NAPIM Webinar Developing Safety Data Sheets (SDS) that meet the OSHA 2012 Hazcom Standard Requirements Part I

Presented by: Denese A. Deeds, CIH

Industrial Health & Safety Consultants, Inc. Shelton, CT

Overview

- What is the GHS?
- The final OSHA Standard (Hazcom 2012)
- What are the hazards covered by the GHS?
- What is classification?
- How are SDS and labels developed?
- Where can I get classification information for my ingredients?

What is GHS?

- GHS refers to the United Nations (UN) Globally Harmonized System of Classification and Labeling of Chemicals
- Initiated at the UN Conference on the Environment and Development in Rio de Janeiro in 1992
- Harmonize the classification and the hazard communication elements of chemicals (labeling and safety data sheets)
- GHS harmonizes most classification criteria for supply and transportation and is based on the intrinsic properties of substances
- Building Block Approach

Globally Harmonized System of Classification and Labeling of Chemicals

- Standardized approach to 3 basic elements:
  - Define health, physical and environmental hazard data (Hazard Data)
  - Classify hazards (Classification)
  - Communicate hazards in the workplace and beyond (Communication)
- Target audiences are:
  - Consumers
  - Workers
  - Transport workers
  - Emergency responders

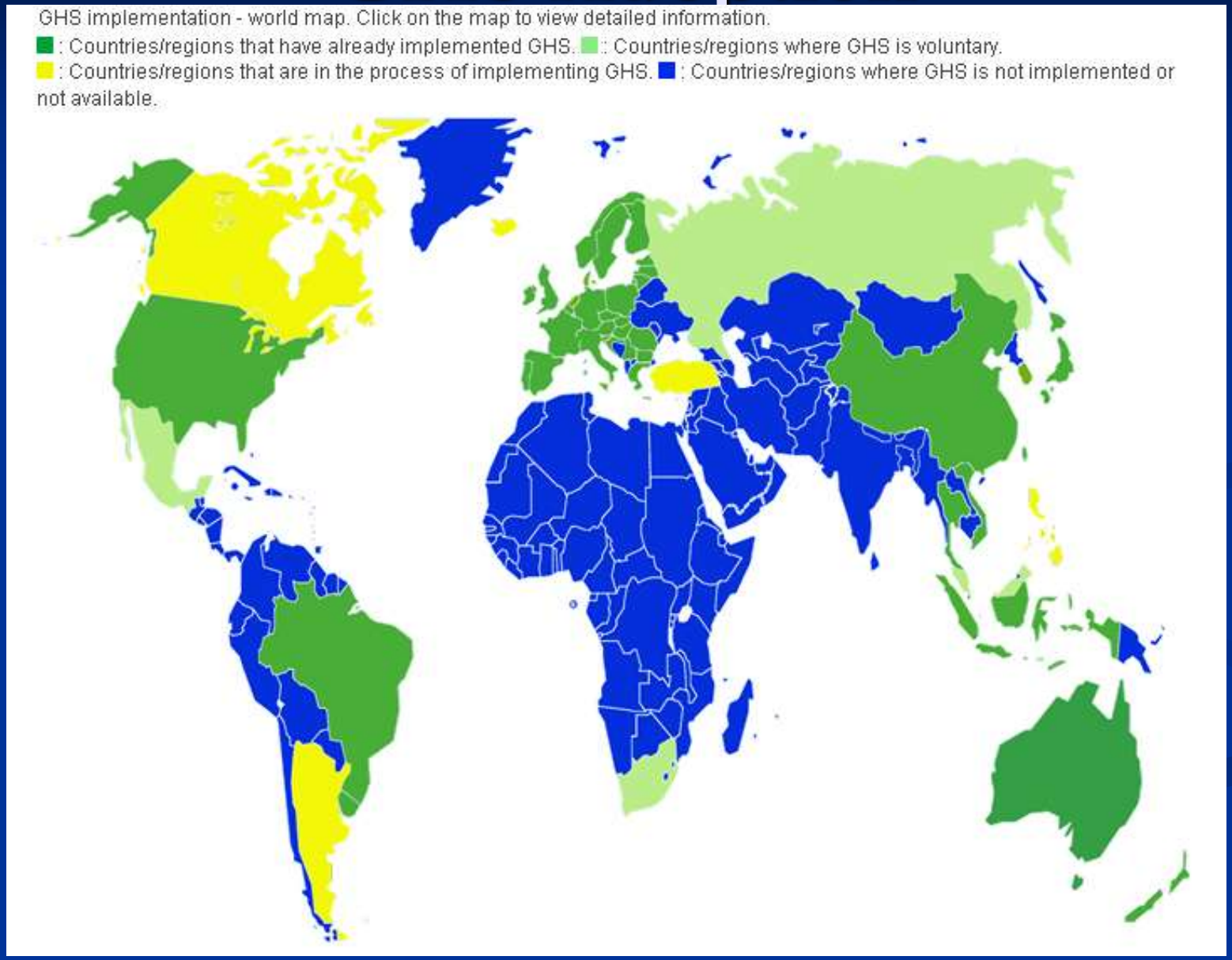
Benefits of the GHS

- Provides global benefits, as well as benefits to governments, industry, and chemical users (workers and consumers)
  - Enhances the protection of human health and the environment through the provision of harmonized chemical safety and health information
  - Reduces the need for duplicative testing of chemicals
  - Provides the informational infrastructure for chemical safety and health management programs
  - Increases efficiencies, reduces costs of compliance, etc.

Purple Book

- The first version became available in 2003 in the form of the so called "purple book" (compared to the orange book for transportation). Regular updates should take place every two years
- United Nations (UN) publication of the GHS
- Fifth edition (Rev. 5), 2013
- Outlines the provisions in four parts:
  - Introduction (scope, definitions, hazard communication)
  - Classification criteria for physical hazards
  - Classification criteria for health hazards
  - Classification of environmental hazards

GHS Adoption



Similarity to Other Systems

- Physical hazards similar to transport hazards
- Health hazards similar to current OSHA but with far more detailed criteria
- Environmental hazards similar to European Union (EU) and the International Maritime Dangerous Goods (IMDG) Code

Hazcom 2012 (OSHA)

- Published March 26, 2012
- Conform to the Globally Harmonized System for the classification and labeling of chemicals (GHS) Rev. 3
- Changes to:
  - Definition of hazardous chemical
  - Classification
  - Label content
  - Safety data sheet content (mandatory 16 section SDS, % required)

OSHA HCS 2012 Effective Dates

- The final rule was effective 60 days following publication in the Federal Register (May 25, 2012)
- Employers must train employees of the new labels and SDS format by December 1, 2013
- Manufacturers/Importers/Distributor and Employers must comply by June 1, 2015
- Distributors cannot ship containers without compliant labels after December 1, 2015
- Employers must update hazcom program and provide additional training for new hazards by June 1, 2016

Hazcom 2012

- No changes to:
  - Scope and exemptions
  - Written Hazcom program
  - Labeling requirement
  - MSDS (SDS) distribution and availability in the workplace
  - Employee information and training (other than training on new labels and SDSs by December 1, 2013)
  - Trade secrets (except to include percentage)

Format of the Standard

(a) Purpose

(b) Scope and Application

(c) Definitions

(d) Hazard Classification

(e) Written Hazard Communication Program

(f) Labels and Other Forms of Warning

(g) Safety Data Sheets

(h) Employee Information and Training

(i) Trade Secrets

(j) Effective Dates

Appendix A, Health Hazard Criteria (Mandatory)

Appendix B, Physical Hazard Criteria (Mandatory)

Appendix C, Allocation of Label Elements (Mandatory)

Appendix D, Safety Data Sheets (Mandatory)

Appendix E, Definition of "Trade Secret" (Mandatory)

Appendix F, Guidance for Hazard Classifications re: Carcinogenicity (Non-Mandatory)

Scope and Application (b)

- No change except for reference to Appendix E which is removed
- Still applies to all chemicals known to be present in the workplace in such a manner that employees may be exposed to them under normal conditions of use or in a foreseeable emergency
- All labeling and full exemptions retained
- Laboratory and warehouse coverage remains unchanged (b)(3) and (b)(4)

Labeling exemptions (b)(5)

- Pesticides
- Toxic Substances Control Act (TSCA) regulated chemicals
- Food, food additives, color additives, drugs, cosmetics, medical/veterinary devices, alcoholic beverages
- Consumer products when labeled in accordance with the Consumer Product Safety Commission (CPSC)
- Seeds treated with pesticides if labeled under US Department of Agriculture (USDA)

Full Exemptions (b)(6)

- Hazardous waste
- Hazardous substances at a CERCLA remediation site
- Tobacco
- Wood and wood products which will not be processed and only present a fire hazard
- Articles
- Food and alcoholic beverages sold, used or prepared in retail establishments or intended for personal consumption

Full Exemptions (b)(6)

- Drugs, in solid, final form for direct administration to patient, or packaged for sale, or for consumption by employees
- Cosmetics packaged for sale or for use by employees
- Consumer products if used only in consumer manner
- Nuisance particulates
- Radiation (ionizing and non-ionizing)
- Biological hazards

Definitions (c)

- All physical hazard definitions removed – now in Appendix B
- Definitions for flashpoint, hazard warning, identity, material safety data sheets deleted
- Some definitions are revised to be GHS-consistent: Chemical; chemical name; hazardous chemical; health hazard; label; mixture; physical hazard and trade secret
- New definitions for: Classification; hazard category; hazard class; hazard statement; label elements; pictogram; precautionary statement; product identifier; safety data sheet; signal word; substance; and hazards not otherwise classified, pyrophoric gas, simple asphyxiant

OSHA Defined Hazards

- "Pyrophoric gas" – a chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below
- "Simple asphyxiant" – a substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death
- Combustible dust – no definition but label elements specified

"Hazard Not Otherwise Classified"- (HNOC) New Definition

- An adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in this section
  - This does not extend coverage to adverse physical and health effects for which there is a hazard class addressed in this section, but the effect either falls below the cut-off value/concentration limit of the hazard class
  - Does not extend to others that is under a GHS hazard category that has not been adopted by OSHA (e.g., acute toxicity Category 5)
- Not required on the label

Hazard Classification (d)

- Introduces the concept of classification based on detailed criteria that appears in Appendix A and B
- Mixture rules vary for the different hazard classes – no more 1% rule
- No "floor" of hazardous chemicals as in the current standard

Hazard Classification

- Data on the chemical is compared to criteria in the Hazcom 2012
- All hazard classes must be considered
- Hazard classes have categories that reflect the degree of hazard
- Chemicals can have multiple hazard classes/categories
- Generally, categories = transport packing groups (where covered by transport)

Hazard Criteria, Class and Category

- Appendix A – Health Hazard Criteria
- Appendix B – Physical Hazard Criteria
- Hazard Class – The nature of the physical or health hazard
- Hazard Category – The division of the criteria within each hazard class
  - Categories compare hazard severity within the class

GHS/Hazcom 2012 Physical Hazards

- Explosives
- Flammable gases
- Flammable 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 and mixtures which in contact with water, emit flammable gases
- Oxidizing liquids
- Oxidizing solids
- Organic peroxides
- Corrosive to metals
- Pyrophoric gases (OSHA)
- Combustible Dusts (OSHA)

GHS/Hazcom 2012 Health Hazards

- Acute toxicity
  - Poisons that cause serious, immediate effects via inhalation, ingestion or dermal contact at fairly low doses
- Skin corrosion/irritation
  - (Irreversible/reversible effects)
- Serious eye damage/eye irritation
  - (Irreversible/reversible effects)
- Respiratory or skin sensitization
- Germ cell mutagenicity
  - Cause heritable mutations in germ cells

GHS/Hazcom 2012 Health Hazards

- Carcinogenicity
- Reproductive toxicity
  - Effects on fertility, development of offspring, effects on or via lactation
- Specific target organ toxicity
  - Single and repeated exposure
- Aspiration hazard
  - Low viscosity hydrocarbons that cause lung damage when ingested
- Simple asphyxiants (OSHA)

GHS Environmental Hazards/NOT Hazcom 2012

- Aquatic toxicity
  - Acute aquatic toxicity
  - Chronic aquatic toxicity
- Hazardous to the ozone layer

Criteria for Flammable Liquids

Category	Criteria
1	Flash point < 23°C and initial boiling point ≤ 35°C
2	Flash point < 23°C and initial boiling point > 35°C
3	Flash point ≥ 23°C and ≤ 60°C
4	Flash point > 60°C and ≤ 93°C

Criteria for Acute Toxicity

Acute Toxicity	Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5 (not Hazcom 2012)
Oral (mg/kg)	≤5	>5 - ≤50	>50 - ≤300	>300 - ≤2000	Criteria: ≤5000 • ≤5000 • Anticipated significant effects in human • Any mortality at class 4 • Significant clinical signs at class 4 • Indications from other studies
Dermal (mg/kg)	≤50	>50 - ≤200	>200- ≤1000	>1000- ≤2000	
Gases (ppm)	≤100	>100 - ≤500	>500- ≤2500	>2500- ≤20000	
Vapours (mg/l)	≤0.5	>0.5- ≤2.0	>2 - ≤10	>10 - ≤20	
Dust and mists (mg/l)	≤0.05	>0.05- ≤0.5	>0.5- ≤1.0	>1.0 - ≤5	

Criteria for Carcinogens

- Category 1: Known or presumed human carcinogen
  - Category 1A: Known to have carcinogenic potential for humans, largely based on human evidence
  - Category 1B: Presumed to have carcinogenic potential for humans, largely based on animal evidence
- Category 2: Suspected human carcinogens (based on human or animal evidence but less convincing)
- Hazcom 2012 allows manufacturers/importers to use classification by International Agency for Research on Cancer (IARC), National Toxicology Program (NTP) or OSHA instead of applying criteria
  - Regardless, the positive classifications must be noted on the SDS

Mixture Classification

- Classify based on data for the mixture as a whole
  - Generally all physical hazards
- Follow bridging principles
  - Dilution, batching, concentration, interpolation, substantially similar mixtures, aerosols
- Use additivity formulas
  - Only certain hazard classes
- Cut-off values – Hazard class specific

Mixture Rules Health Hazards

- Acute toxicity
  - Use additivity formula to calculate ATE – then refer to table
- Skin corrosion/irritation
  - Additivity with reference to table
- Serious eye damage/eye irritation
  - Additivity with reference to table
- Respiratory or skin sensitization
  - Cut-off concentrations (not additive generally)
- Germ cell mutagenicity
  - Cut-off concentrations (not additive)

GHS/Hazcom 2012 Health Hazards

- Carcinogenicity
- Cut-off concentrations (not additive)
- Reproductive toxicity
  - Cut-off concentrations (not additive)
- Specific target organ toxicity
  - Single and repeated exposure, cut-off concentrations (not additive generally – Category 3 are additive)
- Aspiration hazard
  - Total 10% hydrocarbons and meet viscosity criteria

Acute Toxicity - Mixture Calculation

$$\frac{100}{ATE_{mix}} = \sum_{n=i} \frac{C_i}{ATE_i}$$

- Where:
  - Ci = concentration of ingredient i
  - ATEi = Acute Toxicity Estimate of ingredient i
  - ATEmix = Acute Toxicity Estimate of mixture
  - n ingredients in the mixture and i runs from 1 to n
- Formula adjusted if >10% unknown toxicity

Skin Corrosion/Irritation – Mixtures Additivity

Sum of ingredients classified as:	Concentration triggering Classification of a mixture as:		
	Skin		
	Corrosive	Irritant	
	Category 1	Category 2	Category 3
Skin Category 1	≥ 5%	≥ 1% but < 5%	
Skin Category 2		≥ 10%	≥ 1% but < 10%
Skin Category 3			≥ 10%
(10 x Skin Category 1) + Skin Category 2		≥ 10%	≥ 1% but < 10%
(10 x Skin Category 1) + Skin Category 2 + Skin Category 3			≥ 10%

Carcinogen / Cut-off values

Mixture classified as a carcinogen when at least one carcinogen has been classified as a Category 1 or 2 carcinogen and is present at or above the cut-off value/concentration limit below

Ingredient Classified as	Category 1 carcinogen	Category 2 carcinogen
Category 1 carcinogen	≥0.1%	
Category 2 carcinogen		≥0.1%

Labeling (f)

- The requirement for labeling unchanged
- Label content changed – based on
  - Hazard classification
  - Refer to Appendix C for the specific requirements

Label Content Shipped Containers

- Product Identifier
  - Ingredients not required but are part of GHS label
- Signal word (danger or warning)
- Hazard statements
- Pictograms
- Precautionary statements
- Name, address and telephone number of the chemical manufacturer, importer or other responsible party
- Unknown acute toxicity statement if applicable
- HNOC information is not required on the label

Product Identifier

- The name or number used for a hazardous chemical on a label or in the SDS – provides a unique means by which user can identify the chemical – permits cross-referencing between the list of hazardous chemicals, label and SDS.

Signal Word

- A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label
  - The signal words used in this section are
    - "Danger" and "Warning"

"Danger" – used for the more severe hazards

"Warning" – used for the less severe

Pictogram

- A 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 about the hazards of a chemical
- Nine pictograms are designated under the GHS
- Eight pictograms are adopted in Hazcom 2012
  - Red border, black symbol, white background
  - Blank red diamonds are not permitted on shipped container labels

Exploding Bomb Pictogram

- Unstable explosives
- Explosives (Divisions 1.1-1.4)
- Self-reactives (Type A and Type B with flame)
- Organic peroxides (Type A and Type B with flame)

Flame Pictogram

- Flammable gases
- Flammable aerosols
- Flammable liquids (Categories 1-3)
- Flammable solids
- Self-reactives (Type B with bomb, Types C-F)
- Pyrophoric liquids and solids (gases Hazcom 2102)
- Self-heating substances
- Substances which in contact with water emit flammable gases
- Organic peroxides (Type B with bomb, Types C-F)

Flame over Circle Pictogram

- Oxidizing gases
- Oxidizing liquids
- Oxidizing solids

Gas Cylinder Pictogram

- Compressed gas
- Liquefied gas
- Refrigerated liquefied gas
- Dissolved gas

Corrosion Pictogram

- Corrosive to metals (steel or aluminum >6.25 mm/year at 55C)
- Skin corrosion/irritation – Category 1 (A, B and C)
- Serious eye damage/irritation – Category 1

Skull and Crossbones Pictogram

- Acute toxicity – Categories 1-3 (oral, inhalation or dermal routes)

Exclamation Mark Pictogram

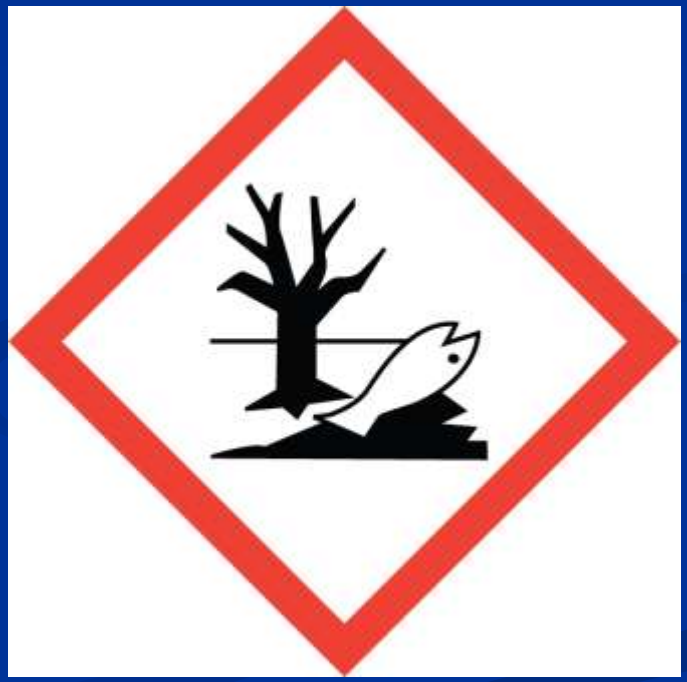
- Acute toxicity – Category 4 (oral, inhalation or dermal routes)
- Skin irritation/corrosion – Category 2
- Serious eye damage/ irritation – Category 2A
- Skin sensitizer
- STOST (single exposure) – Category 3 (respiratory tract irritation, narcotic effects)
- Ozone Depleting (not Hazcom 2012)

Health Hazard Pictogram

- Respiratory sensitizer
- Germ cell mutagenicity
- Carcinogenicity
- Toxic to reproduction
- STOT (single exposure) – Categories 1-2
- STOT (repeated exposure) – Categories 1-2
- Aspiration hazard

Environment Pictogram (NOT Hazcom 2012)

- Acute hazards to the aquatic environment – Category 1 (Categories 2 and 3 no pictogram or signal word)
- Chronic hazards to the aquatic environment – Categories 1 and 2 (Categories 3 and 4 no pictogram or signal word)



Hazard and Precautionary Statements

- Hazard statement for each level of hazard (category) within each hazard class (See Appendix C)
  - Example: Flammable liquids
    - Category 1: Extremely flammable liquid and vapour
    - Category 2: Highly flammable liquid and vapour
    - Category 3: Flammable liquid and vapour
    - Category 4: Combustible liquid
- Precautionary statements are selected from tables in Appendix C, based on the classification

Example 1

- Gas LEL 0.9% UEL 6%

- Classification Flammable Gas Category 1
  - Consider also classification as compressed gas

Example 1

C.4.15 FLAMMABLE GASES
(Classified in Accordance with Appendix B.2)

Hazard category	Signal word	Hazard statement
1	Danger	Extremely flammable gas

Pictogram
Flame

Precautionary statements			
Prevention	**Response**	**Storage**	**Disposal**
Keep away from heat/sparks/open flames/hot surfaces. -No smoking. Chemical manufacturer, importer, or distributor to specify applicable ignition source(s).	**Leaking gas fire: Do not extinguish, unless leak can be stopped safely.** **Eliminate all ignition sources if safe to do so.**	**Store in well-ventilated place.**	

Example 1 Label

FLAMMABLE GAS PRODUCT

DANGER

Extremely flammable gas

Prevention

Keep away from heat, sparks, open flames and hot surfaces. No smoking.

Response

Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Eliminate all ignition sources if safe to do so.

Storage

Store in well-ventilated place.

ABC Chemical Company, 3 Main Street, Hartford, CT 860-123-2222

Example 2

- Liquid
  - LD50 oral rat 200 mg/kg
  - LD50 dermal rabbit 50 mg/kg
  - LC50 (vapor) rat 3 mg/L

Classification

Acute Toxicity Oral Category 3

Acute Toxicity Dermal Category 1

Acute Toxicity Inhalation Category 3

Criteria for Acute Toxicity

Acute Toxicity	Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5 (not Hazcom 2012)
Oral (mg/kg)	≤5	>5 - ≤50	>50 - ≤300	>300 - ≤2000	Criteria: ≤5000 • ≤5000 • Anticipated significant effects in human • Any mortality at class 4 • Significant clinical signs at class 4 • Indications from other studies
Dermal (mg/kg)	≤50	>50 - ≤200	>200- ≤1000	>1000- ≤2000	
Gases (ppm)	≤100	>100 - ≤500	>500- ≤2500	>2500- ≤20000	
Vapours (mg/l)	≤0.5	>0.5- ≤2.0	>2 - ≤10	>10 - ≤20	
Dust and mists (mg/l)	≤0.05	>0.05- ≤0.5	>0.5- ≤1.0	>1.0 - ≤5	

C.4.1 ACUTE TOXICITY – ORAL (CONTINUED)
(Classified in Accordance with Appendix A.1)

Hazard category	Signal word	Hazard statement
3	Danger	Toxic if swallowed

Pictogram

Skull and crossbones

Precautionary statements			
Prevention	**Response**	**Storage**	**Disposal**
Wash … thoroughly after handling. … Chemical manufacturer, importer, or distributor to specify parts of the body to be washed after handling. **Do not eat, drink or smoke when using this product.**	**If swallowed: Immediately call a poison center/doctor/...** … Chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice. **Specific treatment (see ... on this label)** ... Reference to supplemental first aid instruction. - *if immediate administration of antidote is required.* **Rinse mouth.**	**Store locked up.**	**Dispose of contents/container to...** ... in accordance with local/regional/national/international regulations (to be specified).

C.4.2 ACUTE TOXICITY - DERMAL
(Classified in Accordance with Appendix A.1)

Pictogram
Skull and crossbones

Hazard category	Signal word	Hazard statement
1	Danger	Fatal in contact with skin
2	Danger	Fatal in contact with skin

Precautionary statements			
Prevention	**Response**	**Storage**	**Disposal**
Do not get in eyes, on skin, or on clothing. **Wash … thoroughly after handling.** … Chemical manufacturer, importer, or distributor to specify parts of the body to be washed after handling. **Do not eat, drink or smoke when using this product.** **Wear protective gloves/protective clothing.** Chemical manufacturer, importer, or distributor to specify type of equipment.	**If on skin: Wash with plenty of water/...** … Chemical manufacturer, importer, or distributor may specify a cleansing agent if appropriate, or may recommend an alternative agent in exceptional cases if water is clearly inappropriate. **Immediately call a poison center/doctor/…** … Chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice. **Specific treatment (see ... on this label)** ... Reference to supplemental first aid instruction. - *if immediate measures such as specific cleansing agent is advised.* **Take off immediately all contaminated clothing and wash it before reuse.**	**Store locked up.**	**Dispose of contents/container to...** ... in accordance with local/regional/national/international regulations (to be specified).

C.4.3 ACUTE TOXICITY – INHALATION (CONTINUED)
(Classified in Accordance with Appendix A.1)

Hazard category	Signal word	Hazard statement
3	Danger	Toxic if inhaled

Pictogram
Skull and crossbones

Precautionary statements			
Prevention	**Response**	**Storage**	**Disposal**
Avoid breathing dust/fume/gas/mist/ vapors/spray. Chemical manufacturer, importer, or distributor to specify applicable conditions. **Use only outdoors or in a well-ventilated area.**	**If inhaled: Remove person to fresh air and keep comfortable for breathing.** **Call a poison center/doctor/...** ... Chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice. **Specific treatment (see ... on this label)** ... Reference to supplemental first aid instruction. - *if immediate specific measures are required.*	**Store in a well-ventilated place. Keep container tightly closed.** - *if product is volatile so as to generate hazardous atmosphere.* **Store locked up.**	**Dispose of content/container to...** ... in accordance with local/regional/national/international regulations (to be specified).

Example 2 Label

TOXIC LIQUID

DANGER

Fatal in contact with skin. Toxic if swallowed or inhaled.

Prevention

Do not get in eyes, on skin, or on clothing. Avoid breathing vapors. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water. Immediately call a POISON CENTER or doctor. Take off immediately all contaminated clothing and wash it before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor.

Storage

Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents in accordance with local and federal regulations.

ABC Chemical Company, 3 Main Street, Hartford, CT 860-123-2222

Example 3

- Mixture with 2 components
  - 90% Component A
    - Flammable Liquid Category 2
  - 10% Component B
    - IARC Carcinogen Group 1
    - Carcinogen Category 1B
  - Product Flashpoint 20C and BP 100C
- Mixture Classification
  - Flammable Liquid Category 2
  - Carcinogen Category 1B

Criteria for Flammable Liquids

Category	Criteria
1	Flash point < 23°C and initial boiling point ≤ 35°C
2	Flash point < 23°C and initial boiling point > 35°C
3	Flash point ≥ 23°C and ≤ 60°C
4	Flash point > 60°C and ≤ 93°C

Carcinogen / Cut-off values

Mixture classified as a carcinogen when at least one carcinogen has been classified as a Category 1 or 2 carcinogen and is present at or above the cut-off value/concentration limit below

Ingredient Classified as	Category 1 carcinogen	Category 2 carcinogen
Category 1 carcinogen	≥0.1%	
Category 2 carcinogen		≥0.1%

Label Elements Flammable Liquids

Hazard Category	Signal Word	Hazard Statement	Pictogram
1	Danger	Extremely flammable liquid and vapor	
2	Danger	Highly flammable liquid and vapor	
3	Warning	Flammable liquid and vapor	

Prevention	Response	Storage	Disposal
Keep away from heat/ sparks/open flames/ hot surfaces. – No smoking Keep containers tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical/ ventilating / lighting/…./equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/ eye protection/ face protection	If on skin (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use … for extinction.	Store in a well-ventilated place. Keep cool	Dispose of contents/container to… *… in accordance with local/ regional/ national/ international regulations (to be specified)*

Label Elements Carcinogenicity

Hazard Category	**Signal Word**	**Hazard Statement**
1A and 1B	Danger	May cause cancer
2	Warning	Suspected of causing cancer

Pictogram

Prevention	Response	Storage	Disposal
Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required.	If exposed or concerned: Get medical advice/attention	Store locked up	Dispose of contents/container to… *… in accordance with local/ regional/ national/ international regulations (to be specified)*

Example Label 3

2-Methyl Flammaline

Danger
Highly Flammable Liquid and Vapor
May cause cancer

Keep away from heat/, sparks, open flames and hot surfaces. – No smoking
Keep containers tightly closed.
Ground container and receiving equipment.
Use explosion-proof electrical equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves and eye protection.
Use other personal protective equipment as required.
If on skin (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
If exposed or concerned: Get medical advice.
In case of fire: Use water fog, foam or dry chemical for extinction.
Store in a well-ventilated place. Keep cool. Store locked up.
Dispose of contents to hazardous waste in accordance with all local, state and national regulations

ABC Chemical Company, 3 Main Street, Hartford, CT 860-123-2222

Label Content in the Workplace

- Product identifier
- Signal word (danger or warning)
- Hazard statements
- Pictograms
- Precautionary statements

or

- Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical

Workplace Labeling

- Will you continue to use HMIS or NFPA?
- While the hazard category number does not appear on the label, consider:

HAZARD	
Category	Hazard
1	highest
2	high
3	medium
4	low

HMIS/NFPA	
Index	Hazard
1	slight
2	moderate
3	serious
4	severe

Steps in Developing a SDS and Label

1. Classify Product
2. Determine Labeling based on classification
3. Determine what ingredients must be listed

   Health hazards present above the cut-off concentration or below that concentration if they present a health hazard
4. Complete Section 2

   Detail classification (Acute Oral Toxicity Category 3)

   Add labeling (Signal Word, Pictogram(s), hazard statements, precautionary statements
5. Complete rest of SDS consistent with classification and labeling

Information Needed for Classification

- Physical Properties of Product
  - Flashpoint
  - pH
  - Viscosity
- Classification of all Ingredients
- Acute Toxicity Data for all Ingredients (if relevant)

SDS Sections

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 control/ 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

1. Identification

(a) Product identifier used on the label;
(b) Other means of identification;
(c) Recommended use of the chemical and restrictions on use;
(d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party;
(e) Emergency phone number.

2. Hazard(s) Identification

(a) Classification of the chemical
(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s). (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones);
(c) Describe any hazards not otherwise classified that have been identified during the classification process;
(d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration = 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.

3. Composition / Information on Ingredients

For Substances

(a) Chemical name;

(b) Common name and synonyms;

(c) CAS number and other unique identifiers;

(d) Impurities and stabilizing additives which are classified and contribute to the classification of the substance.

For Mixtures

In addition to the information required for substances:

(a) The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards and

(1) are present above their cut-off/concentration limits; or

(2) present a health risk below the cut-off/concentration limits.

(b) The concentration (exact percentage) shall be specified unless a trade secret claim is made, when there is batch variability or SDS covers similar mixture (these can show ranges).

If trade secret is claimed, a statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

73

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.

74

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.

75

6. Accidental Release Measures

(a) Personal precautions, protective equipment, and emergency procedures.

(b) 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) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
(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

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).
(e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

12. Ecological Information

- Non-Mandatory

(a) Ecotoxicity (aquatic and terrestrial, where available);
(b) Persistence and degradability;
(c) Bioaccumulative potential;
(d) Mobility in soil;
(e) Other adverse effects (such as hazardous to the ozone layer).

13. Disposal Considerations

- Non-Mandatory

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

14. Transport Information

- Non-Mandatory

(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 transport or conveyance either within or outside their premises.

15. Regulatory Information

- Non-Mandatory

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

16. Other Information

- The date of preparation of the SDS or the last change to it.

SUBSTANCE: LITHIUM

TRADE NAMES/SYNONYMS: Lithium Metal
CHEMICAL FAMILY: Element
FORMULAS: Li

SECTION 2 HAZARDS IDENTIFICATION

GHS Classification:

Health	Environmental	Physical
Eye Corrosion/Irritation- Category 1 Skin Corrosion/Irritation – Category 1	None	Substances and Mixtures Which, in Contact with Water, Emit Flammable Gases – Category 1

GHS Label

Lithium
DANGER!
H260 In contact with water releases flammable gases, which may ignite spontaneously
H314 Causes severe skin burns and eye damage.

Prevention
P223 Do not allow contact with water
P231+ P232 Handle under inert gas. Protect from Moisture
P260 Do not breathe dusts.
P264 Wash thoroughly after handling
P280 Wear protective gloves/protective clothing/ eye protection/ face protection.

Response
P301+P330+P331 IF SWALLOWED Rinse Mouth Do NOT Induce Vomiting
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Response
P302 IF ON SKIN:
P335+P334 Brush off loose articles from skin. Immerse in cool water/wrap in wet bandage
P302 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician

P370+P378 In case of fire, use extinguishing media on basis of NaCl, pulverized limestone, Class D graphite powder. Never use water.

Storage
P402+P404 Store in a dry place. Store in closed container.
P405 Store locked up

Disposal
P501 Dispose of contents/containers in accordance with local/ regional/ national/ international regulation.

Supplemental Hazard Information: Lithium may explode when in contact with water. Exposure to moist air may result in fire. Lithium can react with water to produce flammable hydrogen gas, which may create a fire and explosion hazard. Spontaneous ignition can occur if Lithium is heated to its melting point. Lithium dusts may ignite spontaneously in moist air. Lithium can react with moisture to produce corrosive compounds. NEVER purge open

87

GHS Classification Sources of Information

- Japan has classified 1500 substances – available in English for download at http://www.safe.nite.go.jp/english/ghs_index.html (not mandatory)
- Korea has classified 2500 substances – only Korean
- REACH/EU CLP – REACH established a mandatory classification and labeling inventory for substances on the market in the EU available at ECHA website.

http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

- REACH registrations contain GHS classifications (not always consistent with OSHA)

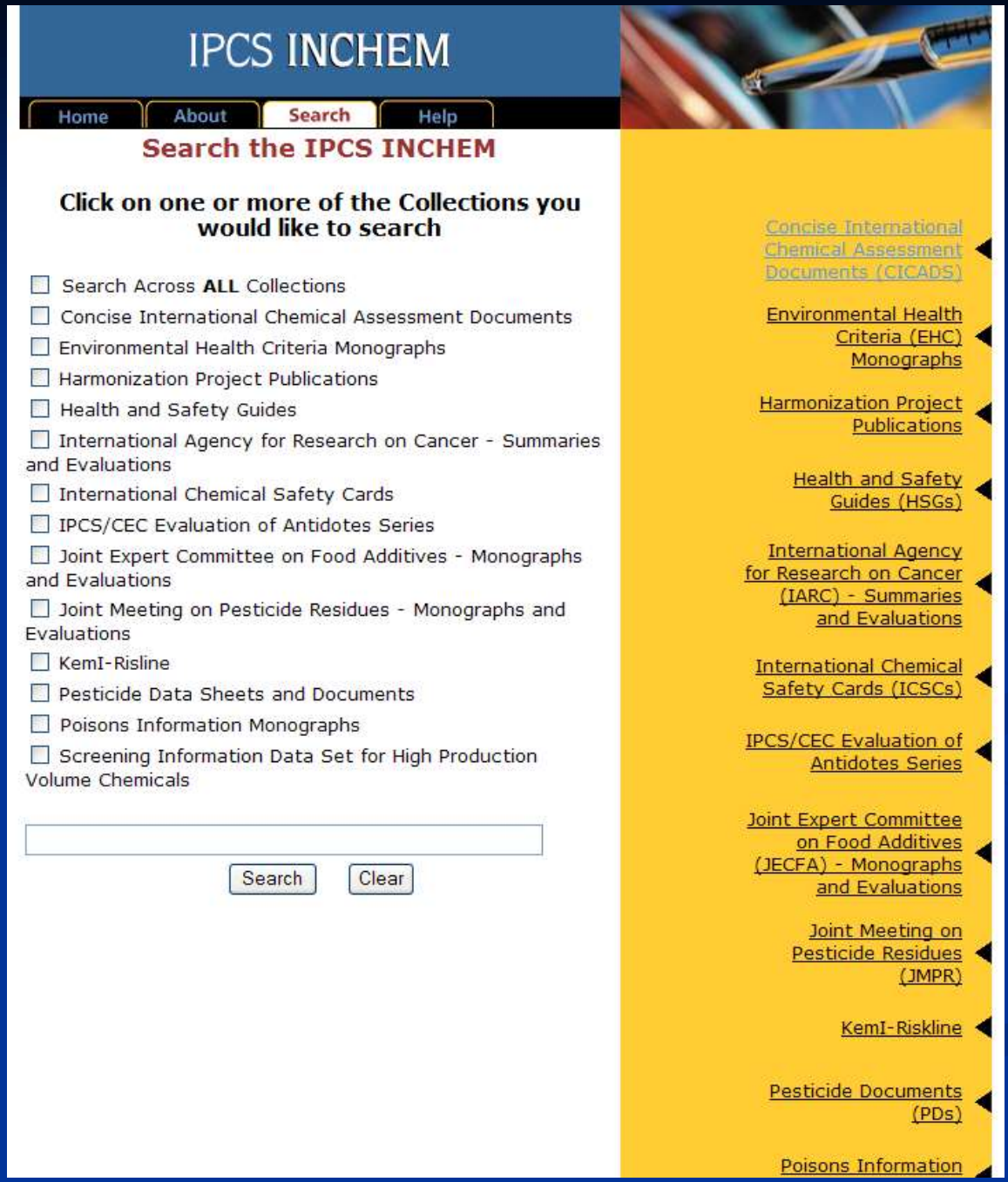
http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances

88

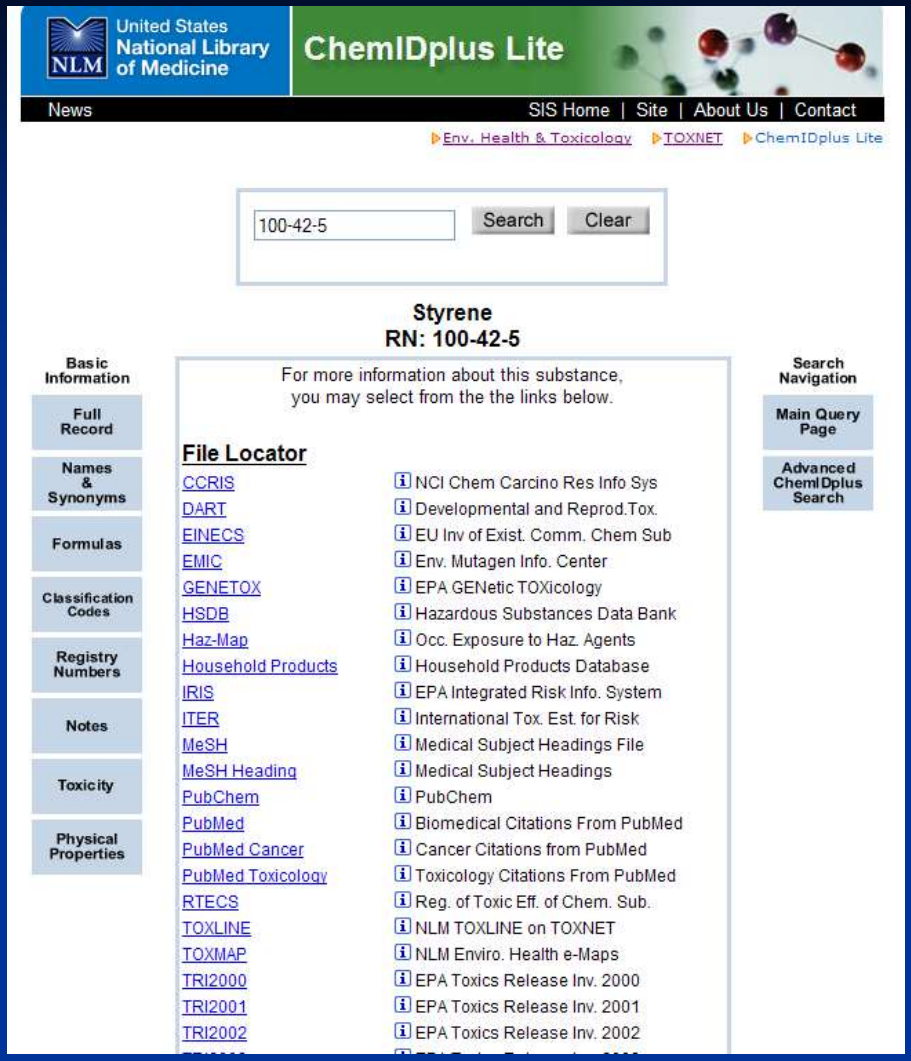
Data Sources

- Supplier MSDS
- EPA IRIS http://www.epa.gov/ncea/iris/search_keyword.htm
- EPA HPVIS http://www.epa.gov/hpvis/index.html
- EPA OPPT Chemical Fact Sheets http://www.epa.gov/chemfact/
- EU ESIS http://esis.jrc.ec.europa.eu/
- IPCS INCHEM http://www.inchem.org/pages/search.html
- NTP Study Reports http://ntp.niehs.nih.gov/
- OECD SIDS http://www.oecd.org/document/63/0,3343,en_2649_34379_1897983_1_1_1_1,00.html
  http://www.chem.unep.ch/irptc/sids/OECDSIDS/sidspub.html
- ATSDR http://www.atsdr.cdc.gov/
- NLM Databases http://toxnet.nlm.nih.gov/index.html
- IARC Monographs http://monographs.iarc.fr/
- REACH Registrations ECHA Website http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances

89


IPCS INCHEM
Home
About
Search
Help
Search the IPCS INCHEM
Click on one or more of the Collections you would like to search
Search Across ALL Collections
Concise International Chemical Assessment Documents
Environmental Health Criteria Monographs
Harmonization Project Publications
Health and Safety Guides
International Agency for Research on Cancer - Summaries and Evaluations
International Chemical Safety Cards
IPCS/CEC Evaluation of Antidotes Series
Joint Expert Committee on Food Additives - Monographs and Evaluations
Joint Meeting on Pesticide Residues - Monographs and Evaluations
KemI-Risline
Pesticide Data Sheets and Documents
Poisons Information Monographs
Screening Information Data Set for High Production Volume Chemicals
Search
Clear
Concise International Chemical Assessment Documents (CICADS)
Environmental Health Criteria (EHC) Monographs
Harmonization Project Publications
Health and Safety Guides (HSGs)
International Agency for Research on Cancer (IARC) - Summaries and Evaluations
International Chemical Safety Cards (ICSCs)
IPCS/CEC Evaluation of Antidotes Series
Joint Expert Committee on Food Additives (JECFA) - Monographs and Evaluations
Joint Meeting on Pesticide Residues (JMPR)
KemI-Riskline
Pesticide Documents (PDs)
Poisons Information

90


United States National Library of Medicine
NLM
ChemIDplus Lite
News
SIS Home | Site | About Us | Contact
Env. Health & Toxicology
TOXNET
ChemIDplus Lite
100-42-5
Search
Clear
Styrene
RN: 100-42-5
Basic Information
Full Record
Names & Synonyms
Formulas
Classification Codes
Registry Numbers
Notes
Toxicity
Physical Properties
For more information about this substance, you may select from the the links below.
File Locator
CCRIS NCI Chem Carcino Res Info Sys
DART Developmental and Reprod.Tox.
EINECS EU Inv of Exist. Comm. Chem Sub
EMIC Env. Mutagen Info. Center
GENETOX EPA GENetic TOXicology
HSDB Hazardous Substances Data Bank
Haz-Map Occ. Exposure to Haz. Agents
Household Products Household Products Database
IRIS EPA Integrated Risk Info. System
ITER International Tox. Est. for Risk
MeSH Medical Subject Headings File
MeSH Heading Medical Subject Headings
PubChem PubChem
PubMed Biomedical Citations From PubMed
PubMed Cancer Cancer Citations from PubMed
PubMed Toxicology Toxicology Citations From PubMed
RTECS Reg. of Toxic Eff. of Chem. Sub.
TOXLINE NLM TOXLINE on TOXNET
TOXMAP NLM Enviro. Health e-Maps
TRI2000 EPA Toxics Release Inv. 2000
TRI2001 EPA Toxics Release Inv. 2001
TRI2002 EPA Toxics Release Inv. 2002
Search Navigation
Main Query Page
Advanced ChemIDplus Search


Internet Locator
ATSDR PHSs ATSDR Public Health Statements
ATSDR Tox Profiles ATSDR Toxicological Profiles
ATSDR ToxFAQs ATSDR ToxFAQS
CAMEO NOAA CAMEO Chemicals
CPDB Carcinogenic Potency Database
CTD Comparative Toxicogenomics Database
EPA Envirofacts EPA Master Chemical Integrator
EPA SRS EPA Substance Registry System
IUCLID EU IUCLID Chemical Data Sheet
NIOSH ICSC NIOSH Intl. Chem. Safety Cards
NIOSH Pocket Guide NIOSH Pocket Guide to Chem Haz
NIST WebBook NIST Chemistry WebBook
NJ-HSFS New Jersey Haz. Sub. Fact Sheets
NTP DBS NTP Database Search
OSHA Chem OSHA Chemical Sampling Info
SRC CHEMFATE Syracuse Res. Corp. CHEMFATE
SRC DATALOG Syracuse Res. Corp. DATALOG
Superlist Locator
CAA1 EPA Toxic Air Pollutants
CGB DOT Coast Guard Bulk Haz. Mat.
CGN DOT Coast Guard Nox. Liquid Sub.
DOT DOT Hazardous Materials
DSL Domestic Sub. List of Canada
HPV EPA High Production Vol. Chem.
IARC Int. Agency for Res. on Cancer
INER EPA Pesticide Inert Ingredients
MA Massachusetts Right-to-know Sub.
MI Michigan Critical Materials Register
MPOL Marine Pollutants List
MTL EPA Master Testing List
NJ New Jersey Right-to-know Sub.
NTPT NTP Technical Reports
PA Pennsylvania Right-to-know Sub.
PAFA FDA Substances added to food
PEL OSHA Toxic and Haz. Sub.
REL NIOSH Rec. Exposure Limits
RQ CERCLA Reportable Quantities
S110 ATSDR Priority List of Haz. Sub.
TLV ACGIH Threshold Limit Values
TRI EPA Toxics Release Inventory
TSCAINV EPA Chem. Sub. Inventory
WHMI Workplace Haz. Mat. Information

91

Details on Substances Classified in Annex VI to Regulation (EC) No 1272/2008

General Information			
Index number	Notes (alphabetic / numeric)		ATP inserted / ATP updated
	Table 3.1	Table 3.2	
601-021-00-3	- / -	- / -	CLP00 / -

Sub	EC No	Cas No	Name
1	203-625-9	108-88-3	toluene

Regulation (EC) No 1272/2008 Annex VI Table 3.1

Classification		Labelling		
Hazard Class and Category Code(s)	Hazard Statement Code(s)	Pictogram Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard statement code(s)
Flam. Liq. 2 Repr. 2 Asp. Tox. 1 STOT RE 2 * Skin Irrit. 2 STOT SE 3	H225 H361d *** H304 H373 ** H315 H336	GHS02 GHS08 GHS07 Dgr	H225 H361d *** H304 H373 ** H315 H336	

Specific Concentration Limits and M Factors	
Concentration	Classification
-	-

Pictogram(s)

Flame Health hazard Exclamation mark

92

U.S. ENVIRONMENTAL PROTECTION AGENCY

High Production Volume Information System (HPVIS)

Share

Contact Us **Search:** ○ All EPA ◉ This Area [ ] Go

You are here: EPA Home » Prevention, Pesticides & Toxic Substances » Pollution Prevention & Toxics High Production Volume Information System » Detailed Chemical Results

Detailed Chemical Results

Chemical Name: Benzene, 1-chloro-4-nitro-
CAS Number: 100-00-5

Click on the endpoint link to see the data on a tab page.

Physical-Chemical SIDS

- Melting Point(1)
- Boiling Point(1)
- Vapor Pressure(1)
- Partition Coefficient(1)
- Water Solubility(2)

Fate SIDS

- Photodegradation(2)
- Stability in Water(1)
- Transport Between Environmental Compartments Fugacity/Dist(1)
- Biodegradation(3)

EcoToxicity SIDS

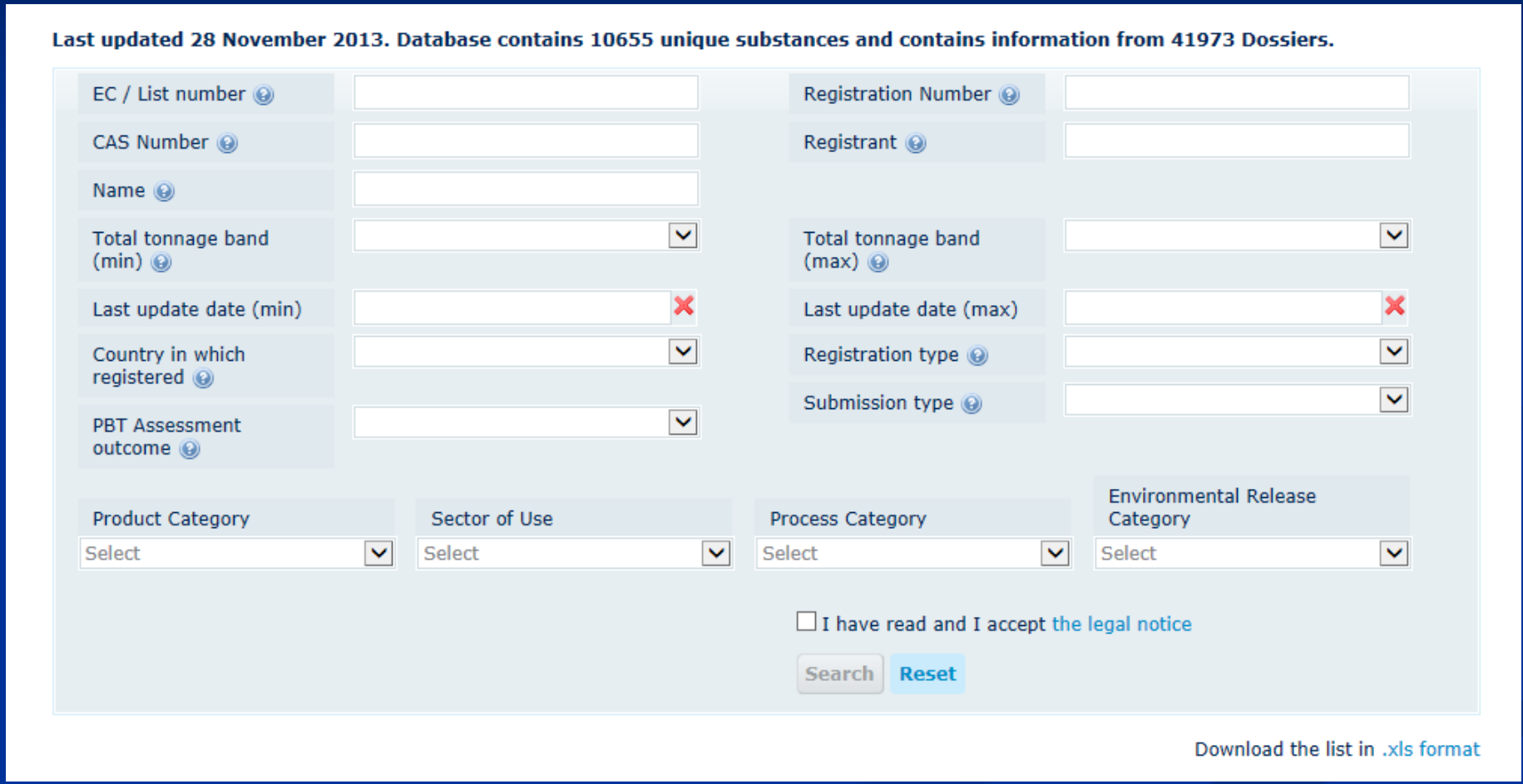
- Acute Toxicity to Aquatic Vertebrates(2)
- Acute Toxicity to Aquatic Invertebrates(2)
- Acute Toxicity to Aquatic Plants(2)

Mammalian Health Effects SIDS

- Acute Toxicity(1)
- Repeated-Dose Toxicity(3)
- Genetic Toxicity in vivo(1)
- Genetic Toxicity in vitro(2)
- Reproductive Toxicity(2)
- Developmental Toxicity/Teratogenicity(2)

93

REACH Registrations



94

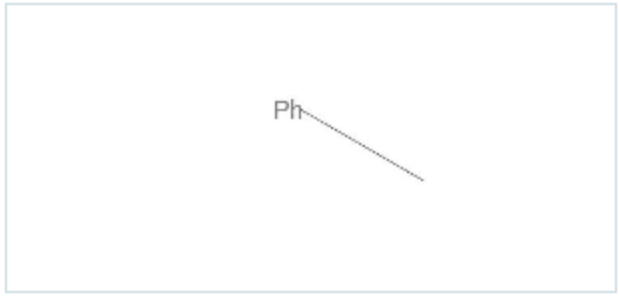
Identification | Registration data | Administrative data | Contact persons

Identification

Substance identification

toluene

EC Number	203-625-9
EC Name	toluene
CAS Number	108-88-3
Molecular formula	C7H8
IUPAC Name	toluene



Type of substance

Composition	mono constituent substance
Origin	organic

Total Tonnage Band

	1,000,000 - 10,000,000 tonnes per annum

Registrants / Suppliers

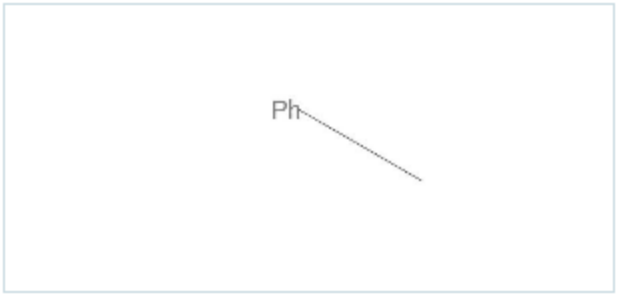
ALBEMARLE EUROPE SPRL Parc Scientifique Einstein Rue du Parquet 9 1348 LOUVAIN-LA-NEUVE Belgium

- Compositions
- Classification and Labelling
  - GHS
    - Toluene
    - toluene
    - Toluene containing 0.13% benzene
    - Toluene - harmonised classification
    - Toluene - self classification
  - DSD - DPD
- Manufacture, Use & Exposure
- PBT assessment
- Physical and chemical properties
- Environmental fate and pathways
- Ecotoxicological Information
- Toxicological information
- Guidance on safe use
- Reference substances

Substance identification

toluene

EC Number	203-625-9
EC Name	toluene
CAS Number	108-88-3
Molecular formula	C7H8
IUPAC Name	toluene



Type of substance

Composition	mono constituent substance
Origin	organic

Composition

Toluene

Constituents

Flammable liquids	Flam. Liquid 2 H225: Highly flammable liquid and vapour.
Flammable solids	conclusive but not sufficient for classification
Self-reactive substances and mixtures	conclusive but not sufficient for classification
Pyrophoric liquids	conclusive but not sufficient for classification
Pyrophoric solids	conclusive but not sufficient for classification
Self-heating substances and mixtures	conclusive but not sufficient for classification
Substances and mixtures which in contact with water emits flammable gases	conclusive but not sufficient for classification
Oxidising liquids	conclusive but not sufficient for classification
Oxidising solids	conclusive but not sufficient for classification
Organic peroxides	conclusive but not sufficient for classification
Corrosive to metals	conclusive but not sufficient for classification

Health hazards

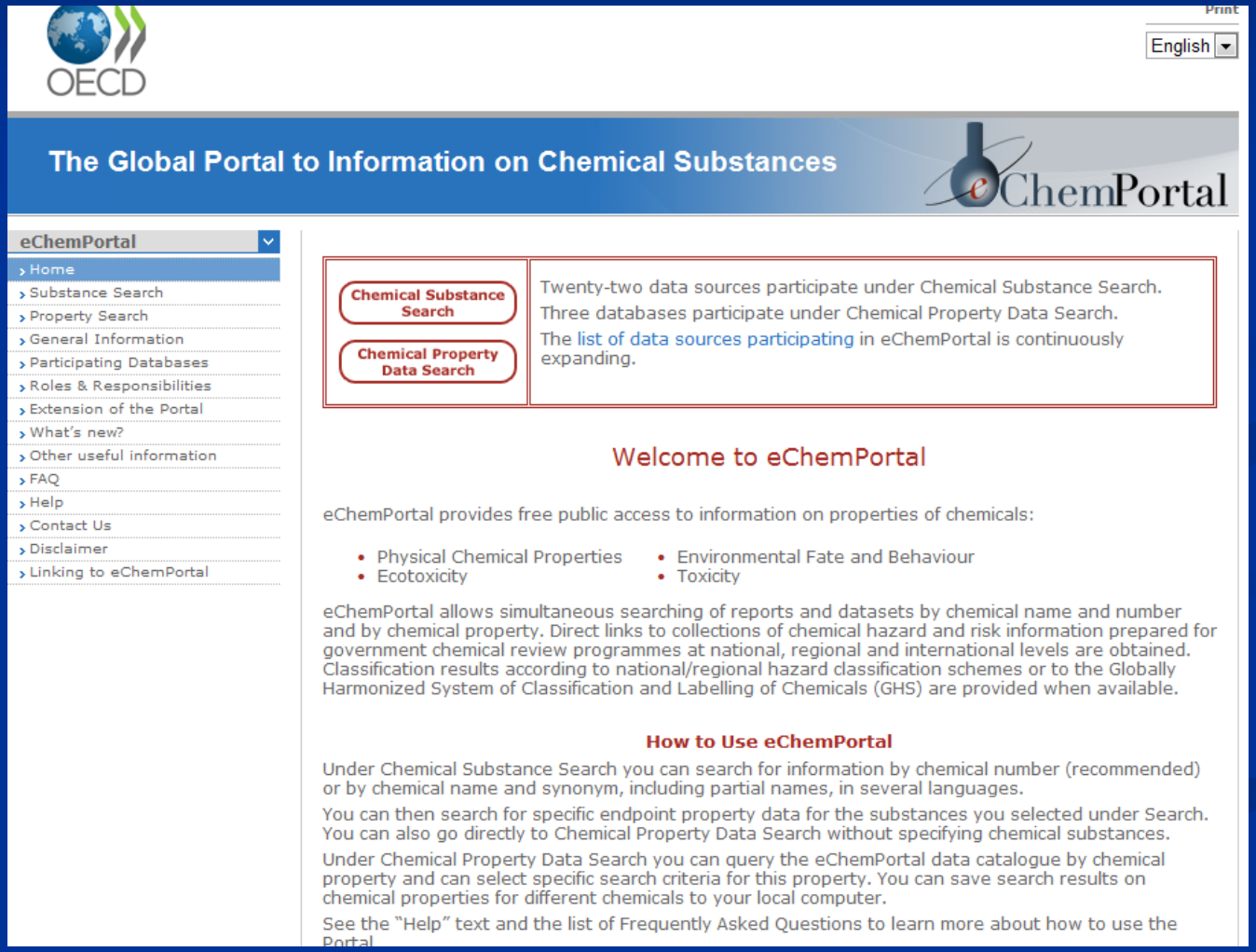
Acute toxicity - oral	conclusive but not sufficient for classification
Acute toxicity - dermal	conclusive but not sufficient for classification
Acute toxicity - inhalation	conclusive but not sufficient for classification
Skin corrosion / irritation	Skin Irrit. 2 H315: Causes skin irritation.
Serious eye damage / eye irritation	Eye Irrit. 2 H319: Causes serious eye irritation.
Respiratory sensitization	conclusive but not sufficient for classification
Skin sensitization	conclusive but not sufficient for classification
Aspiration hazard	Asp. Tox. 1 H304: May be fatal if swallowed and enters airways.

Reproductive toxicity

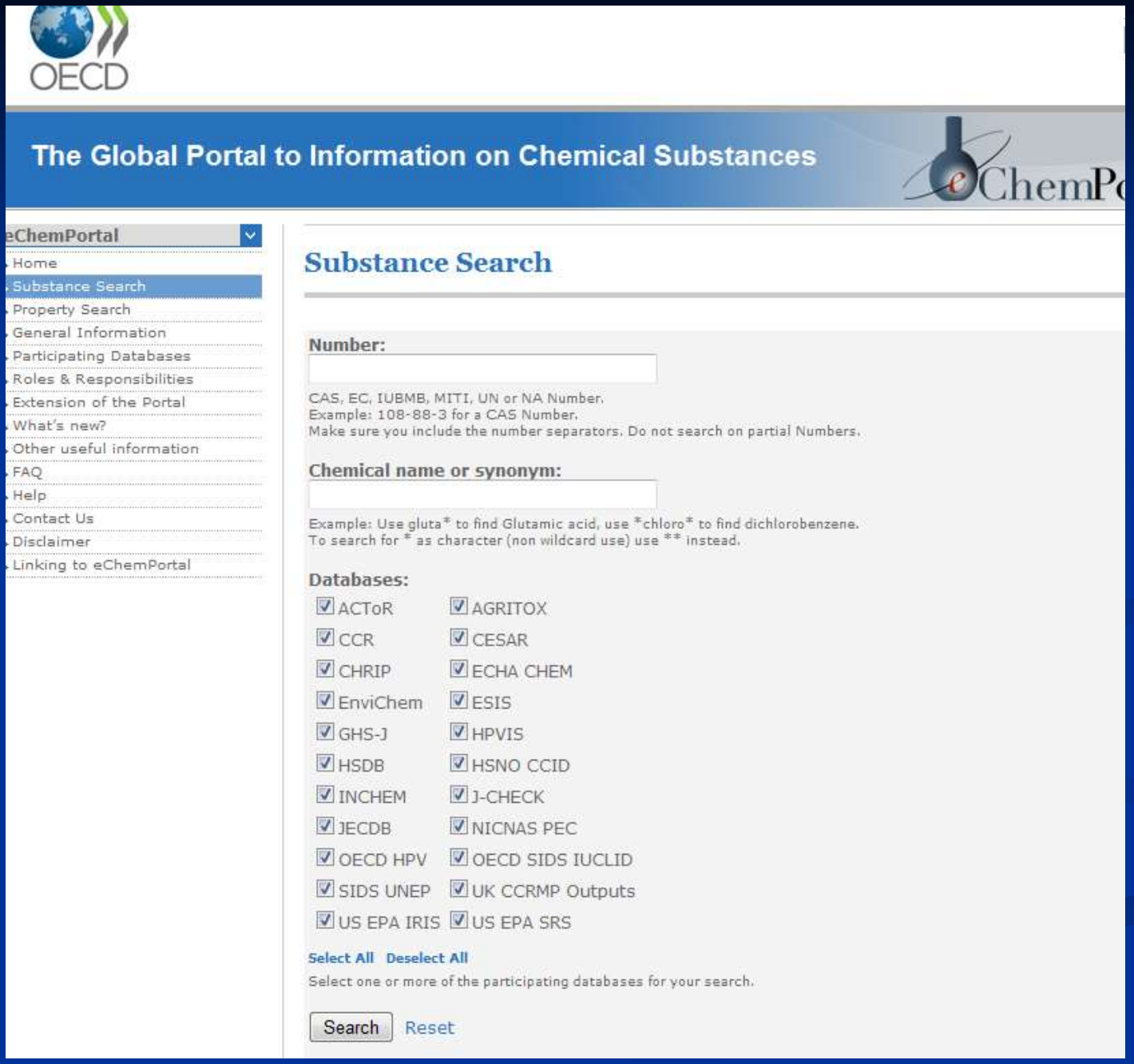
Reproductive toxicity	Repr. 2 H361: Suspected of damaging fertility or the unborn child <state specific effect if known> <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>. Specific effect: Suspected of damaging the unborn child
Effects via lactation	conclusive but not sufficient for classification

eChem Portal

- http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en



98


OECD
The Global Portal to Information on Chemical Substances
eChemPortal
Home
Substance Search
Property Search
General Information
Participating Databases
Roles & Responsibilities
Extension of the Portal
What's new?
Other useful information
FAQ
Help
Contact Us
Disclaimer
Linking to eChemPortal
Substance Search
Number:
CAS, EC, IUBMB, MITI, UN or NA Number.
Example: 108-88-3 for a CAS Number.
Make sure you include the number separators. Do not search on partial Numbers.
Chemical name or synonym:
Example: Use gluta* to find Glutamic acid, use *chloro* to find dichlorobenzene.
To search for * as character (non wildcard use) use ** instead.
Databases:
ACToR
AGRITOX
CCR
CESAR
CHRIP
ECHA CHEM
EnviChem
ESIS
GHS-J
HPVIS
HSDB
HSNO CCID
INCHEM
J-CHECK
JECDB
NICNAS PEC
OECD HPV
OECD SIDS IUCLID
SIDS UNEP
UK CCRMP Outputs
US EPA IRIS
US EPA SRS
Select All
Deselect All
Select one or more of the participating databases for your search.
Search
Reset

99

For More Information

The GHS

http://www.unece.org/trans/danger/publi/ghs/ghs_rev04/04files_e.html

Final HCS Standard (Hazcom 2012)

http://www.osha.gov/dsg/hazcom/ghs-final-rule.html

Side by Side Comparison – Current Standard – New Standard

http://www.osha.gov/dsg/hazcom/side-by-side.html

OSHA GHS Information

http://www.osha.gov/dsg/hazcom/global.html

SCHC OSHA Alliance Webpage

www.schc.org

Information Sheets and Webinar

Current GHS Infomation Sheet Library:
The following sheets were produced by the SCHC-OSHA Alliance GHS Information Sheet Workgroup:

English	Español
Info Sheet #1: Pictograms	Hoja de Información N° 1: Pictogramas
Info Sheet #2: Flammable and Combustible Liquids	Hoja de Información N° 2: Líquidos Inflamables (y Combustibles)
Info Sheet #3: What is the GHS?	Hoja de Información N° 3: ¿Qué es el GHS?
Info Sheet #4: Labeling - OSHA vs. GH	Hoja de Información N° 4: Etiquetado - OSHA versus GHS
Info Sheet #5: Eye Damage / Eye Irritation	Hoja de Información N° 5: Daño ocular/irritación ocular
Info Sheet #6: Germ Cell Mutagenicity	Hoja de Información N° 6: Mutagenicidad en células germinales
Info Sheet #7: Carcinogenicity	

OSHA/SCHC Alliance Webinar Archive Available

Through OSHA's Alliance with the Society for Chemical Hazard Communication (SCHC), an informational presentation on "Hazard Communication – The Revised Standard and What Changes You Can Expect in the Workplace" has been made available to aid companies in understanding the requirements of the new Hazard Communication Standard (HCS 2012). The webinar describes changes to the Hazard Communication Standard to align with the Globally Harmonized System (GHS). Topics included changes expected in training, labeling, and safety data sheets and compliance aides available through SCHC.
The following materials are now available:

Part II Feb. 11, 2014

- Work through several specific ink formulas
  - Classify ingredients
  - Classify Products
  - Develop labeling
  - Prepare SDS
- Homework for next session
  - Download OSHA Standard Appendices A-D
  - https://www.osha.gov/dsg/hazcom/ghs-final-rule.html
  - Review examples (will be sent 1 week ahead)

Thank You

Questions?