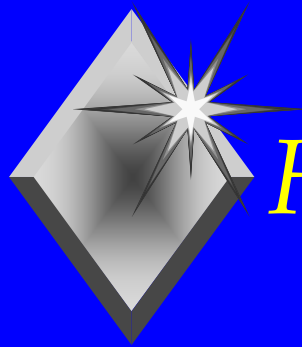
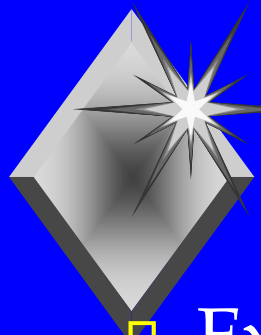


*HazCom Update
For Supervisors*



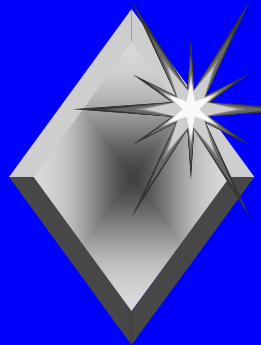
Hazard Communication Program

- Written HazCom Program
 - Administrator
 - List of MSDS
 - MSDS accessible
 - Training for Exposed Employees
 - Before first exposure
 - Before the introduction of new hazards
 - Update to hazard information



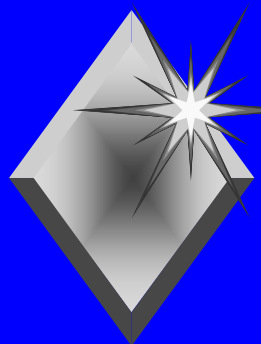
What Training?

- Explanation of the HazCom program, including information on labels, SDSs, and how to obtain and use available hazard information
 - Hazards of chemicals
 - Protective measures such as engineering controls, work practices, and the use of PPE
 - How to detect the presence or release of a hazardous chemical
 - using monitoring devices
 - observation
 - smell



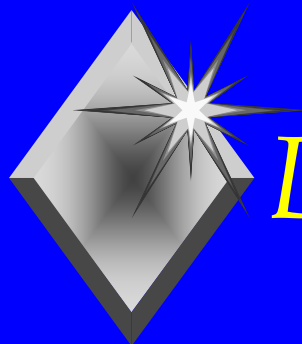
2012 Update to HazCom Standard

- **GHS = Globally Harmonized System**
- **MSDS = SDS (Safety Data Sheets)**
- **SDS Now Standardized**
 - **16 sections**
 - **Info always in same section**
- **New labeling requirements**
 - **Pictograms**
 - **Hazard statement**
 - **Signal word**



Definitions

- Contact info the Chemical Manufacture, Distributor, or Importer
 - Name
 - Address
 - Phone Number
 - Must be on Label
 - Must be on SDS - section 1



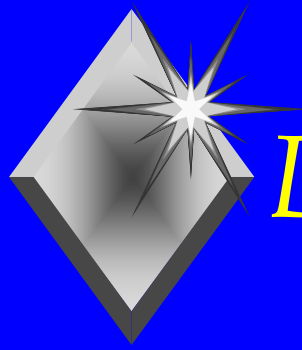
Definitions

- Hazard Statement (HS)
 - Describes the nature of the hazard
 - Degree of hazard
 - All applicable hazards
 - May be combined to improve readability
 - HS are specific to the hazard class and categories
 - Thus - Users should see
 - Same hazard statement for the same hazard
 - Regardless of producer or supplier of chemical



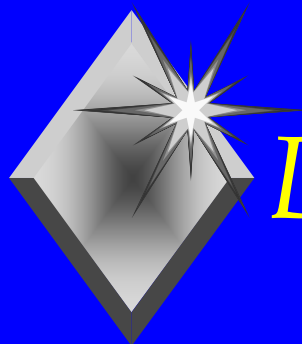
Definitions

- Pictogram
 - Square shape set on a point
 - Black hazard symbol
 - White background
 - Red Border/Frame
 - 8 designated pictograms



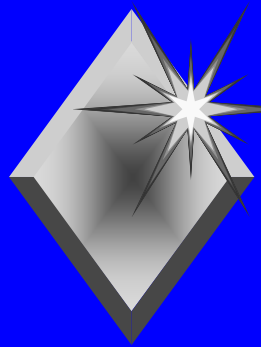
Definitions

- **Precautionary Statement**
 - Phrase that describes the recommended measures that should be taken to minimize or prevent adverse effects
 - From exposure to
 - Improper storage
 - Improper handling



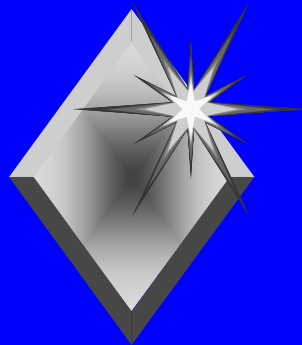
Definitions

- Product Identifier (PI)
 - Chem name, or Code #, or Batch #
 - Producer decides on appropriate PI
 - Same PI must be on **Label & Sect 1** of SDS



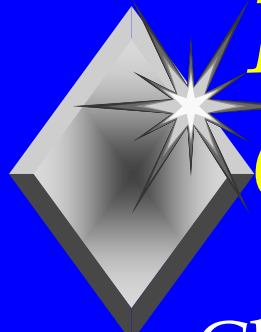
Definitions

- Signal Word
 - Indicates the relative level of severity of the hazard
- 2 Signal Words
 - Danger
 - More severe hazards
 - Warning
 - Less severe hazards
- Only 1 signal word on label



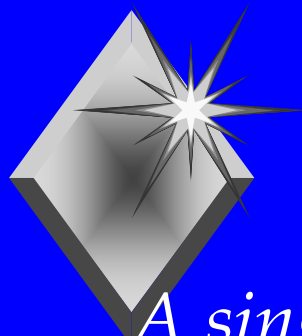
Hazard Classification

- Each type of hazard covered is considered a “hazard class” – examples
 - acute toxicity
 - carcinogenicity
- Most hazard classes are also sub-divided into “hazard categories”
 - to reflect the degree of severity
- Concept of “classification” –
 - rather than just determining that there is a hazardous effect (carcinogenicity), there is also a finding of how severe that effect might be (Category 1 or 2, etc)



Hazard Classification: Classification Provisions

- Chemical manufacturers and importers must classify each chemical they produce or import:
 - Determine the appropriate hazard classes and associated hazard categories
 - Based on an evaluation of the full range of available data/evidence for the chemical (no testing is required)
 - Appendix A for health hazard criteria
 - Introduction to App A provides the general approach to classification
 - Appendix B for physical hazard criteria

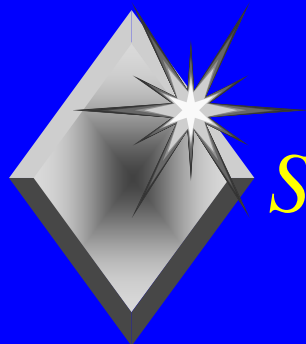


Classification & Hazard Statement

A single consistent hazard statement for each level of hazard within each hazard class

Example: Flammable Liquids

Category	Hazard Statement
1	Extremely flammable liquid and vapour
2	Highly flammable liquid and vapour
3	Flammable liquid and vapour
4	Combustible liquid



SDS information:

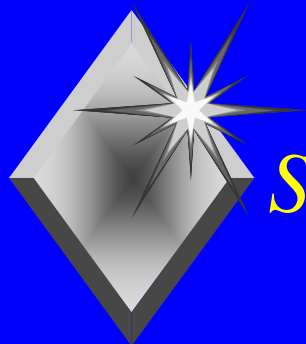
SAFETY DATA SHEETS – 16 sections:

□ Section 1, Identification

- product identifier
- manufacturer / distributor name
 - address, phone number; emergency phone number
- recommended use
- restrictions on use

□ Section 2, **Hazard(s) Identification**

- all hazards regarding the chemical
- required label elements



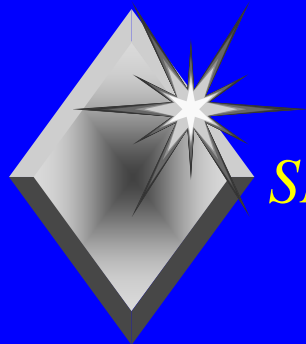
SDS information:

□ Section 3, Composition

- information on ingredients
 - chemical ingredients
 - trade secret claims

□ Section 4, **First-aid** Measures

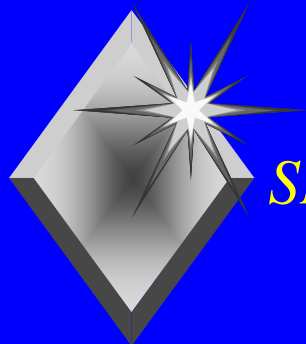
- Important symptoms
- Effects – acute - delayed
- Required treatment



SDS Information continued:

- **Section 5, Fire-fighting measures**
 - suitable extinguishing techniques
 - fire-fighting equipment
 - chemical hazards from fire

- **Section 6, Accidental release measures**
 - emergency procedures
 - protective equipment
 - proper methods of containment and cleanup



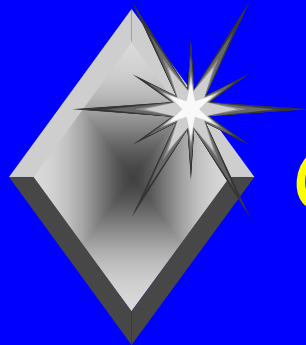
SDS Information continued

- **Section 7, Handling & Storage**
 - precautions for safe handling and storage
 - including incompatibilities
- **Section 8, Exposure controls / PPE**
 - OSHA's Permissible Exposure Limits (PELs)
 - Threshold Limit Values (TLVs)
 - appropriate engineering controls
 - **personal protective equipment (PPE)**
- **Section 9, Physical & Chemical properties**
 - the chemical's characteristics....



SDS Information continued:

- **Section 10, Stability & Reactivity**
 - chemical stability and possibility of hazardous reactions
- **Section 11, Toxicological information**
 - routes of exposure
 - related symptoms
 - acute and chronic effects
 - numerical measures of toxicity
- *Section 12, Ecological information** *non-mandatory for OSHA*
- *Section 13, Disposal considerations** " " "
- *Section 14, Transport information** " " "
- *Section 15, Regulatory information** " " "
- **Section 16, Other information**
 - date of preparation or last revision

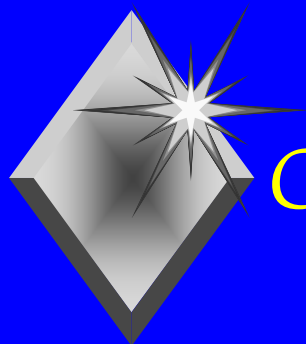


GHS Pictograms and Hazards

□ Health Hazards

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity



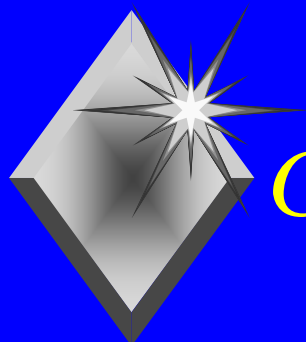


GHS Pictograms and Hazards

Flame

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides



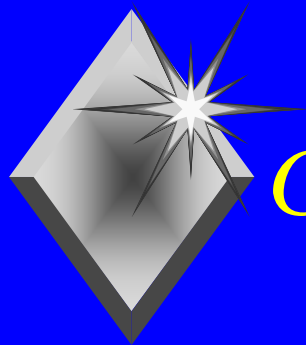


GHS Pictograms and Hazards

□ Exclamation Mark

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity
- Narcotic Effects
- Respiratory Tract Irritant



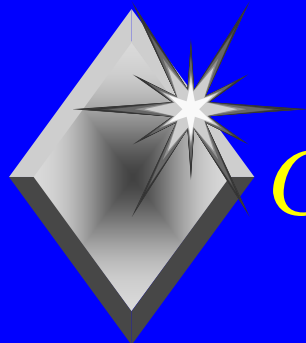


GHS Pictograms and Hazards

Gas Cylinder

- Gases Under Pressure



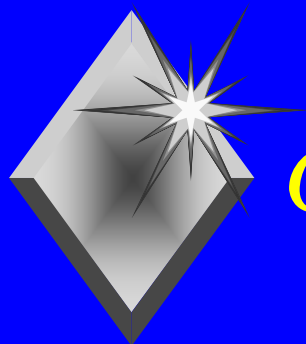


GHS Pictograms and Hazards

Corrosion

- ❑ Skin Corrosion/Burns
- ❑ Eye Damage
- ❑ Corrosive to Metals



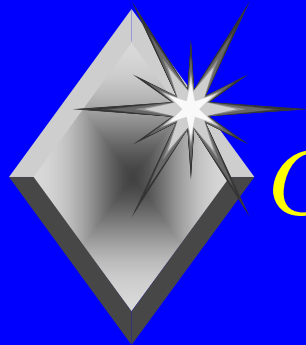


GHS Pictograms and Hazards

Exploding Bomb

- ❑ Explosives
- ❑ Self-Reactives
- ❑ Organic Peroxides



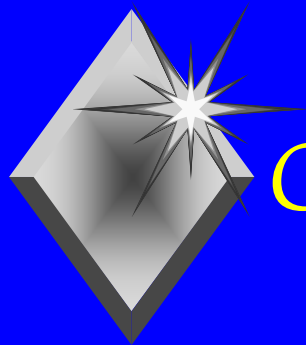


GHS Pictograms and Hazards

Flame Over Circle

- Oxidizers



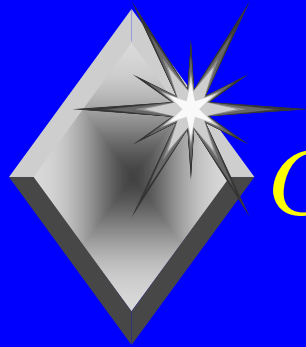


GHS Pictograms and Hazards

Skull and Crossbones

- Acute Toxicity (fatal or toxic)



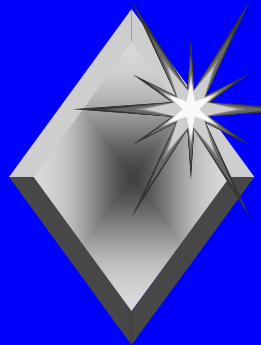


GHS Pictograms and Hazards

Environment

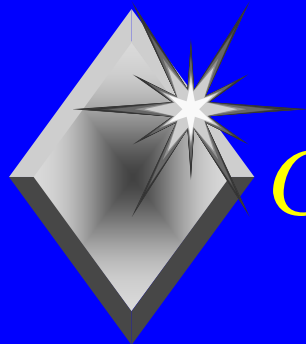
- Non-Mandatory -OSHA
- Aquatic Toxicity





Labels and Other Forms of Warning

- Paragraph (f) extensively re-written to incorporate the GHS approach
- Final rule sets forth detailed, required elements for labels



GHS Pictograms and Hazards

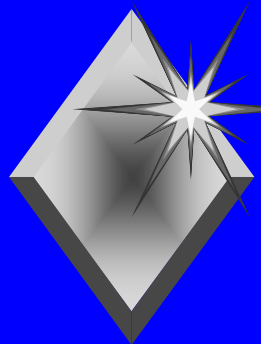
Labels may have:

Multiple pictograms

Hazards / Hazard statements

But only one of two Signal Word






- Warning
- Danger



What is the label for

- Tell you what it is
- Tell you how to properly store
Chemical
- First aid Information

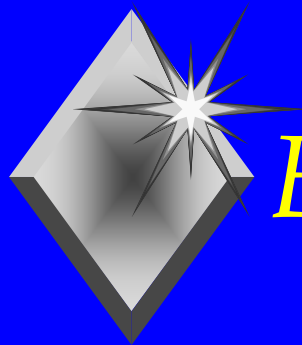
Label Example

Benzene	Weight 20Kg	1. Name of Chemical
	CAS No. 71-43-2 UN No. 1114	2. Barcode
Hazard		3. Precautionary Statement
   		4. Pictogram
<p>Hazard Information</p> <p>Flammable Corrosive Health Hazard</p> <p>Precautionary Statements Liquid or vapor that is extremely flammable Fatal if swallowed Skin Irritation Serious eye irritation Threat of genetic damage Threat of carcinogenicity May damage fertility or unborn child Organ target effects Threat of asphyxiation and suffocation May cause irritation to respiratory system Organ target (central nervous system, respiratory system, immune system) Organ target (reproductive system)</p>		5. Hazard Information
<p>Precautionary Statement</p> <p>Observe special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from ignition sources, such as hot surfaces/open flame. Ground bond the container and working equipment if electrostatic sensitive material is being released. Use explosion proof electrical/welding/lighting... equipment. Take precautionary measures against static discharge. Do not breathe vapors/mist. Wear protective gloves and eye face protection. Use personal protective equipment as required. Do not breathe dust/vapors/mist. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. If inhaled: Move to fresh air. Do not induce vomiting. If on skin (dry): Take off contaminated clothing immediately. Wash the skin with water/shower. If on skin: Wash with plenty of soap and water. Take off contaminated clothing and shoes before re-entry. If swallowed: Rinse mouth with water and keep at rest in a position comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical aid/attention. Seal container tightly and store in well-ventilated area. Store container in cool/dry well-ventilated place. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.</p>		6. Note of caution
<p>Net Weight: 20kg (44.1 lbs) Net Content: 20kg (44.1 lbs) (44.1 lbs)</p> <p>For enquiries, please contact SATELIM PACIFIC PTE LTD. Phone (Singapore) 6744 5130 or Enquiry Fax (Singapore) 6744 5131</p> <p>405A, Aljunied Road, #04-01/02, SATELIM Technology, Singapore 380407 Tel: (65) 6771 5100 Fax: (65) 6771 5111</p> <p>www.satelim.com</p>		7. Manufacturer or Provider of Chemical company



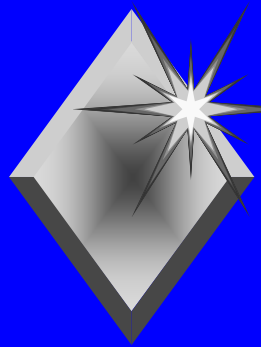
PRODUCT GHS LABELS (Benzene example):

- **Product Identifier:** CODE _____
Product Name _____
- **Supplier Identification - Company Name** _____
- Emergency Phone Number _____
- **Precautionary Statements Such As:** Keep container tightly closed. Store in cool, well ventilated place that is locked. Keep away from heat/sparks/open flame. No smoking.; Only use non-sparking tools.; Use explosion-proof electrical equipment; Take precautionary measure against static discharge. Ground and bond container and receiving equipment. ; Do not breathe vapors; Wear Protective gloves. Do not eat, drink or smoke when using this product. ; Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.
- **In Case of Fire:** use dry chemical (BC) or Carbon dioxide (CO₂) fire extinguisher to extinguish.
- **First Aid:** If exposed call Poison Center. If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.
- **Hazard Pictograms:**
- **Signal Word: Danger or Warning**
- **Hazard Statement: Highly flammable liquid and vapor. May cause liver and kidney damage.**
- **Supplemental Information**
- **Directions for use**



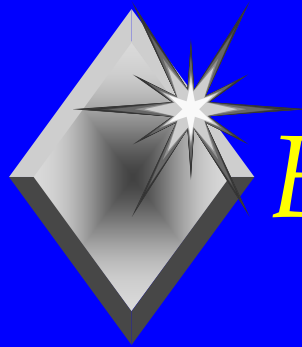
Effective GHS Dates

- Dec. 1, 2013
 - Employers must have trained employees on
 - New label elements
 - SDS format and sections
 - Training appropriate for audience



Effective GHS Dates

- June 1, 2015
 - Compliance with all modified provisions of the final rule
- Dec. 1, 2015
 - Distributors must not ship containers without a GHS compliant label



Effective GHS Dates

- June 1, 2016
 - Employers must have
 - Updated workplace labels
 - Updated HazCom program as necessary
 - Additional training on any new physical or health hazards