicals.
- Safely managing chemical emergencies.
- Focus on small and medium sized enterprises (SMEs).

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100 – 150,000 substances and chemical products.

7,000 classified.

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Focus on:

- Providing comprehensive information about chemical products.

  -Identify the hazard.
  -Manage the risk.

- Product Stewardship initiatives.

- Focus on SMEs.

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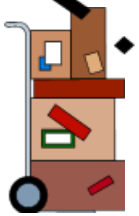
Chain of Responsibility

Manufacturer

Packer

Consignor or Shipper



Freight Forwarder

Shipping Company

Driver

Consignee

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- 90 million 20-foot ISO Containers are shipped out of China each year.
- 20% contain Dangerous Goods.
- Ships' crew have no responsibility once containers are landed.

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Prevent Harm to:

- **People**
- **Environment**
- **Reputation**

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Dangerous Goods, Hazardous Materials, Hazardous Substances Vs Chemicals

Requires comprehensive information:

- ✓ **Safety Data Sheets.**
- ✓ **Product Labels.**
- ✓ **Occupational Health and Safety (WES).**
- ✓ **Consumer protection.**

Onus on manufacturer to classify and provide information.

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- ✓ Standardise assessments and information.
- ✓ Harmonise transport and workplace risk management.
- ✓ Training.
- ✓ Facilitate international trade.
- ✓ Progressively address society's concerns.

HAZARD CLASSIFICATIONS FOR CLASSES 1-9 SUBSTANCES

References: Hazardous Substances [Classification] Regulations 2001, Land Transport Rule: Dangerous Goods 2005/NZS5433:2007

Class		Subclass	Hazard Classification
	Explosiveness		
1	Mass Explosion	1.1	A B C D E F G J L
1	Projection	1.2	B C D E F G H J K L
1	Fire and Minor Blast	1.3	C F G H J K L
1	No Significant Hazard	1.4	B C D E F G S
1	Very Insensitive	1.5	D
1	Extremely Insensitive	1.6	N
	Flammability		
2	Gases	2.1.1	A B
2	Aerosols *1	2.1.2	A
3	Liquids	3.1	A B C D
3	Liquid Desensitised Explosive	3.2	A B C
4	Readily Combustible	4.1.1	A B
4	Self Reactive	4.1.2	A B C D E F G
4	Solid Desensitised Explosive	4.1.3	A B C
4	Spontaneously Combustible	4.2	A B C
4	Dangerous When Wet	4.3	A B C
	Gases Under Pressure		
2	Non-Flammable, Non-Toxic Gases *2	2.2	
2	Toxic Gases *3	2.3	
	Capacity to Oxidise		
5	Liquids/Solids	5.1.1	A B C
5	Gases *2	5.1.2	A
5	Organic Peroxides	5.2	A B C D E F G
	Toxicity		
6	Acutely Toxic	6.1	A B C D E
6	Infectious Substances	6.2	
6	Skin Irritant	6.3	A B
6	Eye Irritant	6.4	A
6	Sensitisation	6.5	A B
6	Mutagen	6.6	A B
6	Carcinogen	6.7	A B
6	Reproductive/Developmental	6.8	A B C
6	Target Organ/Systemic	6.9	A B
	Radioactive		
7	Radioactive Material	7	
	Corrosiveness		
8	Metallic Corrosive	8.1	A
8	Skin Corrosive	8.2	A B C
8	Eye Corrosive	8.3	A
	Miscellaneous Dangerous Substances and Articles, Including Environmentally Hazardous Substances		
9	Miscellaneous Dangerous Substances	9	
9	Environmentally Hazardous Substances - Aquatic	9.1	A B C D
9	Environmentally Hazardous Substances - Soil	9.2	A B C D
9	Environmentally Hazardous Substances - Terrestrial Vertebrate	9.3	A B C
9	Environmentally Hazardous Substances - Terrestrial Invertebrate	9.4	A B C

Key:	
	Hazardous Substances and Dangerous Goods
	Hazardous Substance only
	Dangerous Goods only
	*1 HSNO criteria are UNRTDG 11th Revision
	*2 Oxidising Gases are HSNO 5.1.2A and DG 2.2
	*3 Toxic Gases are HSNO 6.1

- CHEMSAFE® HNSO compliance software
- PRINCE® site compliance assessment
- CHEMCALL® 24/7 emergency response service
- HSNO Approved codes of practice
- HSNO specialist training

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Classification of DG and GHS

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GHS Classification Process

- Identify composition of product.
- Identify hazards associated with product.
- Approve product.
- Assign appropriate classification and controls.

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Is the Product Hazardous?

A substance or mixture is hazardous if it exceeds one or more of the following GHS properties:

- **Explosives.**
- **Flammability.**
- **Ability to oxidise.**
- **Corrosiveness (metallic and biological).**
- **Toxicity (including chronic toxicity).**
- **Eco-toxicity.**

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Multiple Hazards

Single substance: Allyl Alcohol.

- **Toxic (poison).**
- **Flammable.**

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Safe Chemical Management in Workplaces

- Safety Data Sheets.
- Product Labels.

  •Safe storage.
  •Good housekeeping.

- Codes of Practice.
- Specialist training.
- Emergency preparedness.
- Codes of Practice.

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International Standards for Safe Chemical Management

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United Nations

Transport Division

Sub Committee of Experts on the Transport of Dangerous Goods (DG)

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'Orange Book'

Sub Committee of Experts on the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

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'Purple Book'

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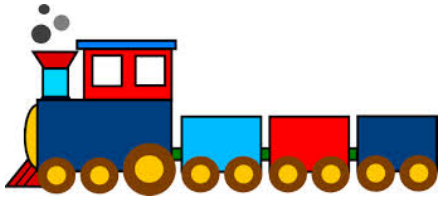
UN 'Orange Book': Transport of Dangerous Goods Model Regulations.



Maritime: International Maritime Dangerous Goods Code (IMDG).

Air: IATA – International Air Transport Association Transport of Dangerous Goods by Air.

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