



GHS TRAINING

The
Globally Harmonized System
of Classification and Labeling
of Chemicals



What We'll Discuss?

- A little history about GHS
- Written program
- Labels
- Safety Data Sheets (SDS)
- Training
- Compliance dates



Major Changes to the Hazard Communication Standard:

- **Hazard classification:** Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures of chemicals.
- **Labels:** Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.
- **Safety Data Sheets:** Will now have a specified 16-section format.
- **Information and Training:** Employers are required to train workers on the new labels elements and safety data sheets format to facilitate recognition and understanding.
 - The revised HCS and more information are available from OSHA at <http://www.osha.gov/dsg/hazcom/index.html>.

What is GHS?

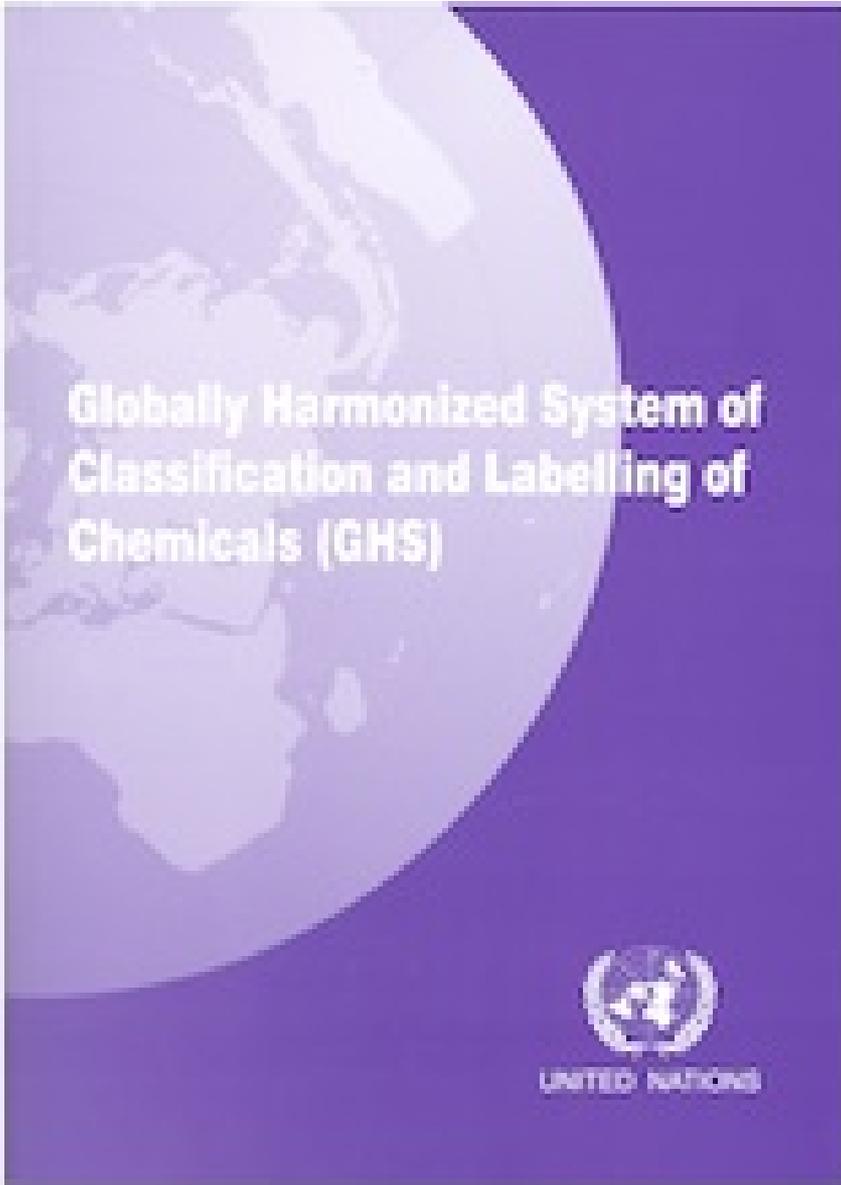
- *The Globally Harmonized System of Classification and Labeling of Chemicals*
- A system for standardizing and harmonizing the classification and labeling of chemicals



What is the GHS?

- A logical and comprehensive approach to:
 - Defining health, physical and environmental hazards of chemicals
 - Classification processes that compare hazard criteria
 - Communicating hazard information, protective measures, etc. on labels and Safety Data Sheets (SDS).





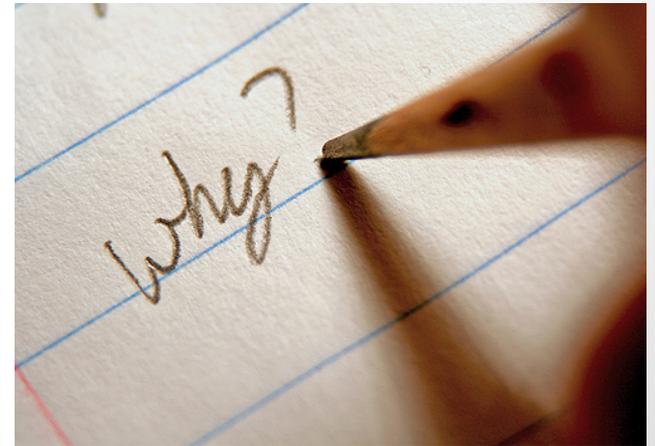
**Globally Harmonized System of
Classification and Labelling of
Chemicals (GHS)**



UNITED NATIONS

Why is the GHS needed?

- There is a lot of variation in requirements from country to country and state to state.
- The adoption of these requirements will provide:
 - Better employee protection
 - Better trade for companies



Benefits of GHS

- The System provides benefits for:
 - Governments
 - Companies
 - Workers
 - and Members of the Public
- Everyone gets information that is:
 - Adequate
 - Practical
 - Reliable
 - Comprehensible

What is Covered?

- All hazardous chemicals
- The term “chemical” is used broadly to include:
 - Substances
 - Products
 - Mixtures
 - Preparations
 - Etc.



Key Principles Of Harmonization



- Protections will not be reduced;
- Will be based on intrinsic properties (hazards) of chemicals;
- All types of chemicals will be covered;
- All systems will have to be changed;
- Involvement of all stakeholders should be ensured;
- Comprehension must be addressed.



Target Sectors

Transport

- Will remain similar to current requirements
 - Physical, acute and environmental hazard data are expected to be adopted
 - Containers will have pictograms addressing acute toxicity, physical and environmental hazard
 - Signal words, hazard statements and SDS are not expected to be adopted

Workplace

- Most of the GHS elements will be adopted
 - Physical and health hazard criteria
 - Labeling
 - SDS
 - Employee training

Target Sectors

Consumer

- Labels will be the primary focus
 - Hazard criteria will be adopted
 - Will include core elements of GHS

Pesticides

- GHS will be adopted
 - Hazard criteria will be adopted (where appropriate)
 - Labels will include the core elements of GHS

What's The Difference?



- Written program – mostly unchanged
- Training – new labels/SDS
 - keep same training & add info as it comes into workplace
- Labels - new standards = dramatic changes
- (M)SDS – extensive changes

Written Program

- Definitions have changed or been revised
- Some sections called differently
 - Hazard determination *now*
 - Hazard classification
- Mandatory appendices – give guidance

What is Classification?

- Starting point for hazard communication
- Involves identification of the hazard(s) of a chemical/mixture



Labels

- There will be MUCH more information on labels now.
- The descriptions of hazards are much more specific.



Physical Hazards

EXAMPLES OF NEW DESCRIPTIONS OF PHYSICAL HAZARDS

- Explosives
- Flammable Gases
- Flammable Aerosols
- Oxidizing Gases
- Gases Under Pressure
- Flammable Liquids
- Flammable Solids
- Self-Reactive Substances
- Pyrophoric Solids
- Pyrophoric liquids
- Self-Heating Substances
- Oxidizing Liquids
- Oxidizing Solids
- Organic Peroxides
- Corrosive to Metals

Health Hazards

- Acute Toxicity
- Skin Corrosion/Irritation
- Serious Eye Damage/Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicology
- Target Organ Systemic Toxicity - Single Exposure
- Target Organ Systemic Toxicity - Repeated Exposure
- Aspiration Toxicity



Environmental Hazards

- Hazardous to the Aquatic Environment
 - Acute Aquatic Toxicity
 - Chronic Aquatic Toxicity
 - Bioaccumulation potential
 - Rapid degradability



Signal Words

- A signal word is a word that typically appears near the top of a warning, sometimes in all capital letters.
- Common examples include DANGER, WARNING, CAUTION, and NOTICE.
- The signal word is generally understood to serve a dual purpose: alerting the user to a hazard and indicating a particular level of hazard.



Signal Words

- This final rule requires the use of one of two signal words for labels

— **DANGER** or **WARNING** —

DANGER is used for the more severe hazard categories, while WARNING denotes a less serious hazard.

Statements



Intended to form a set of standardized phrases about the hazards of chemical substances and mixtures that can be translated into different languages.

Hazard Statements

- Hazard statements describe the hazards associated with a chemical.
- Each hazard statement is designated a code, starting with the letter H and followed by three digits.
- Statements which correspond to related hazards are grouped together by code number, so the numbering is not consecutive.
- The code is used for reference purposes, for example to help with translations, but it is the *actual phrase* which should appear on labels and safety data sheets.



Hazard Statements

HEALTH HAZARDS

- H300: Fatal if swallowed
- H301: Toxic if swallowed
- H302: Harmful if swallowed
- H312: Harmful in contact with skin
- H313: May be harmful in contact with skin

PHYSICAL HAZARDS

- H220: Extremely flammable gas
- H221: Flammable gas
- H227: Combustible liquid
- H228: Flammable solid
- H270: May cause or intensify fire; oxidizer

Hazard Statements

ENVIRONMENTAL HAZARDS

H400: Very toxic to aquatic life

H401: Toxic to aquatic life

H402: Harmful to aquatic life

H410: Very toxic to aquatic life with long lasting effects

H411: Toxic to aquatic life with long lasting effects

H412: Harmful to aquatic life with long lasting effects

H413: May cause long lasting harmful effects to aquatic life

H414: Harms public health and the environment by destroying ozone in the upper atmosphere

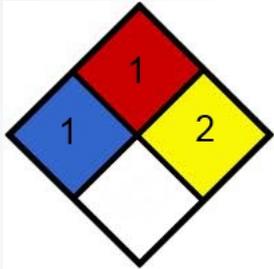


Hazard Statements

- A specific harmonized hazard statement for each level (degree of hazard) within each hazard class:
 - Example: Flammable liquids
 - Category 1: Extremely flammable liquid and vapor
 - Category 2: Highly flammable liquid and vapor
 - Category 3: Flammable liquid and vapor
 - Category 4: Combustible liquid

Understand the numbers...

NFPA



- 4 = severe**
- 3 = serious**
- 2 = Moderate**
- 1 = Slight**
- 0 = Minimal**

GHS Nomenclature

- Cat. 1 severe hazard
- Cat. 2 serious hazard
- Cat. 3 moderate hazard
- Cat. 4 slight hazard
- Cat. 5 minimal hazard

Flammability criteria	GHS Category	NFPA Rating	HMIS Rating
Flpt <73F, bpt <100F	1 or 2	4	4
Flpt <73, bpt ≥100F Flpt >73 & <100	2 or 3	3	3
Flpt ≥ 100F & <200F	3 or 4	2	2
Flpt >200	None	1	1

Precautionary Statement

- Precautionary statements describe recommended measures that should be taken to protect against hazardous exposures, or improper storage or handling of a chemical.
- Indicates how the product should be handled to minimize risks to the user (as well as to other people and the general environment)

General precautionary statements

Prevention precautionary statements

Response precautionary statements

Storage precautionary statements

Disposal precautionary statements



Precautionary Statement

GENERAL

- P101: If medical advice is needed, have product container or label at hand
- P102: Keep out of reach of children
- P103: Read label before use



Precautionary Statement

PREVENTION

P201: Obtain special instructions before use

P202: Do not handle until all safety precautions have been read and understood

P210: Keep away from heat/sparks/open flames/hot surfaces –
No smoking

P240: Ground/bond container and receiving equipment

P280: Wear protective gloves/protective clothing/eye
protection/face protection

P281: Use personal protective equipment as required



Precautionary Statement

RESPONSE

P301: IF SWALLOWED:

P302: IF ON SKIN:

P303: IF ON SKIN (or hair):

P304: IF INHALED:

P305: IF IN EYES:

P306: IF ON CLOTHING:

P341: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

P342: If experiencing respiratory symptoms:

P350: Gently wash with soap and water

P351: Rinse cautiously with water for several minutes

Precautionary Statement

STORAGE

P404: Store in a closed container

P405: Store locked up

P406: Store in a corrosive resistant/... container with a resistant inner liner

P407: Maintain air gap between stacks/pallets

P420: Store away from other materials

P422: Store contents under ...

P402+404: Store in a dry place. Store in a closed container

P403+233: Store in a well ventilated place. Keep container tightly closed

Precautionary Statement

DISPOSAL

- P501: Dispose of contents/container to ...

Pictograms

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.



There are nine pictograms under the GHS to convey the health, physical and environmental hazards. The final Hazard Communication Standard (HCS) requires eight of these pictograms, the exception being the environmental pictogram, as environmental hazards are not within OSHA's jurisdiction.



Pictograms

- A symbol or picture which represents a word or idea.
- A graphical composition representation that includes a symbol plus other graphic elements to convey specific information.

Pictogram Requirements

LABELS

- When the chemicals meet classification criteria under any classes identified by GHS
- MUST always have a black symbol on a white background with a red border

SDS's

- Pictograms or symbols may appear on the SDS



Pictogram Shape and Color

- Black frame may be used for shipments within one country
- Where transport pictogram appears - GHS pictogram for same hazard should not appear



GHS Pictograms



Explosives,
self-reactives,
organic peroxides



Gases under pressure



Flammables, pyrophoric,
Self-heating, emits flam gas,
self-reactive,
organic peroxides



oxidizers



Acute toxicity,
fatal or toxic



Skin corrosion/burns,
eye damage
corrosive to metals



Carcinogen, mutagenicity,
Repro toxicity, resp sensitizer,
target organ toxicity,
aspiration toxicity



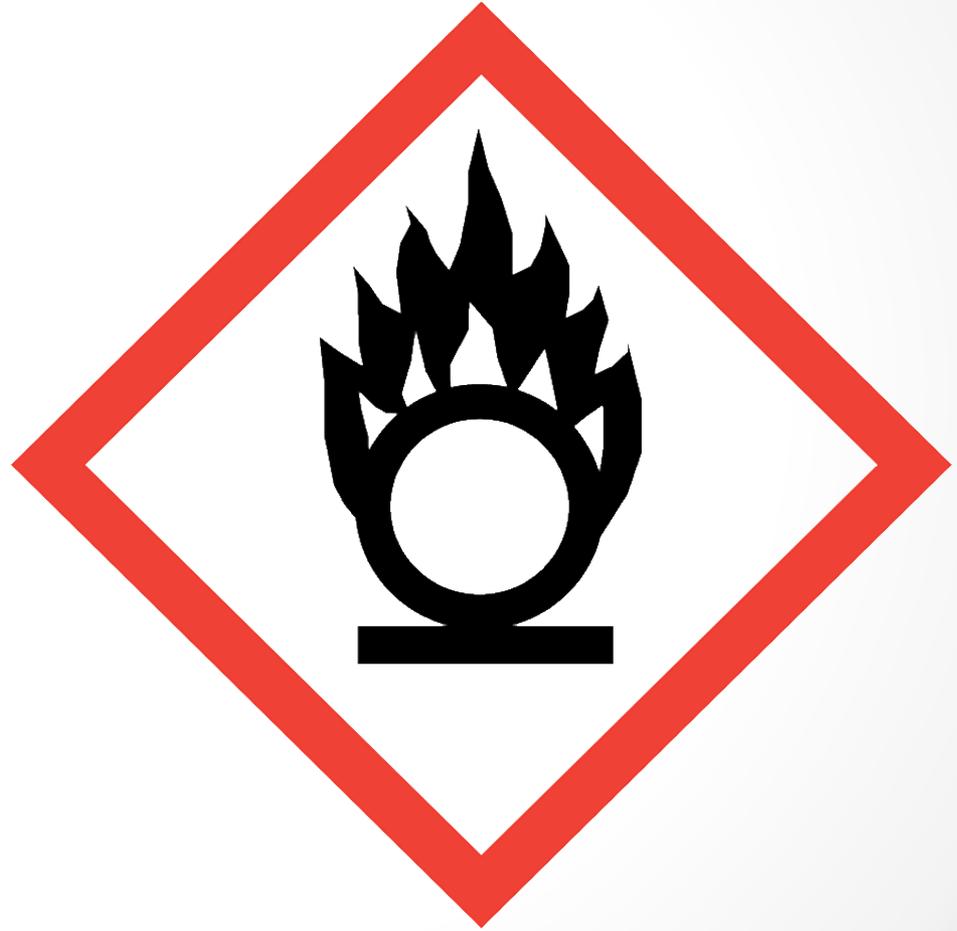
Irritant, skin sensitizer,
acute toxicity, narcotic
effects, resp tract irritant,
haz to ozone layer



Aquatic toxicity

Flame Over Circle

- Oxidizers



Flame



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

Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides

Skull and Crossbones

- Acute Toxicity (fatal or toxic)



Corrosive



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

Gas Cylinder



- Gases under pressure

Health Hazard



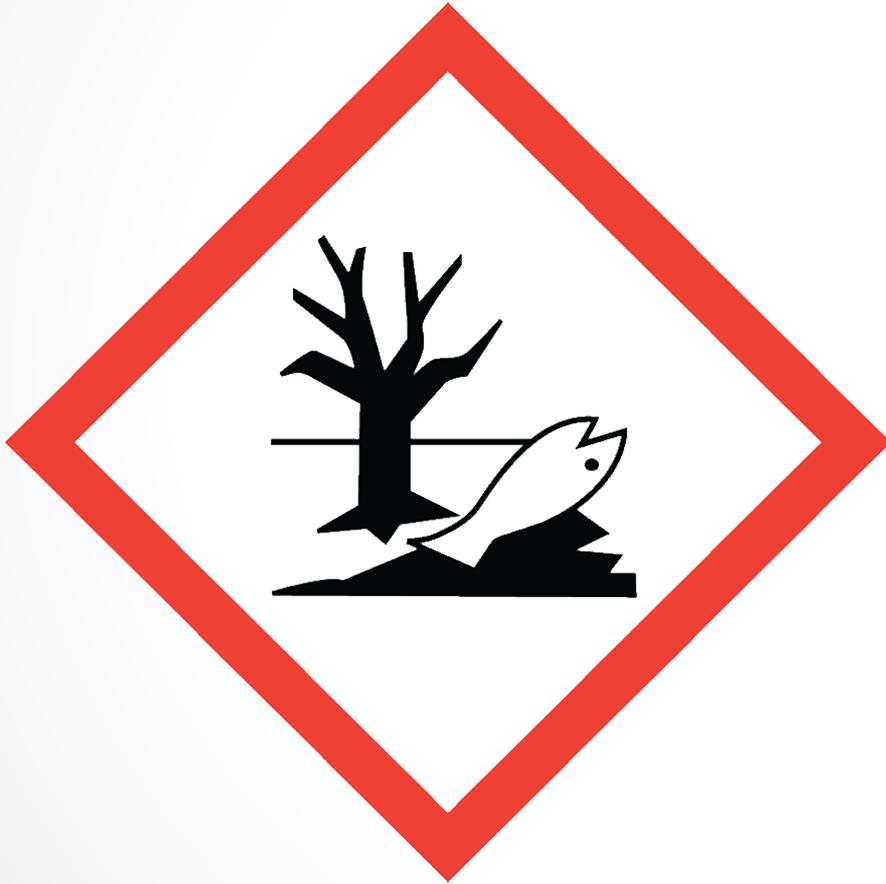
- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Exclamation Mark

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)



Environment (Non-Mandatory)



- Aquatic Toxicity

Transport Pictograms



Pictograms Not Incorporated into GHS

Class 6.2

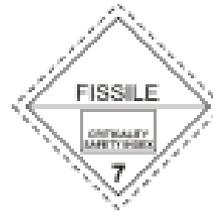


Infectious substances

Class 7



Radioactive material



Class 9



Miscellaneous dangerous substances and articles

Labels



New Label Requirements

- Current OSHA Standard
 - Material identity
 - Hazard warnings
 - Supplier information

Workplace Label

Chemical Name CAS# 55-55-5	
Health Hazards / Target Organ Effects Irritant to: Eye, Respiratory system and mucos membranes, Liver, Kidney, Eyes, Skin, Lungs and/or Respiratory System	
Physical Hazards Flammable Liquid	
Route of Entry: Inhalation, Skin, Eye, Ingestion	
 XYZ Chemical, 234 E. 3 rd St; Murray KY 42071 227.777.6565	

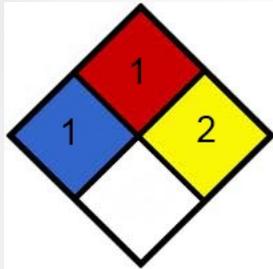
GHS Label

GHS Chemical	 
Danger! Toxic If Swallowed, Flammable Liquid and Vapor	
Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat / sparks / open flame - No smoking. Wear protective gloves and eye / face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in a cool / well ventilated place.	
IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor / physician. Rinse mouth.	
In case of fire, use water fog, dry chemical, CO2 or "alcohol" foam.	
XYZ Chemical, 234 E. 3 rd St; Murray KY 42071 227.777.6565	

- Updated OSHA GHS Standard
 - Product identifier
 - Signal word
 - Hazard statements
 - Precautionary statements
 - Pictograms
 - Supplier information
 - Supplemental information

Update to GHS

Tetraethyl Resin



4 = severe
 3 = serious
 2 = Moderate
 1 = Slight
 0 = Minimal

Health	2*
Flammability	1
Reactivity	1
PPE	B

Refer to (M)SDS for more details

Dow Chemical
 1181 West Oak Parkway, Marietta, Georgia 30062-221, United States
 Phone: 800-366-4740

Current OSHA Template

- Identify of hazardous chemical
- Hazard warnings
- Contact information for manufacturer/importer/ responsible party

Tetraethyl Resin

Danger



Heating may cause a fire.
 Combustible liquid.
 May cause damage to organs through prolonged or repeated exposure.
 Harms public health and the environment by destroying ozone in the upper atmosphere.
 May cause damage to organs through prolonged or repeated exposure by skin contact.
 Contains epoxy constituents. May produce an allergic reaction.

If medical advice is needed, have product container or label at hand.
 Keep out of reach of children.
 Read label before use.
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat/sparks/open flames / hot surfaces. No Smoking.

Supplemental Label Information
 For further information on this product, see Safety Data Sheet

Contains
 Isocyanic acid, polymethylene polyethylene ester >> Benzene, methylenebis

GHS Template

- Product Identifier
- Pictograms
- Signal word
- Precautionary statements
- Hazardous Statements
- Supplemental Information
- Supplier Identification

2



1 Sulfuric Acid

3 **Danger!** May be harmful if swallowed.
 Causes sever skin burns and eye
 4 damage. Fatal if inhaled. Harmful to
 aquatic life.

2



Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.

5

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

In case of fire Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

See Material Safety Data Sheet for further details regarding safe use of this product.

6

Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA Telephone : +18003255832

1

Product Identifier

4

Hazard Statements

2

Pictograms

5

Precautionary Statements

3

Signal word, "Danger!"

6

Supplier Information

GHS Label

Identity

FLAMMABLE MATERIAL
Hazardous Components: Ethyl Alcohol (64-17-5); Methanol (67-56-1)

Pictograms



Signal Word

Highly flammable liquid and vapor. Causes severe skin burns and eye damage. May be harmful if inhaled. May cause respiratory irritation and drowsiness or dizziness. May cause cancer. May damage fertility or the unborn child. Very toxic to aquatic life.

Hazard Statements

Prevention Avoid breathing dust, fume, gas, mist, vapors and/or spray. Wear protective gloves, clothing, and eye/face protection. Wash thoroughly after handling. Do not handle until all safety precautions have been read and understood. Ground and/or bond container and receiving equipment. Keep away from heat, sparks, open flames and/or hot surfaces - No smoking. Use explosion-proof electrical, ventilating and/or lighting equipment. Use only non-sparking tools. Avoid release to the environment.

Precautionary statements

Response IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of fire: Use appropriate media for extinction.

Storage/Disposal Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

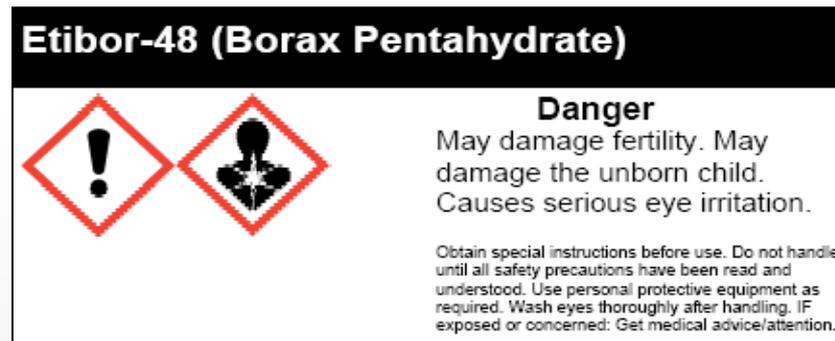
2 percent of this product consists of an ingredient of unknown toxicity.

Manufacturer or Distributor

Industrial Data Systems 709 Nissan Drive Smyrna, TN 37167
Emergency: 800-555-5555

Internal Label Requirements

- Product identifier
 - Signal word
 - Hazard statements
 - Pictogram(s)
 - Precautionary statements
- OR**
- Product identifier
 - AND
 - Words, pictures, symbols or combination



Safety Data Sheets

11050 - AQUA REGIA

Revision date 2003-04-17

SAFETY DATA SHEET AQUA REGIA

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

Product name AQUA REGIA
In-house No. 0720
Supplier AB GÖTEBORGS TERMOMETERFABRIK
Södra Långebergsgatan 30
SE-421 32 Västra Frölunda
Tel: 031-680490
Fax: 031-680717

2. COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS No.	Content	Symbol	R-phrases
NITRIC ACID, 20 - 70 % HNO ₃	231-714-2	7607-37-2	30-40 %	-	
HYDROCHLORIC ACID >25% HCl	231-595-7	7647-01-0	60-70 %	-	

See section 16 for explanations to R-phrases

CAS No. 8007-56-5

3. HAZARDS IDENTIFICATION

EYE CONTACT: can cause serious and permanent eye injury. SKIN CONTACT: causes burns, that can be deep and poor in healing. INGESTION: causes serious burns in the stomach and perforation. INHALATION: causes burns in the lungs and respiratory tract, that can be delayed. Can cause lungoedemas.

4. FIRST AID MEASURES

Inhalation Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Keep the affected person warm and at rest. Get prompt medical attention. When unconscious, loosen tight clothing and position in secured recovery position.

Ingestion NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Promptly get affected personnel to drink large volumes of water to dilute the swallowed chemical. DO NOT induce vomiting. Get medical attention immediately.

Skin Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get medical attention if irritation persists after washing.

Eyes Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5. FIRE FIGHTING MEASURES

Extinguishing media Use extinguishing media appropriate for surrounding fire.

Special fire fighting procedures Move container from fire area if it can be done without risk. Avoid breathing fire vapours.

Basis of SDS

- Flexibility of format has been removed.
- Classified for health and physical hazards based on GHS criteria.
- There is more consistency in the 16 mandated sections.

Section 1: Identification

- This section identifies the chemical on the SDS as well as the recommended uses.
- The required information consists of:
 - Product identifier used on the label and any other common names or synonyms by which the substance is known.
 - Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
 - Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).

Section 2: Hazard(s) Identification

- This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards.

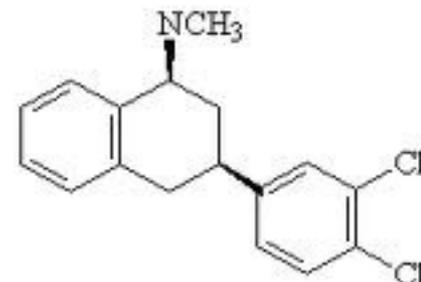


Section 2: Hazard(s) Identification

- The required information consists of:
 - The hazard classification of the chemical (e.g., flammable liquid, category1).
 - Signal word.
 - Hazard statement(s).
 - Pictograms
 - Precautionary statement(s).
 - Description of any hazards not otherwise classified.

Section 3: Composition/Information Ingredients

- This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives.
- The required information consists of:
 - Substances
 - Chemical name.
 - Common name and synonyms.
 - Chemical Abstracts Service (CAS) number and other unique identifiers.
 - Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.
 - Mixtures
 - Same information required for substances.



Section 4: First-Aid Measures

- This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical.
- The required information consists of:
 - Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
 - Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
 - Recommendations for immediate medical care and special treatment needed, when necessary.



Section 5: Fire-Fighting Measures

- This section provides recommendations for fighting a fire caused by the chemical.
- The required information consists of:
 - Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
 - Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
 - Recommendations on special protective equipment or precautions for firefighters.



Section 6: Accidental Release Measures

- This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment.
- The required information may consist of recommendations for:
 - Use of personal precautions
 - Emergency procedures
 - Methods and materials used for containment
 - Cleanup procedures

Section 7: Handling & Storage

- This section provides guidance on the safe handling practices and conditions for safe storage of chemicals.
- The required information consists of:
 - Precautions for safe handling
 - Recommendations on the conditions for safe storage



Section 8: Exposure Controls/Personal Protection

- This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure.
- The required information consists of:
 - OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limits used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
 - Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).

Section 9: Physical and Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture. The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Odor;
- Vapor pressure;
- Vapor density;
- pH;
- Relative density;
- Melting point/freezing point;
- Solubility(ies);
- Initial boiling point and boiling range;
- Flash point;
- Evaporation rate;
- Flammability (solid, gas);
- Upper/lower flammability or explosive limits;
- Partition coefficient: n-octanol/water;
- Auto-ignition temperature;
- Decomposition temperature; and
- Viscosity.

Section 10: Stability & Reactivity

- This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other.
- The required information consists of:
 - Reactivity
 - Description of the specific test data for the chemical(s).
 - Chemical stability
 - Description of any stabilizers that may be needed to maintain chemical stability.
 - Indication of any safety issues that may arise should the product change in physical appearance.

Section 11: Toxicological Information

- This section identifies toxicological and health effects information or indicates that such data are not available.



Section 11: Toxicological Information

- The required information consists of:
 - Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
 - Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
 - The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
 - Description of the symptoms.
 - This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.

Section 12: Ecological Information (non-mandatory)

- This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment.
- The information may include:
 - Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
 - Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.

Section 13: Disposal Considerations (non-mandatory)

- This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices.
- The information may include:
 - Description of appropriate disposal containers to use.
 - Recommendations of appropriate disposal methods to employ.
 - Description of the physical and chemical properties that may affect disposal activities.
 - Language discouraging sewage disposal.
 - Any special precautions for landfills or incineration activities

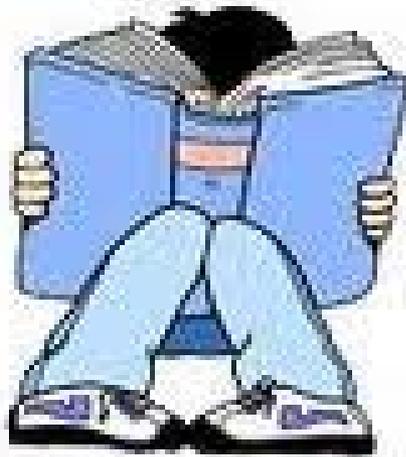


Section 14: Transport Information (non-mandatory)

- This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea.
- The information may include:
 - UN number (i.e., four-figure identification number of the substance)¹.
 - UN proper shipping name¹.
 - Transport hazard class(es)¹.
 - Packing group number, if applicable, based on the degree of hazard².
 - Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)).



Section 15: Regulatory Information (non-mandatory)



- This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS.
- The information may include:
 - Any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, Department of Transportation, Environmental Protection Agency, or Consumer Product Safety Commission regulations)

Section 16: Other Information

- This section indicates when the SDS was prepared or when the last known revision was made.



Employer Responsibilities

- Employers must ensure that the SDSs are readily accessible to employees for all hazardous chemicals in their workplace.



" I lead by example as long as I'm not held legally liable. "

Effective Dates

December 1, 2013

- Train employees on the new label elements and SDS format.

Employers

Effective Dates and Requirements

June 1, 2015

- Compliance with all modified provisions of this final rule, except:

December 1, 2015

- The Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS Label

Chemical manufacturers, importers, distributors and employers

Effective Dates and Requirements

June 1, 2016

- Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.

Employers



Summary

- Update SDS
- Update labels
- Begin training on new pictograms/info
- Results
 - Better employee protection
 - Consistent information
 - Clear chemical hazard info



