

Chemical Hazard Communication

#1 OSHA violation is *Fall protection*

#2 is *Hazard communication*

What to know:

- Most important is the **chemical information** that your employer inserts at the end of this presentation
- Least important is what's on the **bonus** slides

TRAINING

Teach staff about:

- Specific chemical hazards
- Workplace safe practices
- SDSs and labels

Chemical Hazard Communication



Division of Occupational Safety and Health
www.inl.wa.gov/safety 800-423-7233

Washington State Department of
Labor & Industries

DEFINITIONS

- Acute toxicity – effects from short exposure, and effects occur within seconds to days
- Chronic toxicity – effects occur from long-term exposure
- Sensitizers – small quantities can trigger an ALLERGIC REACTION, possibly very serious
- Oxidizers – can release oxygen, or other oxidizing chemicals (so increases the fire risk)
- Safety data sheet – formal document with chemical health and safety information
- **Bonus info** – GHS is the **G**lobally **H**armonized **S**ystem of Classification and Labeling of Chemicals

HAZARD SYMBOLS



Corrosives



Harmful acute toxicity
Irritants



Organ toxicity



Severe acute toxicity



Aquatic toxicity



Explosives
Self-reactives



Flammables



Oxidizers



Gases under pressure

Bonus – SYMBOLS

Corrosion



Skin corrosion
Skin burns
Eye damage
Corrosive to metals

Exclamation
Mark



Acute toxicity (harmful)
Narcotic effects
Irritant (skin and eye)
Respiratory tract irritant
Skin sensitizer
Hazardous to ozone layer

Health
Hazard



Target organ toxicity
Carcinogen
Reproductive toxicity
Mutagenicity
Respiratory sensitizer
Aspiration toxicity

Skull and
Crossbones



Acute toxicity (severe)

Environment



Aquatic toxicity

Exploding
Bomb



Explosives
Self-reactives
Organic peroxides

Flame



Flammables
Self-reactives
Organic peroxides
Pyrophorics
Self-heating

Flame Over
Circle



Oxidizers

Gas Cylinder



Gases under pressure
Liquefied gas
Refrigerated liquefied gas
Dissolved gas

Emits flammable gas upon contact with water

TWO NEW SYMBOLS

Most of the symbols are 'old news'. These are new:



Harmful acute toxicity – toxic effects appear quickly
Narcotic effects – like drinking too much alcohol
Irritant – for skin, eyes, respiratory system
***For other health effects, refer to previous slide



Organ toxicity – many possibilities: brain, lungs, liver, etc.
Carcinogen – known or suspect cancer-causing agent
Respiratory sensitizer – severe reaction can be fatal
***For additional effects, refer to previous slide

SAFETY DATA SHEET INFORMATION

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225

H319

H336

Highly flammable liquid and vapour.

Causes serious eye irritation.

May cause drowsiness or dizziness.

Precautionary statement(s)

P210

P233

P240

P241

P242

P243

P261

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container 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.

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Sigma-Aldrich - 320110

Page 1 of 9

Section 2 has: hazard symbols, hazard statements, and precautionary statements

SIGMA-ALDRICH

SAFETY DATA SHEET

Version 4
Revision Date 02/13/201
Print Date 02/16/201

1. PRODUCT AND COMPANY IDENTIFICATION

- 1.1 Product identifiers
Product name : Acetone
- Product Number : 320110
Brand : Sigma-Aldrich
Index-No. : 606-001-00-8
REACH No. : 01-2119471330-49-XXXX
CAS-No. : 67-64-1
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Manufacture of substances
- 1.3 Details of the supplier of the safety data sheet
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
- 1.4 Emergency telephone number
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
For the full text of the H-Statements mentioned in this Section, see Section 16.
- 2.2 GHS Label elements, including precautionary statements
Pictogram
- Signal word : Danger
- Hazard statement(s)
H225 : Highly flammable liquid and vapour.
H319 : Causes serious eye irritation.
H336 : May cause drowsiness or dizziness.
- Precautionary statement(s)
P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 : Keep container tightly closed.
P240 : Ground/bond container and receiving equipment.
P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 : Use only non-sparking tools.
P243 : Take precautionary measures against static discharge.
P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Sigma-Aldrich - 320110

Page 1 of 9

SDS INFORMATION

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Sigma-Aldrich - 320110

Page 4 of 9

Section 8 has:

- exposure controls
- personal protective equipment

Body Protection

impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose cartridges (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN

Bonus – ALL SIXTEEN SECTIONS

- 1) Product ID
- 2) Hazard identification
- 3) Composition/ingredients
- 4) First-aid
- 5) Firefighting
- 6) Accidental release
- 7) Handling and storage
- 8) Exposure controls and PPE
- 9) Physical and chemical properties
- 10) Stability and reactivity
- 11) Toxicological info
- 12) Ecological info
- 13) Disposal
- 14) Transport
- 15) Regulatory info
- 16) Other information

Sections 2, 4, 6, 7 and 8 are important

One should know sections 2 and 8 well

(Neither DOSH nor OSHA require sections 12 through 15)

Container labels

Workplace labels are used for secondary containers holding chemicals transferred from another container

Product Identifier

Hazard Statements

Hazard Symbols

ACETONE
Danger

Highly flammable liquid and vapor
May cause drowsiness or dizziness
Causes serious eye irritation



Signal Word –
overall hazard level

Yes

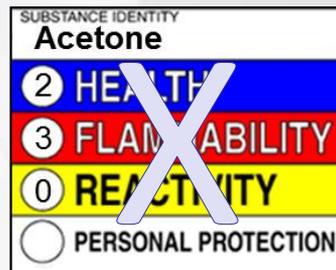
Container labels

Alternative labeling is allowed, but ensuring the **old way** conforms to the **new rule** can be tricky – check with DOSH.

No



Probably Not



Maybe



Bonus – SHIPPING LABEL

Product identifier

Hazard statements

Hazard symbols

Signal word –
overall hazard
level

ACETONE

Danger

Highly flammable liquid and vapor
May cause drowsiness or dizziness
Causes serious eye irritation



Keep away from heat, sparks, open flames and hot surfaces –
No smoking.
Ground or bond container and receiving equipment.
Use explosion-proof electrical, ventilating and lighting
equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Use only outdoors or in a well-ventilated area.
Avoid breathing vapors.
Wash skin thoroughly after handling.
Store in a well-ventilated place. Keep container tightly closed.
Keep cool.

Wear protective gloves and eye protection.
IF INHALED: Remove victim to fresh air 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 eye irritation persists: Get medical advice or attention.
In case of fire: Use dry sand, dry chemical or alcohol resistant
foam for extinction.
Dispose of contents and container in an approved waste disposal
plant.

Solvent Suppliers, Inc.

123 Main Street, AnyTown WA 98204

Telephone: (360) 448-4928

Precautionary statements –
various recommendations

Chemical manufacturer,
importer, or other responsible
party



***The next part covers
the chemical hazards
at our workplace***

Chemicals at Pregnancy Resource Clinic

Some paperwork is required:

- The HazCom policy is **in the HUB**.
- The SDS notebook is located **in the HUB**.
- DOSH requires us to have a list of chemicals; it is in the SDS notebook.
- **The Nurse Manager** maintains the SDS notebook, so you have to let **her** know if you purchase or bring in a chemical product.

The easy way to learn!

- The most hazardous chemicals we have are the corrosives.
- Instead of reading all the safety data sheets, we simplify it by looking at four groups of chemicals. The idea is to learn the hazards and precautions for each group.

Group One



Most of the cleaners and sanitizers are irritants:

These can cause skin irritation and the strongest can give serious eye irritation. Gloves and safety glasses are adequate protection. First aid for skin contact is washing off with soap and water. For eye contact, thoroughly rinse with water.

Some of the household cleaners are corrosive and will need more protective eyewear.

Group Two



The corrosive products:

The ones with the corrosive hazard symbol on the label or SDS. This includes: Cascade Action Dishwasher Pac, OxiClean Stain Remover, Clorox Regular Bleach, Lysol Toilet Bowl Cleaner, Liquid Plumber, and SpaGuard Ph Degreaser.

Goggles are required for eye protection in case a splash occurs from handling the liquid. If a splash occurs, a full-sized fifteen-minute eyewash is needed. These precautions are not needed for a sealed product like the dishwasher pacs.

To protect your hands, use the **nitrile** gloves (the blue gloves in the box marked “nitrile” located in the lab).

Group Three



Products containing alcohol or other petroleum distillates are:

Flammable. Examples are the purple PDI Germicidal Wipes, Metrex CaviCide, Germ-X Hand Sanitizer, Purell Instant Hand Sanitizer, and WD 40. The main health effect is central nervous system depression – lightheadedness, impaired thinking, possible loss of consciousness – like drinking too much alcohol.

Good ventilation will reduce your exposures.

The first aid measure is to remove to fresh air.

Group Four

Many of our miscellaneous products are non-toxic.

The lotions, air fresheners, ACE Ice Melter, Black Flag Ant and Roach Killer, toner cartridges, and a couple of cleaners (Comet Deodorizing Cleanser and Mop and Glo Floor Cleaner) are classified as non-toxic.

Still, there could be some degree of skin, eye, or respiratory irritation. The standard first aid measures of rinsing and removal to fresh air can be used.

For more specific information

You can always check the individual SDS:

The four groups of **irritants, corrosives, petroleum distillates,** and **non-toxics** are just broad categories. The SDS can provide more specific information on the hazards and precautions for each product.