

What's wrong with these label and chemical storage ?



What are the next steps after a chemical was purchased?

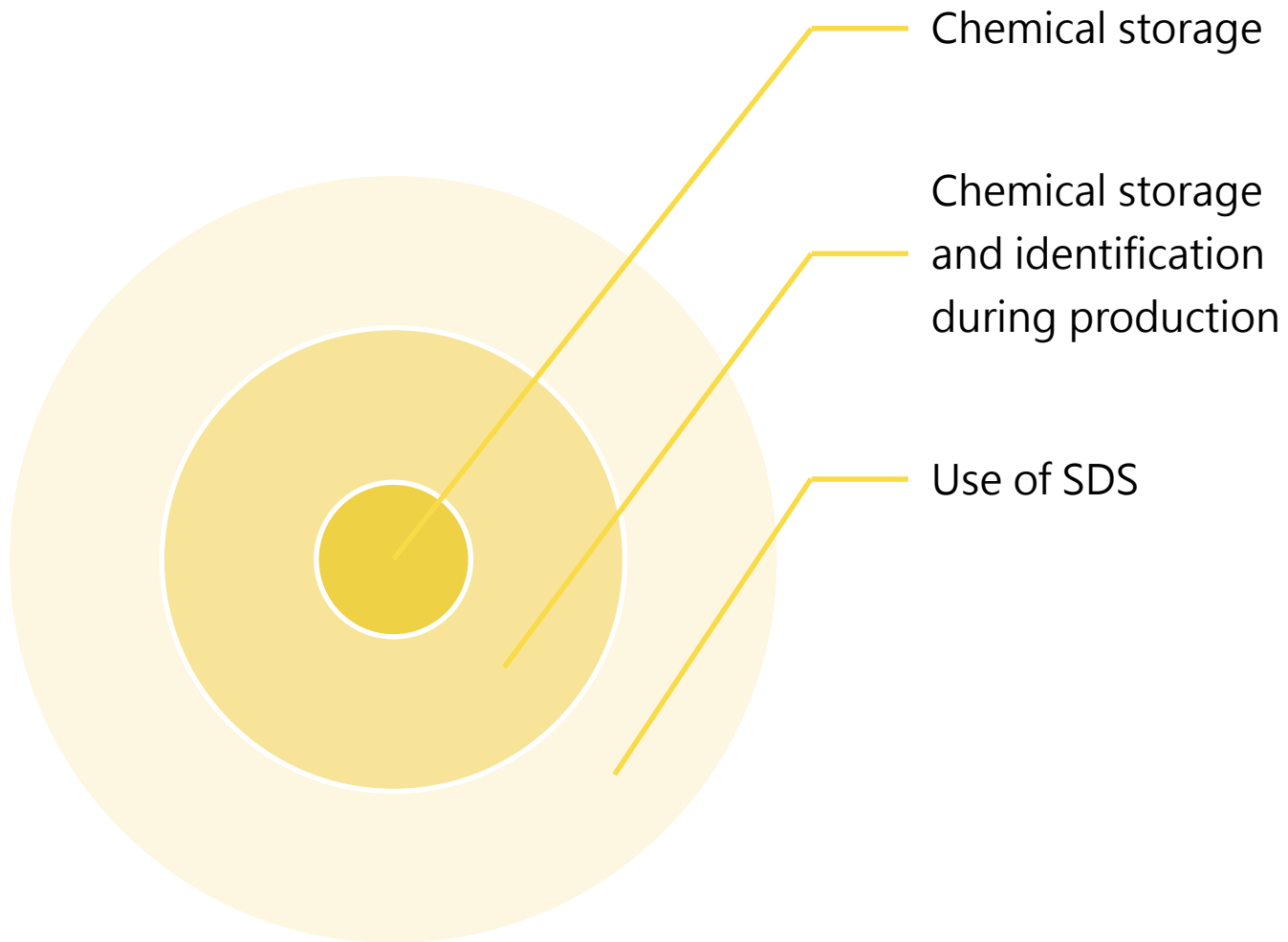
1. During purchase, request chemical supplier to provide SDS

2. During purchase, request chemical supplier to provide MRSL/RSL testing report or declaration letter

3. When chemical arrived factory, factory shall inspect the labelling and hazardous identification. The hazardous identification shall comply with SDS.

4. Factory shall contact chemical supplier if there is any non-compliance or unclear labelling. Those chemical shall be stored in temporary area before confirmed by chemical supplier.

5. Store in warehouse according to the requirements.





IDENTIFICATION AND LABELLING OF CHEMICALS

November 2017



LEARNING OUTCOMES & RESOURCES

Learning Outcomes



- Ability to identify chemicals.
- Overview of Tools And Resources for Chemical Information Profiles.
- Knowledge to interpret Safety Data Sheets.
- Ability to apply the requirements from the Globally Harmonised System.

Resources



- REMC Company Handbook.
- ZDHC Chemical Management Systems Guidance Manual.
- www.unec.org
- www.osha.gov

Workbook



Refer to complimentary excercises in your workbook.





ZDHC REQUIREMENTS

ZDHC CMS 2.1.4 - Creating a comprehensive chemicals list

Identify all chemicals in the facility. Identify chemicals by name, hazard class, container size, locations of containers, dates on which solutions were prepared or expire and if applicable identify chemicals of concern.

ZDHC CMS 2.1.4.3 Chemicals as discharge

Inventory of chemical discharged, identify hazard class.

ZDHC CMS 2.4.3 - Health and safety

Establish, document and implement a process for identifying and controlling the potential health and safety impact from chemicals stored, used and discarded at your site. The chemical inventory previously developed (Section 2.1.4) should be supplemented with this information.

ZDHC CMS 3.5.2 – Safety Data Sheet Management

Procedure to make SDSs readily available for every chemical.





What problems can occur if you cannot identify all chemicals in Your Facility?




Brainstorm as a group and take notes in your workbook, exercise (5-1).

Identifying Chemicals



IDENTIFYING YOUR CHEMICALS

- Read labels and markings on chemical containers thoroughly.
- Review the **Safety Data Sheet** (be careful you have the correct sheet to hand – some chemicals exist in different forms. e.g. solution and powder).
- Cross-check if there is an **eco label** including respective information on the Safety Data Sheet.

SAFETY DATA SHEET		according to Regulation (EC) No. 1907/2006			
SARABID MIP					
Version 2.0		Revision Date 04.01.2013		Print Date 05.01.2013	
1. Identification of the substance/mixture and of the company/undertaking					
1.1 Product identifier					
Trade name	:	SARABID MIP			
1.2 Relevant identified uses of the substance or mixture and uses advised against					
Use of the Sub-stance/Mixture	:	Textile auxiliary			
1.3 Details of the supplier of the safety data sheet					
Manufacturer/Supplier					
CHT R. BEITLICH GMBH Bismarckstraße 102 72072 Tübingen Germany Tel.: +49(0)70 71 15 40 info@cht.com		BEZEMA AG Kriessenstrasse 20 9462 Montlingen Switzerland Tel.: +41(0)71 763 88 11 bezema@bezema.com			
Importer	:	-			
Responsible Department : CHT R. BEITLICH GMBH BEZEMA AG Product Safety msds@cht.com product.safety@bezema.com					
1.4 Emergency telephone number					
Emergency telephone number	:	+49(0)70 71 15 40 (Germany, 24 hours) +41(0)71 763 88 11 (Switzerland, 24 hours)			



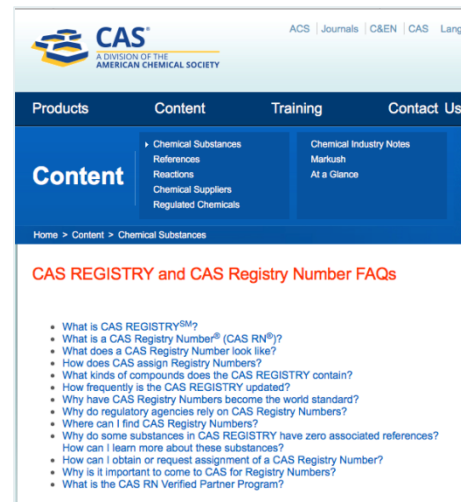
What is a CAS number?



CAS NUMBERS

CAS number: Unique numerical identifier assigned by Chemical Abstracts Service (CAS).

www.cas.org



Example

**Reactive Black 5 dye –
CAS 17095-24-8**


CAS numbers are formatted as three numbers separated by hyphens [nnnnn-nn-n].

In tables of data they are sometimes listed in square brackets without any other.

Product Specification

Product Name:
Reactive Black 5 – Dye content ≥50 %

Product Number: **306452**
CAS Number: 17095-24-8
MDL: MFCD00013464
Formula: C₂₆H₂₁N₅Na₄O₁₉S₆
Formula Weight: 991.82 g/mol



TEST	Specification
Appearance (Form)	Powder
Infrared Spectrum	Conforms to Structure
Carbon	15.7 - 47.2 %
Nitrogen	3.5 - 10.6 %
Wavelength	207 - 219 nm

Product Number: 306452
CAS Number: **17095-24-8**
MDL: MFCD00013464
Formula: C₂₆H₂₁N₅Na₄O₁₉S₆
Formula Weight: 991.82 g/mol



EC NUMBERS

EC Number: A number created by the European Inventory of Existing Commercial Substances (EINECS).

It will be in form of XXX-XX-X where X = is a digit.

Example

Reactive Black 5 dye:
EC-No. 241-165-5

Substances	
Synonyms	: Remazol Black B
Formula	: $C_{26}H_{21}N_5Na_4O_{19}S_6$
Molecular weight	: 991,82 g/mol
CAS-No.	: 17095-24-8
EC-No.	: 241-164-5

Note

While EC numbers are unique to each chemical, their limited scope (100,000 out of 53,000,000+ known chemicals) makes them less useful than CAS numbers.

Globally Harmonised System



What is UN's Globally Harmonised System?

GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)



- Created by the United Nations in 1992.
- Common language for chemical identification.
- Aims at international harmonisation of classification and labelling.
- Replacement of national labelling standards.
- Consistent, global criteria.
- Used to reduce the risks to both human and animal health and the environment.





What do these GHS compliant labels mean?





GHS LABELS

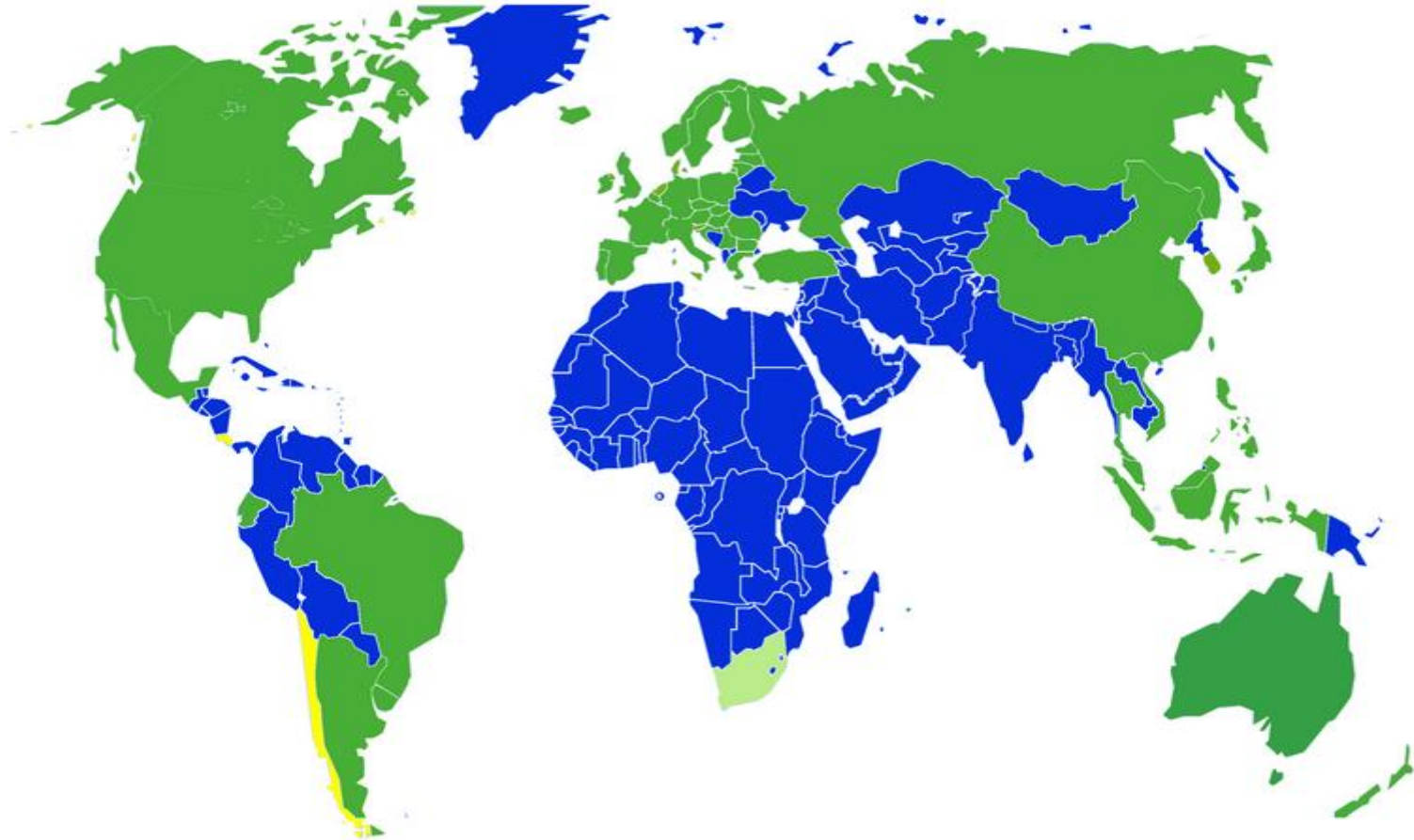
Environmental hazard		Gases under pressure	
Severe health hazards		Explosive	
Oxidising		Health hazards	
Corrosive		Flammable	
Acute toxicity			



GHS IMPLEMENTATION GLOBALLY

GHS implementation - world map. Click on the map to view detailed information.

- : Countries/regions that have already implemented GHS.
- : Countries/regions where GHS is voluntary.
- : Countries/regions that are in the process of implementing GHS.
- : Countries/regions where GHS is not implemented or not available.



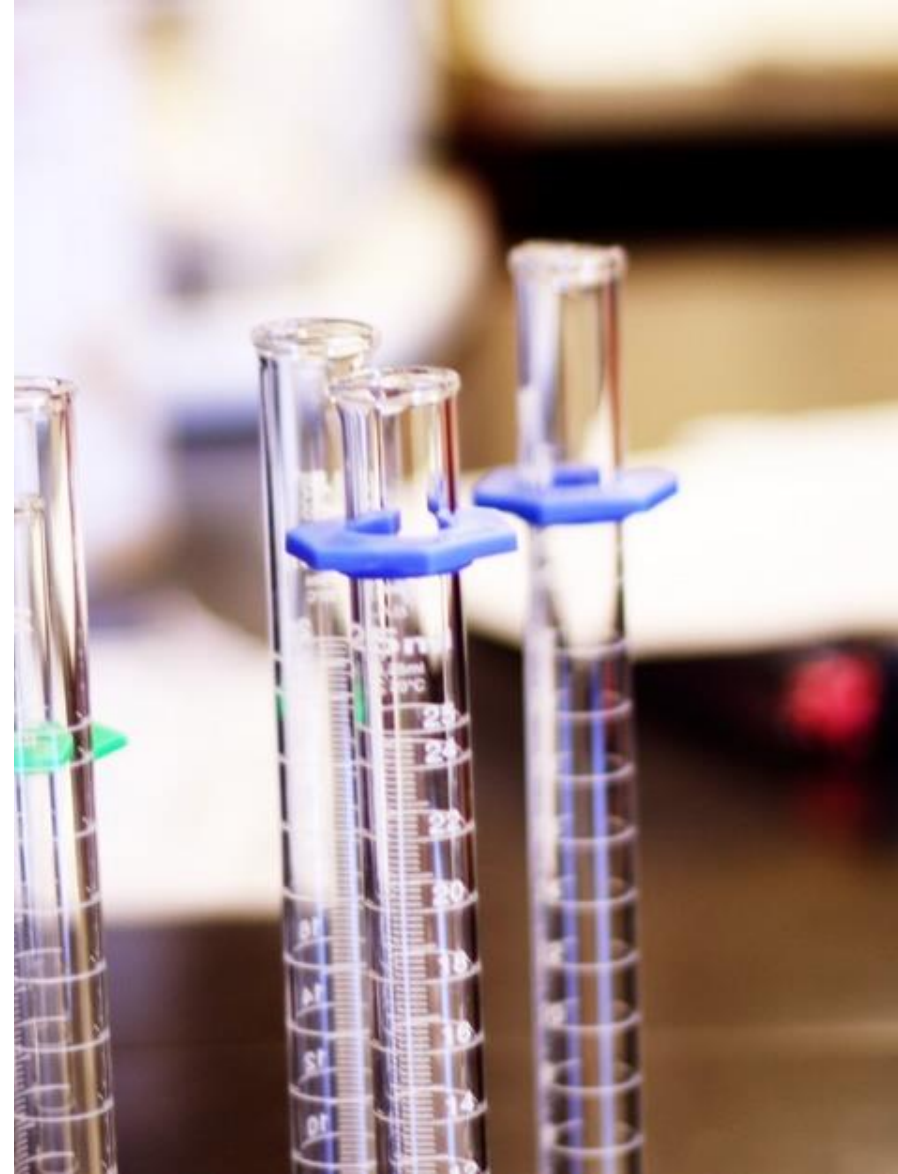
Updated: 26-05-2017



GHS IN THE EU

In EU the following regulations are relevant:

- For supply and use sectors:
Regulation **(EC) No 1272/2008** of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing **Directives 67/548/EEC and 1999/45/EC**, and amending **Regulation (EC) No 1907/2006 REACH Regulation (EC) 1907/2006 (Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals)**.
- For inland transport of dangerous goods: within or between EU Member States: **Directive 2008/68/EC**.





GHS IN CHINA

China implemented the GHS and it is enforced by: Ministry of Industry and Information Technology.

In China the following regulations are relevant:

- **GB 190-2009 (packaging):** implements the 15th revised edition of the UN recommendations on the Transport of Dangerous Goods.
- **GB T 16483-2008:** Safety Data Sheet for chemical products content and order of sections (applicable from 1 February 2009).
- **GB/T 17519-2013:** Guidance on the compilation of Safety Data Sheet.
- **GB 15258-2009:** General rules for preparation of precautionary labels for chemicals (applicable from 1 May 2010).
- **GB 13690-2009:** General rule for classification and hazard communication of chemicals (applicable from 1 May 2010).
- **GB 30000-2013:** (full implementation).





GHS STATEMENTS

GHS Hazard (H) Statements:

H-statements replace earlier risk (r) phrases for hazard description and abbreviations:

Physical Hazard (P)

- Hazard Statements H200-H290.
- **Health Hazard (P).**
 - Hazard Statements H300-H373.
- **Environmental Hazard (P).**
 - Hazard Statements H400-H413.

GHS Precautionary (P) Statement:

P-statements replacing earlier safety (s) phrases for precautionary and control measures:

- **P1xx** stands for **General Measures.**
- **P2xx** stands for **Preventive Measures.**
- **P3xx** stands for **Response Measures.**
- **P4xx** stands for **Storage Related Measures.**
- **P5xx** stands for **Disposal Measures.**



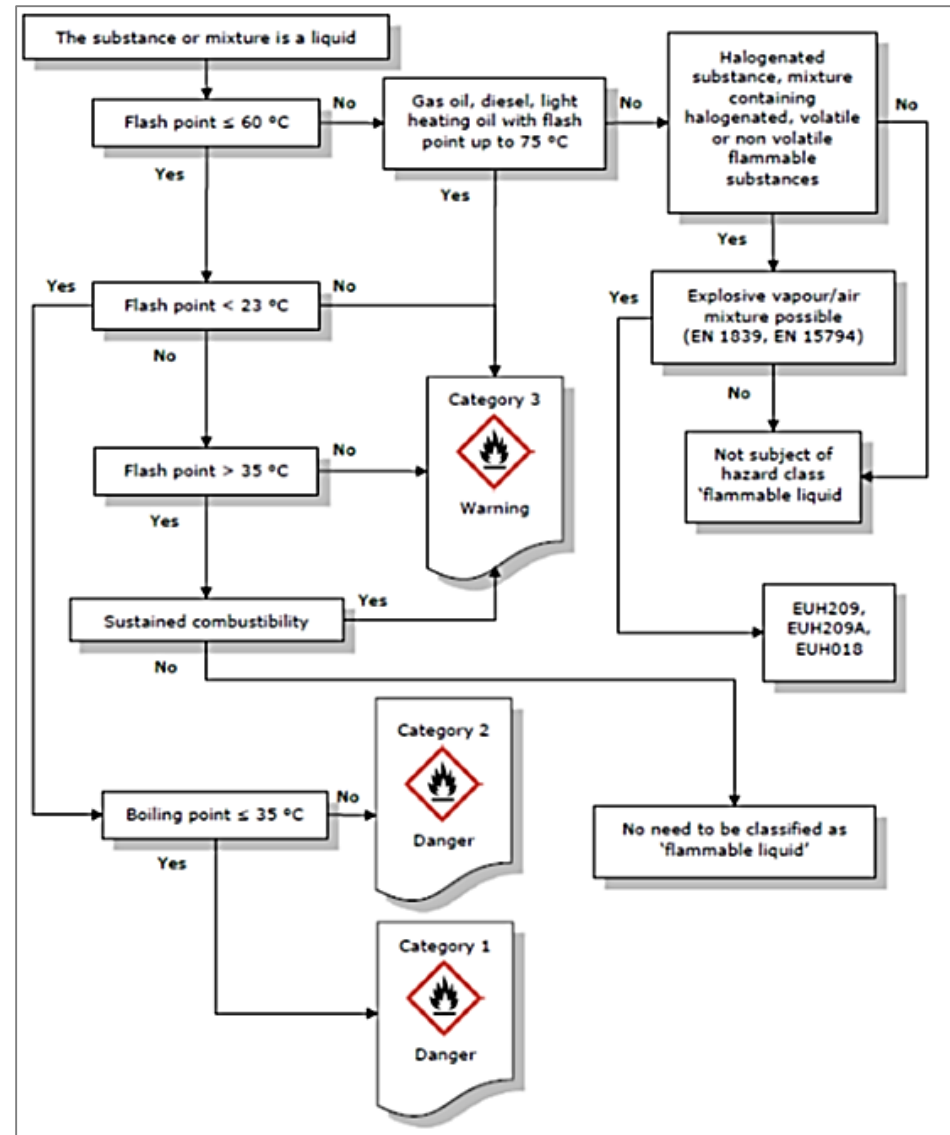
GHS CLASSIFICATION: EXAMPLE

Physical Hazard:

- **Hazard class 6:** Flammable liquids.
- **Category 6.3:** Flammable liquid and vapour.

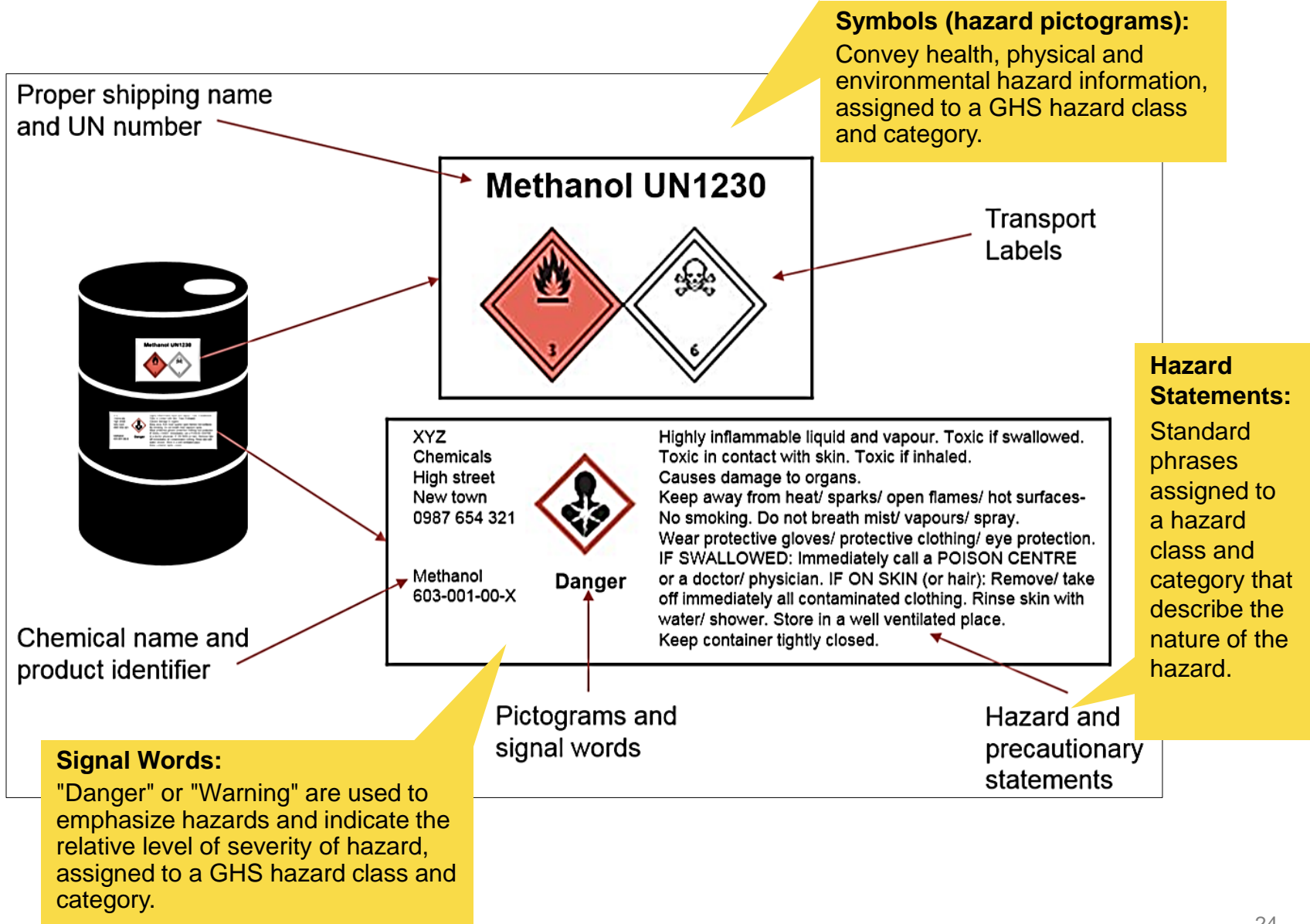
Criteria:

- Flashpoint > 23°C and < 60°C.





ELEMENTS OF A GHS STANDARDISED LABEL





THE BASIC PARTS OF A GHS-COMPLIANT LABEL

1 → **n-Propyl Alcohol**

UN No. 1274
CAS No. 71-23-8

2 → **DANGER**

3 → Highly flammable liquid and vapor. Causes serious eye damage. May cause drowsiness and dizziness.

4 → Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.

Fill Weight: 18.65 lbs. Lot Number: B56754434
Gross Weight: 20 lbs. Fill Date: 6/21/2013
Expiration Date: 6/21/2020

5 → Acme Chemical Company • 711 Roadrunner St. • Chicago, IL 60601 USA • www.acmechem.com • 123-444-5567

See SDS for further information.

6 →

1. **Product Identifier:** Should match the product identifier on the Safety Data Sheet.
2. **Signal Word:** Either use “Danger” (severe) or “Warning” (less severe).
3. **Hazard Statements:** A phrase assigned to a hazard class that describes the nature of the product’s hazard.
4. **Precautionary Statement:** Describes recommended measures to minimise or prevent adverse effects resulting from exposure.
5. **Supplier Identification:** The name, address and telephone number of the manufacturer or supplier.
6. **Pictograms:** Graphical symbols intended to convey specific hazard information visually.

Safety Data Sheets



What is the purpose of a Safety Data Sheet (SDS)?



PURPOSE AND USE OF SAFETY DATA SHEETS

- **Guidance document** for chemical safety management.
- Technical guide for **emergency response**.
- Provides technical information for chemical **Standard Operating Procedures**.
- Basis of **chemical registration** and **management**.
- An important piece of **safety education**.

Used by:

- Any employee potentially exposed to workplace chemicals.
- Safety committees.
- Department managers.
- First line supervisors.
- Accident investigation team members.





SAFETY DATA SHEETS

A **Safety Data Sheet (SDS)** must be:

- Prepared in the **local/ national language**.
- Provided **for each chemical substance/ mixture**.
- **Filed** at the production site.
- **Available in the production** for each chemical input to provide information about safe handling of the chemical input.
- Prepared according to **one of the accepted norms** by a competent person or a competent service provider, such as:
 - ANSI Z400.1-2004 - used in USA.
 - ISO 11014-1 - few countries follow this system.
 - 1907/2006 EEC (REACH) - most countries are now revising their SDS according to this system.
 - 2001/54/EC 2001/58/EEC - used in EU countries from 2001.
 - GHS (Global Harmonized System) - every country has a specific target date to implement this system.

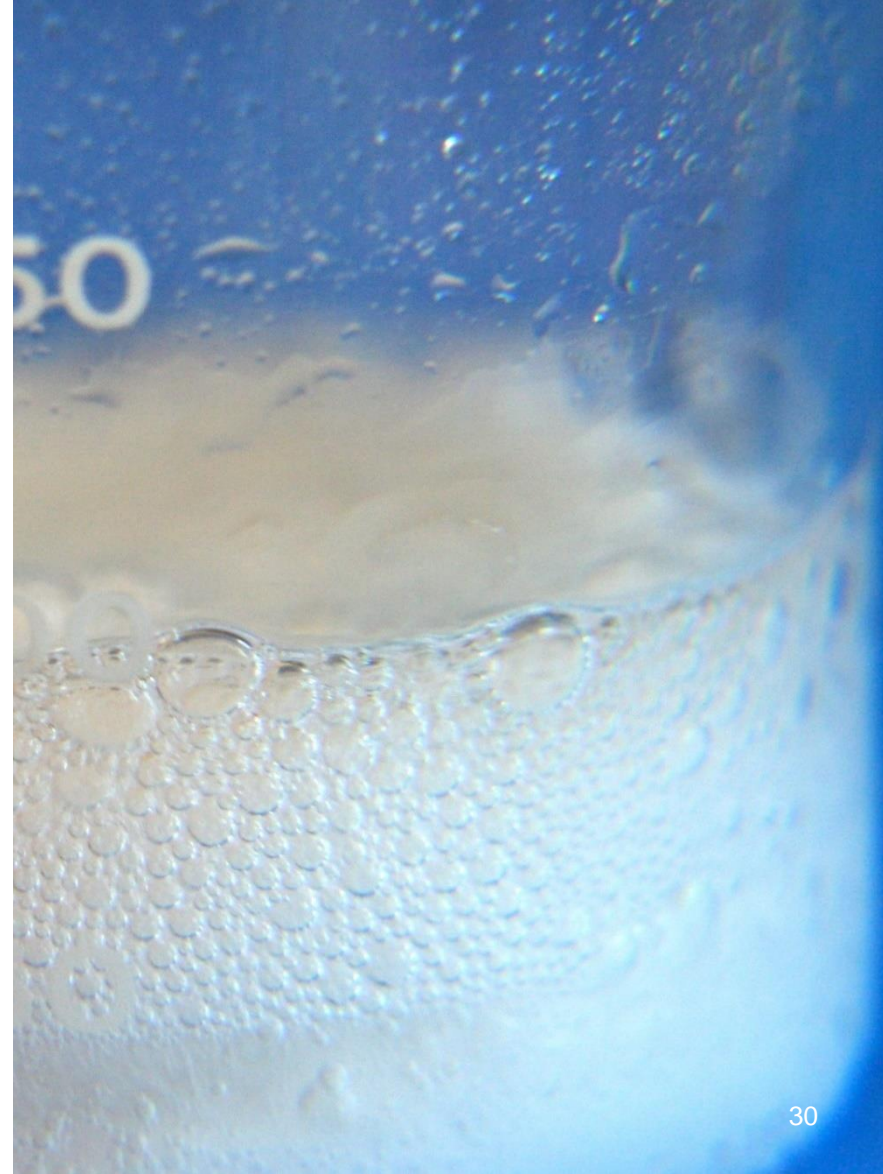




OUTSIDE THE SCOPE OF A SDS

Not intended:

- To give a detailed composition of the product with % levels for each constituent and their CAS numbers. In many cases that is the manufacturer's IP.
- To communicate about levels of impurities - unless they are hazardous and at such a level as to trigger classification and labelling requirement.
- To ensure RSL compliance on its own.
- For use as a tool to compare relative properties of products, either in terms of technical performance or on human tox/ecotox grounds.





Which of the 16 elements of the Safety Data Sheet do you know?



ELEMENTS OF SDS – GHS FORMAT

Section 1:	Chemical Product and Company Identification
Section 2:	Hazard Identification
Section 3:	Composition, Information or Ingredients
Section 4:	First Aid Measures
Section 5:	Fire-Fighting Measures
Section 6:	Accidental Release Measures
Section 7:	Handling and Storage
Section 8:	Exposure Controls and Personal Protection
Section 9:	Physical and Chemical Properties
Section 10:	Stability and Reactivity
Section 11:	Toxicological Information
Section 12:	Ecological Information
Section 13:	Disposal Considerations
Section 14:	Transport Information
Section 15:	Regulatory Information
Section 16:	Other Information



SDS SECTION 1 – HAZARD IDENTIFICATION

Identifies the chemical on the SDS as well as the recommended uses:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Recommended use of the chemical and any restrictions on use, including recommendations given by the supplier.

Provides essential contact information of supplier:

- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.



SDS SECTION 1 – EXAMPLE

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Trade name : SARABID MIP

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the Substance/Mixture : Textile auxiliary

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier

CHT R. BEITLICH GMBH Bismarckstraße 102 72072 Tübingen Germany Tel.: +49(0)70 71 15 40 info@cht.com	BEZEMA AG Kriessernstrasse 20 9462 Montlingen Switzerland Tel.: +41(0)71 763 88 11 bezema@bezema.com
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Importer : -
-
-
-
-

Responsible Department : CHT R. BEITLICH GMBH
BEZEMA AG
Product Safety
msds@cht.com
product.safety@bezema.com

1.4 Emergency telephone number
Emergency telephone number : +49(0)70 71 15 40 (Germany, 24 hours)
+41(0)71 763 88 11 (Switzerland, 24 hours)

Chemical name
(commercial or generic)

Use of product

Chemical producer

Contact details

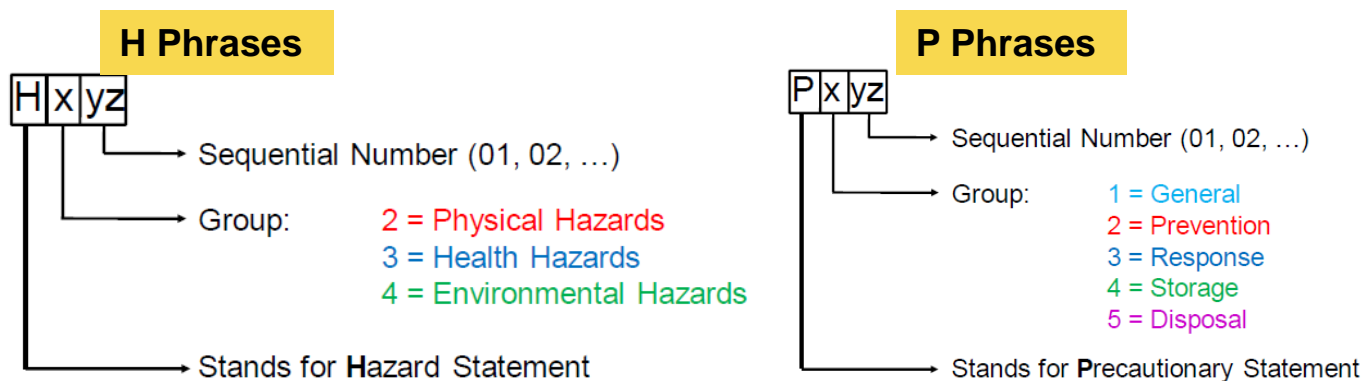
Emergency numbers



SDS SECTION 2 – HAZARD IDENTIFICATION

Hazards of the chemical and appropriate warning information associated with those hazards:

- Hazard statement(s) – **H Phrases** - describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- Precautionary statement(s) – **P Phrases** - describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling.



For further details: <https://www.osha.gov/Publications/OSHA3636.pdf>



SDS SECTION 2 – EXAMPLE

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Serious eye damage, Category 1	H318: Causes serious eye damage.
Respiratory sensitization, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Classification (67/548/EEC, 1999/45/EC)

Sensitising	R42: May cause sensitization by inhalation.
Irritant	R36: Irritating to eyes.

Classification (67/548/EEC, 1999/45/EC)

Sensitising	R42: May cause sensitization by inhalation.
Irritant	R36: Irritating to eyes.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:
Signal word	: Danger

Hazard statements	: H318 Causes serious eye damage. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Precautionary statements	: Prevention: P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P280 Wear protective gloves/ eye protection/ face protection. Response: P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 P310 IF exposed or concerned: Immediately call a POISON CENTER or doctor/ physician.

Hazardous components which must be listed on the label:

- 68411-30-3 Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts
- 143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol
- 9001-92-7 Proteinase

2.3 Other hazards

Avoid drying because formation of dust possible.
According to our present knowledge the product does not contain persistent, bioaccumulative and toxic substances (PBT substances) or very persistent and very bioaccumulative (vPvB substances) as defined in Annex XIII of the Regulation (EG) No 1907/2006 (REACH), respectively.

SDS SECTION 3 - COMPOSITION, INFORMATION OR INGREDIENTS



Substance:

Chemical identity, common name / synonyms, CAS No. and other unique identifiers and impurities or other additives which are classified and can contribute to classification of substance.

Mixture:

The chemical identity and concentration range of all hazardous ingredients as per the definition of GHS presented above the cut off levels.





SDS SECTION 3 - EXAMPLE

3.2 Mixtures

Chemical nature

Compound on base:
Special polymers
Surfactants
Enzyme

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
2-[2-(2-butoxyethoxy)ethoxy]ethanol	143-22-6 205-592-6	Xi; R41	Eye Dam. 1; H318	$\geq 15 - < 20$
3,6,9,12-tetraoxahexadecan-1-ol	1559-34-8 216-322-1	Xi; R36	Eye Irrit. 2; H319	$\geq 3 - < 5$
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	68411-30-3 270-115-0 01- 2119489428- 22	Xn; R22 Xi; R38-R41	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318	$\geq 2 - < 3$
Proteinase	9001-92-7 232-642-4	Xi; R36/37/38 R42	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 STOT SE 3; H335	< 1

For the full text of the R-phrases mentioned in this Section, see Section 16.

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



SDS – SECTION 4 FIRST AID MEASURES

Describes initial care that should be given by responders to an individual who has been exposed to chemicals.

The required information consists of:

- Necessary first-aid instructions defined by means of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects and any symptoms that are acute or could show delayed.
- Recommendations for immediate medical care and special treatment needed.





SDS – SECTION 4 EXAMPLE

4. First aid measures

4.1 Description of first aid measures

General advice	: Take off all contaminated clothing immediately. In case of allergic symptoms consult a doctor immediately. Show this safety data sheet to the doctor in attendance.
If inhaled	: Move to fresh air. If symptoms persist, call a physician.
In case of skin contact	: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
In case of eye contact	: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed	: Rinse mouth with water. Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Refer to section 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.



SDS – SECTION 5 FIREFIGHTING MEASURES

Recommendations for fire fighting caused by chemicals.

The required information consist of:

- Recommendations of suitable extinguishing equipment and information on 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 precautionary measures for firefighters.





SDS – SECTION 5 EXAMPLE

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂)
Water spray jet
Dry powder
Foam

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Hazardous decomposition products formed under fire conditions.
Can be released in case of fire:
Carbon oxides
Phosphorus oxides
Sulphur oxides
nitrogen oxides (NO_x)
acrylic monomeres

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : In case of fire do not inhale smoke, conflagration gases and steams.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SDS – SECTION 6 ACCIDENTAL RELEASE MEASURES

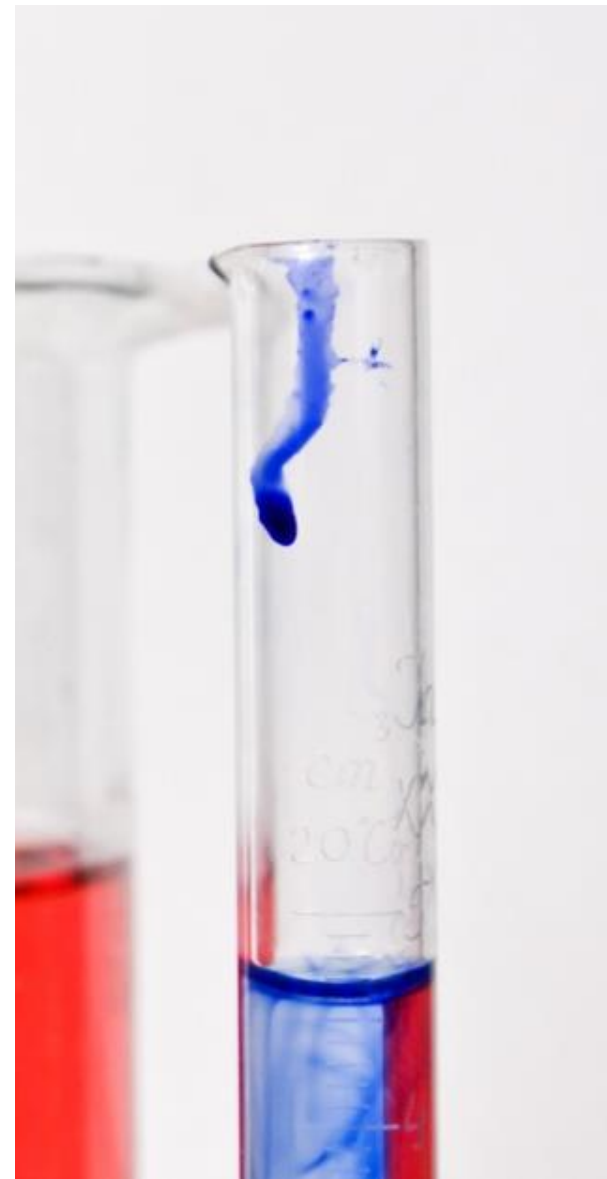


Recommendations on the appropriate response to spills, leaks, or releases, including contamination and cleanup practices to prevent or minimise exposure to people, properties and the environment.

Recommendations given distinguish between large and small spills and where the spill volume has a significant impact on the hazard.

The required information may consist of:

- Use of personal precautionary measures and protective equipment to prevent the contamination of skin, eyes and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed and appropriate protective clothing.
- Methods and materials used for contamination.
- Cleanup procedures (e.g. appropriate techniques for neutralisation, decontamination, cleaning or vacuuming, adsorbent materials, and/or equipment required for containment/clean up).





SDS – SECTION 6 EXAMPLE

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Avoid drying because formation of dust possible.
In the case of dust or aerosol formation use respirator with an approved filter.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.
Pay attention to local or official regulations.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Clean contaminated surface thoroughly.
Dispose of in accordance with local regulations.

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8.



SDS SECTION 7 – HANDLING AND STORAGE

All hazards must be taken into account when USING, HANDLING and STORING chemicals.

Focus on:

- Ammonia Liquid
- Formic Acid
- Glacial Acetic Acid
- Hydrochloric Acid
- Hydrogen Peroxide 50%
- Phosphoric Acid
- Sodium Hydroxide (NaOH)
- Sodium Silicate
- Sulphuric Acid





SDS SECTION 7 - EXAMPLE

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid formation of dust of dried material.
Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.

Advice on protection against fire and explosion : Use water spray to cool unopened containers.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Do always store in containers which correspond to the original ones.
Keep container tightly closed.
Store in cool place.

Further information on storage conditions : Protect from frost.
Protect from temperatures over + 60 °C.

Advice on common storage : No special precautions required.

German storage class : 10 Combustible liquids

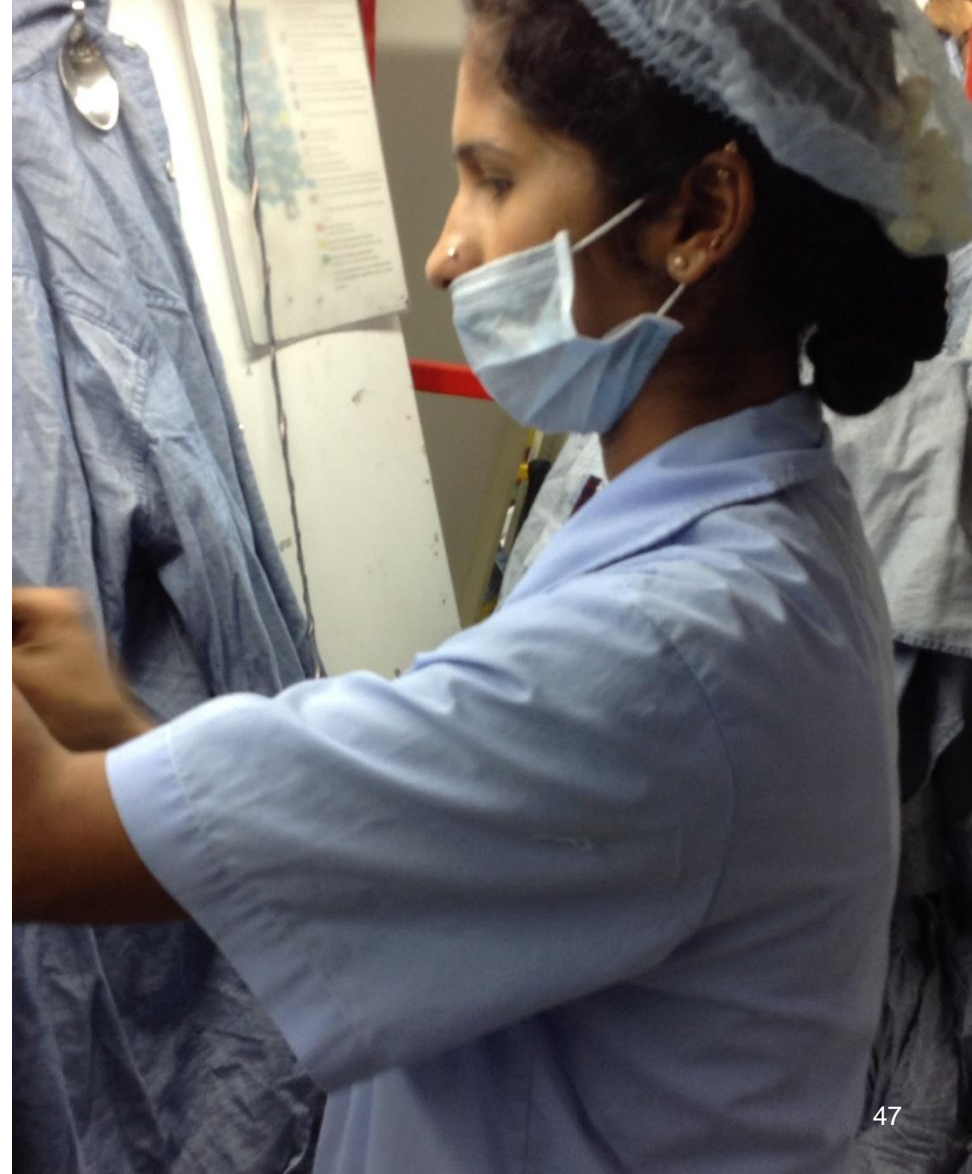
7.3 Specific end use(s)

Note : Consult the technical guidelines for the use of this substance/mixture.

SDS SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION



- **Control parameters** – occupational exposure limit values or biological limit values.
- **Engineering controls** such as airflow requirements.
- **Exposure controls** – includes information on proper PPE. A good quality SDS will clearly indicate the precise type of PPE required for protection of the eye/face, skin, body, hands, respiratory and how to control environmental exposure.





SDS SECTION 8 - EXAMPLE

8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment

Respiratory protection : In case the work place is not ventilated sufficiently and during spray processing, it is necessary to wear respiratory protective equipment.
Recommended Filter type:
Combination filter A/P

Hand protection : Nitrile rubber
Protective index Class 6
Break through time: > 480 min
Glove thickness: >= 0,35 mm

: The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
The obtained break through times according to EN 374 Part III are not measured under normal operating conditions. Therefore a maximum usage time of 50% of the break through time is recommended.

Eye protection : Safety glasses

Skin and body protection : Wear suitable protective clothing.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Do not breathe dust or spray mist.
Take off all contaminated clothing immediately.
Wash contaminated clothing before re-use.
Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

General advice : The product should not be allowed to enter drains, water courses or the soil.
Pay attention to local or official regulations.

SDS SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES



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



SDS SECTION 9 - EXAMPLE

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid
Colour	: yellow brown clear
Odour	: not significant
Flash point	: > 100 °C
Lower explosion limit	: Product is not explosive. However, formation of explosive air/steam mixtures is possible.
Upper explosion limit	: not applicable
Oxidizing properties	: not applicable
Auto-ignition temperature	: not auto-flammable
pH	: 4 - 6 at 20 °C
Melting point/range	: no data available
Boiling point/boiling range	: 100 °C
Vapour pressure	: no data available
Density	: 1,035 - 1,040 g/cm ³ at 20 °C
Water solubility	: miscible
Partition coefficient: n-octanol/water	: not applicable
Viscosity, dynamic	: no data available
Relative vapor density	: not applicable
Evaporation rate	: not applicable

9.2 Other information

Conductivity	: Not determined
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SDS SECTION 10 – STABILITY AND REACTIVITY

- Reactivity.
- Chemical stability.
- Possibility of hazardous reactions.
- Conditions to avoid (e.g. static discharge, shock or vibration).
- Incompatible materials.
- Hazardous decomposition products.





SDS SECTION 10 - EXAMPLE

10. Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : not applicable

10.5 Incompatible materials

Materials to avoid : not applicable

10.6 Hazardous decomposition products

Hazardous decomposition products : No decomposition if stored and applied as directed.

SDS SECTION 11 - TOXICOLOGICAL INFORMATION



Concise, but complete and comprehensible, description of the various toxicological (health) effects and the available data used to identify those effects, including:

- Information on the likely routes of exposure, (inhalation, ingestion, skin and eye contact).
- Symptoms related to the physical, chemical and toxicological characteristics.
- Delayed and immediate effects and also chronic effects from short and long term exposure.
- Numerical measures of toxicity, (such as acute toxicity estimates).





SDS SECTION 11 – EXAMPLE

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity : LD50: > 3.000 mg/kg
Species: rat
Argument by analogy

Acute oral toxicity
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : LD50: > 300 - 2.000 mg/kg
Species: rat
Method: OECD Test Guideline 401

Acute dermal toxicity : No data is available on the product itself.

Acute dermal toxicity
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : LD50: > 2.000 mg/kg
Species: rat
Method: OECD Test Guideline 402

Target Organ Systemic Toxicant - Single exposure

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Target Organ Systemic Toxicant - Repeated exposure

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : Exposure routes: Ingestion
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Skin irritation : Prolonged skin contact may cause skin irritation.

Skin irritation
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : Species: rabbit
Result: Skin irritation
Method: OECD Test Guideline 404

Eye irritation : Causes serious eye damage.

Eye irritation
2-[2-(2-butoxyethoxy)ethoxy]ethanol : Species: rabbit
Result: Risk of serious damage to eyes.

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : Species: rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405

Sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Sensitisation
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : Species: guinea pig
Result: Did not cause sensitization on laboratory animals.
Method: OECD Test Guideline 406

Germ cell mutagenicity

Assessment
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : No indication for a mutagenic effect; in vitro and in vivo examinations.

Carcinogenicity

Assessment
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : No indication of a carcinogenic effect.

Reproductive toxicity

Assessment
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : Animal testing did not show any effects on fertility.

Assessment
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : Did not show teratogenic effects in animal experiments.



SDS SECTION 12 - ECOLOGICAL INFORMATION

Provides information to evaluate environmental impacts of chemical(s) released into the environment.

Information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available.
- 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.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient and the bio concentration factor where available.
- Potential for a substance to move from the soil into groundwater.
- Other potential adverse effects: environmental fate, ozone layer depletion, photochemical ozone creation, endocrine disrupting and/or global warming potential.



SDS SECTION 12 – EXAMPLE



12. Ecological information

12.1 Toxicity

- Toxicity to fish : No data is available on the product itself.
- Toxicity to fish
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : LC50: > 1 - 10 mg/l
Exposure time: 96 h
Species: Lepomis macrochirus (Bluegill sunfish)
value stated in literature
- Toxicity to daphnia and other aquatic invertebrates : EC50: > 10 - 100 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202
Argument by analogy
- Toxicity to daphnia and other aquatic invertebrates
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : EC50: > 1 - 10 mg/l
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202
value stated in literature
- Toxicity to algae : No data is available on the product itself.
- Toxicity to algae
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts : NOEC: > 4 mg/l
Exposure time: 28 d
value stated in literature
- Toxicity to bacteria : EC50: > 1.000 mg/l

Species: activated sludge
Method: Retarded respiration test (OECD 209)
Argument by analogy

12.2 Persistence and degradability

- Biodegradability : DOC-CO2 measuring
30 - 70 %
Method: OECD 302 B with CO2 (elimination)
Argument by analogy

12.3 Bioaccumulative potential

- Bioaccumulation : No data is available on the product itself.

12.4 Mobility in soil

- Mobility : no data available

12.5 Results of PBT and vPvB assessment

According to our present knowledge the product does not contain persistent, bioaccumulative and toxic substances (PBT substances) or very persistent and very bioaccumulative (vPvB substances) as defined in Annex XIII of the Regulation (EG) No 1907/2006 (REACH), respectively.

12.6 Other adverse effects

- Adsorbed organic bound halogens (AOX) : The product does not increase the AOX-value of the waste water.
- Additional ecological information : According to our knowledge, the product does not contain heavy metals and other compounds of EC directive 2000/60 EC.

SDS – SECTION 13 DISPOSAL AND CONSIDERATION



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



SDS – SECTION 13 EXAMPLE



13. Disposal considerations

13.1 Waste treatment methods

- Product : Dispose of in accordance with local regulations.
- Contaminated packaging : Dispose of in accordance with local regulations.



SDS – SECTION 14 TRANSPORT INFORMATION

Provides information on shipping and transporting of hazardous chemical(s) by road, air, rail, or sea.

The information may include:

- UN (United Nations) number (e.g. four-digit identification number of the substance).
- UN proper shipping name.
- Transport hazard class(es).
- Packing group number, if applicable, based on the degree of hazard.
- Environmental hazards (e.g. identification if chemical is a marine pollutant according to the International Maritime Dangerous Goods Code).
- Guidance on transport in bulk.
- Any special precautions which an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises.





SDS – SECTION 14 EXAMPLE

14.1 UN number

ADR : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.2 Proper shipping name

ADR : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.3 Transport hazard class

ADR : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.4 Packing group

ADR : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.5 Environmental hazards

ADR : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.6 Special precautions for user

see chapter 6 - 8

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks : not applicable



SDS – SECTION 15 REGULATORY INFORMATION

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).





SDS – SECTION 15 EXAMPLE

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Components In accordance with Regulation (EC) No. 648/2004 on detergents : This product is not subject to the Regulation on Detergents.

15.2 Chemical Safety Assessment

This information is not available.



SDS – SECTION 16 OTHER INFORMATION

- This section indicates when the SDS was prepared or when the last known revision was made.
- The SDS may also state where the changes have been made to the previous version.
- You may wish to contact the supplier for an explanation of the changes.
- Other useful information also may be included here.





SDS – SECTION 16 EXAMPLE

16. Other information

Full text of R-phrases referred to under sections 2 and 3

R22	Harmful if swallowed.
R36	Irritating to eyes.
R36/37/38	Irritating to eyes, respiratory system and skin.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R42	May cause sensitization by inhalation.

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

Further information

Other information	: This data sheet contains changes from the previous version in section(s):
	2
	3
	11
	12
	16

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

SAFETY DATA SHEETS: INCOMPLETE SHEETS

SECTION 12. Ecological information

12.1. Toxicity
48 Hour-EC50 - Daphnia magna [mg/l] : No data available.
IC50 72h Algae [mg/l] : No data available.
LC50-96 Hour - fish [mg/l] : No data available.

12.2. Persistence and degradability

12.3. Bioaccumulative potential

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Incomplete section

2. COMPOSITION

The identity of this product is withheld as a trade secret.

Insufficient information



SAFETY DATA SHEET MANAGEMENT

- SDS can be obtained from **chemical suppliers**.
- Contains valuable information used to **optimise chemical use** and **improve workplace health and safety standards**.
- At a minimum, preferred suppliers should be those that provide a **SDS in the local language**, that contains all relevant **GHS standards**.
- **Best practice:** Use SDS for every chemical substance in your facility. The SDS should be kept in a **central location** and at the **point of use** so it must be readily available for consultation by workers and supervisors.

NAME OF THE CHEMICAL	USAGES	PROPERTY	EFFECT	FIRST AID
NETTING AGENT	FOR CLEANLINESS IN CLOTH	NORMAL	NORMAL	WASH THE HANDS WITH SOAP
CATIONIC SOFTNER	FOR SOFTNESS COLOUR CLOTHES	NORMAL	NORMAL	WASH THE HANDS WITH SOAP
ANIONIC SOFTNER	FOR SOFTNESS IN COLOUR CLOTHES	NORMAL	NORMAL	WASH THE HANDS WITH SOAP
ENZYME SOFTNER	FOR SOFTNESS IN WHITE CLOUTER CLOTHES	NORMAL	NORMAL	WASH THE HANDS WITH SOAP
AMYL ENZYME	PREVENT THE BUBBLING	NORMAL	NORMAL	WASH THE HANDS WITH SOAP
CRUSTIC SODA	FOR CLEANLINESS IN CLOTHES	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS AND EYES USING EYEWASH
SODASH	WASHING WHITE CLOTHES	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS AND EYES USING EYEWASH
NITRIC ACID	PREPARE PH OF WATER	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS AND EYES USING EYES WASH
ACETIC ACID	PREPARE PH OF WATER	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS AND EYES USING EYES WASH
GREEN PDL	PREVENT SPOTING ON CLOTHES	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS AND EYES USING EYES WASH
BROWN PDL	WHITENESS TO CLOTHES	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS AND EYES USING EYES WASH
MYL ACETATE	REMOVE SPOTTING FOR CLOTHES	FLAMMABLE	HARMFUL TO SKIN	WASH THE HANDS WITH SOAP
ACETONE	REMOVE SPOTTING FOR CLOTHES	FLAMMABLE	HARMFUL TO SKIN	WASH THE HANDS WITH SOAP
PERC SOFT DC-100	FOR SOFTNESS & SHINING ON CLOTHES	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS & EYES USING EYES WASH
PERCALCETHYLENE	REMOVE OILS SPOT FROM CLOTHES	NORMAL	IRRITATION IN CONTACT WITH SKIN	WASH THE HANDS WITH SOAP
OXALIC ACID	REMOVE TRACING FROM CLOTHES	NORMAL	IRRITATION IN CONTACT WITH SKIN	WASH THE HANDS WITH SOAP
LAX-100	WHITENESS TO CLOTHES	NORMAL	AVOID CONTACT WITH SKIN EYES	WASH THE HANDS & EYES USING EYES WASH
RESIZER	SOFTNESS TO HARD CLOTHES	NORMAL	AVOID CONTACT WITH EYES	WASH THE HANDS & EYES USING EYES WASH
PERGENT THER	WHITENESS TO CLOTHES	NORMAL	AVOID CONTACT WITH SKIN	WASH THE HANDS AND EYES USING EYES WASH



SDS QUICK VIEW (1/3)

Information you are looking for	Where to find in the SDS	Overview of other information in this section
Accidental Release	Section 6	Information on material spill response, containment and required spill response PPE.
Additional Information	Section 16	Provides other information about the chemical such as hazard ratings, preparation and revisions of the SDS, and label information.
Appearance	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Boiling point	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Chemical Product & name	Section 1	Provides the chemical name on the label to the SDS. Also listed is the name, address and the phone number of the company, manufacturer or distributor who provides the chemical.
Chemical Properties	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Chemical supplier/ manufacturer	Section 1	Provides the chemical name on the label to the SDS. Also listed is the name, address and the phone number of the company, manufacturer or distributor who provides the chemical.
Compatibility	Section 10	All potentially hazardous chemical reactions are identified in this section. Includes information on chemical stability, conditions to avoid, incompatibility, hazardous decomposition and hazardous polymerization
Composition	Section 2	Identifies all hazardous ingredients, permissible exposure limits (PEL) & Threshold Limit Values (TLVs).
Containment	Section 6	Information on material spill response, containment and required spill response PPE.
Disposal Considerations	Section 13	Information concerning proper chemical disposal, recycling and reclamation.
Ecological Information	Section 12	Information concerning the environmental impact if a chemical is released into the environment.
Exposure Controls	Section 8	Engineering controls & personal protective equipment to reduce chemical exposure.
Exposure limits	Section 2	Identifies all hazardous ingredients, permissible exposure limits (PEL) & Threshold Limit Values (TLVs).
Fire-Fighting	Section 5	Information on the explosive & fire properties, extinguishing agents and items and general fire-fighting information.
First Aid	Section 4	Provides first aid procedures for each route of entry.
Handling	Section 7	Information about chemical storage & handling and measures to prevent over-exposure



SDS QUICK VIEW (2/3)

Information you are looking for	Where to find in the SDS	Overview of other information in this section
Hazard Identification	Section 3	Information about the health effects of exposure; description of the material appearance, potential symptoms & health effects, routes of entry & target organs.
Hazard statements	Section 15	Provides information about applicable federal regulations, risk (R) phrase, hazard statements (GHS), safety (S) phrase, precautionary statements (GHS)
Health effects	Section 3	Information about the health effects of exposure; description of the material appearance, potential symptoms & health effects, routes of entry & target organs.
Ingredients	Section 2	Identifies all hazardous ingredients, permissible exposure limits (PEL) & Threshold Limit Values (TLVs).
Odor	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Personal Protection	Section 8	Engineering controls & personal protective equipment to reduce chemical exposure.
pH	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Physical Properties	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Physical state	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.
Potential health symptoms	Section 3	Information about the health effects of exposure; description of the material appearance, potential symptoms & health effects, routes of entry & target organs.
Precautionary statements	Section 15	Provides information about applicable federal regulations, risk (R) phrase, hazard statements (GHS), safety (S) phrase, precautionary statements (GHS)
Reactivity	Section 10	All potentially hazardous chemical reactions are identified in this section. Includes information on chemical stability, conditions to avoid, incompatibility, hazardous decomposition and hazardous polymerization
Regulatory Information	Section 15	Provides information about applicable federal regulations, risk (R) phrase, hazard statements (GHS), safety (S) phrase, precautionary statements (GHS)
Risk phrases, R-phrases	Section 15/ Section 3	Provides information about applicable federal regulations, risk (R) phrase, hazard statements (GHS), safety (S) phrase, precautionary statements (GHS) / Hazards identification
Safety phrases, S-phrases	Section 15	Provides information about applicable federal regulations, risk (R) phrase, hazard statements (GHS), safety (S) phrase, precautionary statements (GHS)



SDS QUICK VIEW (3/3)

Information you are looking for	Where to find in the SDS	Overview of other information in this section
Spill response	Section 6	Information on material spill response, containment and required spill response PPE.
Stability & Reactivity	Section 10	All potentially hazardous chemical reactions are identified in this section. Includes information on chemical stability, conditions to avoid, incompatibility, hazardous decomposition and hazardous polymerization
Storage	Section 7	Information about chemical storage & handling and measures to prevent over-exposure
Toxicological Information	Section 11	Provides information such as acute data, carcinogen potential, reproductive effects, target organ effects, and other physiological aspects
Transport Information	Section 14	Shipping information includes the hazardous materials description, hazard class and the identification number (UN or NA numbers).
Vapor pressure	Section 9	This section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, and freezing/melting point, solubility in water and specific gravity or density.



USING INFORMATION IN SAFETY DATA SHEETS

Select and share the content of your SDS in form of procedures and work instructions:

METHYL METHACRYLATE		0300 November 2003	
CAS No: 80-62-6 RTECS No: OZ5075000 UN No: 1247 EC No: 607-035-00-6		Methacrylic acid methyl ester Methyl 2-methylpropreroate $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOCH}_3$ / $\text{C}_5\text{H}_8\text{O}_2$ Molecular mass: 100,1	
TYPES OF HAZARDOUS EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Foam, powder, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE	AVOID ALL CONTACT!		
Inhalation	Cough, Shortness of breath, Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
Skin	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
Eyes	Redness, Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Nausea, Vomiting, Abdominal pain.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.
SPILLAGE DISPOSAL	PACKAGING & LABELLING		
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Remove all ignition sources. (Extra personal protection: filter respirator for organic gases and vapours.) Chemical protection suit.	F Symbol Xi Symbol R: 11-37/38-43 S: (2)-124-37-45 Note: D UN Hazard Class: 3 UN Pack Group: II		
EMERGENCY RESPONSE	STORAGE		
Transport Emergency Card: TEC (R)-3051247 NFPA Code: H2, F3, R2	Fireproof. Separated from strong oxidants, strong bases, strong acids. Cool. Keep in the dark. Keep in a well-ventilated room. Store only if stabilized.		

Instructions w/r to Hazardous Substance Safety

Company: Meyer Priv. Ltd.
Workplace, operations: Workshop 14, cementing of small parts

Hazardous substance

GESIFIX 100
Plexiglas cementing agent, acrylic resin dissolution containing methyl methacrylate.

Hazards for man and environment

Highly flammable: Vapours may form explosive mixtures with air.
Irritating: Vapours act irritating on eyes, skin and respiratory system. In contact with skin allergic reactions possible.
Harmful to water: Must not enter ground water, sewerage system and subsoil

Protective measures and rules of conduct

Switch on evacuation system during cementing. Keep away ignition sources. Keep product container tightly closed. Store below 30 °C and protect from light.

Inhalation protection: For changing product container use gas mask with filter type "A" (brown colour). Gas mask is stored in the cabinet next to the entry.

Eye protection: Use protective goggles during cementing.

Skin protection: Apply skin protection cream prior to work. Use nitrile rubber hand gloves during cementing.

Don't inhale vapours. Don't eat, drink, smoke or keep food items at the workplace. Avoid contact with eyes and skin.

Conduct in the event of danger

Fire:

- 1) Save lives
- 2) Alert fire brigade (Tel. 112 112)
- 3) Fight fire with fire extinguisher (water, foam, powder, carbon dioxide) Foam extinguisher besides entry door.

Spills: Take up small spills with vermiculite.

First aid

Skin contact: Clean with plenty of water and soap!
Eye contact: Rinse with plenty of water, seek doctor!
Swallowing: Seek doctor immediately!
Inhalation: Get fresh air! Seek doctor if indisposition continues.
Clothes contact: Change contaminated clothes immediately.

Proper disposal

Put residues into the yellow bin for centralized incineration. Bring empty product containers to the waste storage area.

Date of last revision: Signature of Employer:



ROLE PLAY

Workbook,
Exercise (5-2)

You realise you are missing the Safety Data Sheet of your dyestuff "Reactive Black 5".

Act out the following role plays and discuss.

Overview Tools And Resources For Chemical Information Profiles



POSITIVE LISTS BASED ON ZDHC COMMITMENT

Example of chemical suppliers who hold Positive Lists:

- Archroma.
- Huntsman.
- BASF.
- Rudolf.
- DyStar.
- CHT.
- Tanatex.

Google ZDHC Positive lists

Web News Images Videos More Search tools

About 1,500 results (0.54 seconds)

DyStar - ZDHC
www.dystar.com/ZDHC.cfm
The DyStar positive list: Towards Zero Discharge of Hazardous Chemicals (ZDHC) contains a listing of DyStar's global textile dyes and auxiliaries that do not ...

Huntsman positive list for ZDHC
www.huntsman.com/portal/page/.../ZDHC-Huntsman_070513257p.pdf
Huntsman Textile Effects is committed to a textile industry that produces no unnecessary environmental harm and has a positive impact on the people and ...

ZDHC
www.roadmapzero.com/
... Group Releases Key Milestone: Manufacturing Restricted Substances List (MRSL)
ZDHC Guidance Sheets Released for Eleven MRSL-restricted Chemicals ...
You've visited this page 2 times. Last visit: 18/9/14

Transfar Positive List: Towards ZDHC MRSL - Transfar
www.transfarchem.com / Home / Innovation
Jun 23, 2014 - Being China textile auxiliary industry leading enterprise, Zhejiang Transfar Co., Ltd. has worked closely with ZDHC, brand marketers and ...

ZDHC-initiative - RUDOLF GROUP - Rudolf GmbH
www.rudolf.de/en/ecology/zdhc-initiative.html
In the Zero Discharge of Hazardous Chemicals (ZDHC) Joint Roadmap, Version ...
RUDOLF-ZDHC-POSITIVE-LIST - version 2014-09-08 (english Version only) ...

Towards zero discharge of hazardous chemicals (ZDHC)
www.hm.com/zerodischarge
Towards zero discharge of hazardous chemicals (ZDHC). H&M is committed to continuously eliminate the use of all hazardous chemicals and hence achieve ...

Textile Effects
Huntsman positive list for ZDHC

DyStar

ISO 9001
Certified Worldwide

DyStar

ISO 9001
Certified Worldwide

To whom it may concern

January 2015

ZERO DISCHARGE OF HAZARDOUS CHEMICALS (ZDHC)
Product recommendations of CHT R. BEITLICH GmbH / BEZEMA AG

Detox campaign of Greenpeace – ZDHC Joint Roadmap – product recommendations of CHT R. BEITLICH GmbH and BEZEMA AG

Greenpeace has published new global environmental observations with its DETOX campaign since 2011. The Joint Roadmap of the Zero Discharge of Hazardous Chemicals initiative (ZDHC) is the answer to the DETOX campaign of some large and well-known companies within global apparel and footwear industry. The first step is the phase-out of 11 priority groups of chemicals:

- Phthalates (ortho-phthalates)
- Brominated and chlorinated flame retardants
- Azo dyes that can undergo reductive cleavage of the azo bond to release carcinogenic amines as defined in Annex XVII of REACH
- Organotin compounds
- Chlorobenzenes
- Chlorinated solvents
- Chlorophenols
- Short-chained chlorinated paraffins (SCCPs)
- Heavy metals: cadmium, lead, mercury, chromium (VI)
- Alkylphenol- and nonylphenol ethoxylates (APEOs/NPEs)
- Perfluorinated chemicals (PFCs)

Further information regarding the ZDHC Group and the Joint Roadmap is available under www.roadmapzero.com.

The CHT/BEZEMA Group supports the process of the Joint Roadmap and is therefore in direct contact with the ZDHC Group.

Regarding the 11 priority groups of chemicals we have prepared a positive product list with textile auxiliaries and textile dyes of CHT R. BEITLICH GmbH and BEZEMA AG which do not contain any of the 11 priority groups of chemicals listed above as intentional ingredients in the manufacturing recipes.

This list currently does not cover the complete portfolio of the CHT/BEZEMA Group world wide but will be updated permanently or whenever the demands are changing or the product range is being expanded.

Product List: Towards Zero Discharge of Hazardous Chemicals with the ZDHC MRSL 2014 published on 6th June 2014

committed to the highest standards of product safety and through actively supporting the objective of removing hazardous substances from clothing supply chains.

Restricted Substance List (MRSL) addresses hazardous substances into the environment during manufacturing of textiles and clothing and is to those substances that could be present in the finished products.

DyStar has compiled a list of globally marketed textile dyes and auxiliaries that do not contain any of the 11 priority groups of chemicals listed above as intentional ingredients in the manufacturing recipes.

As part of our commitment to the ZDHC Joint Roadmap, we have prepared a positive product list with textile auxiliaries and textile dyes of DyStar which do not contain any of the 11 priority groups of chemicals listed above as intentional ingredients in the manufacturing recipes.

This list currently does not cover the complete portfolio of the DyStar Group world wide but will be updated permanently or whenever the demands are changing or the product range is being expanded.

- 2 -



“EXPERT” TOOLS (1/2)

IPE Platform* - **Transparency**

- Institute of Public and Environmental Affairs (IPE) is a Chinese NGO.
- Free-to-use website where suppliers can submit their individual discharges of hazardous chemicals.



ECHA* – **Transparency**

- European Chemicals agency.
- Used to check whether chemicals comply with REACH regulations.



Greenscreen* - **Prevention**

- Free-to-use methodology for assessing the hazards and risks of chemicals.
- Used to create “black lists” and to identify safe alternatives.



* Tool currently not approved by ZDHC.



“EXPERT” TOOLS (2/2)

bluesign® bluefinder^{*} - **Prevention**

- Web-based search engine.
- bluesign® approved chemical products.



SciVera Lens Rapid Screen^{*} - **Prevention**

- Evaluates chemicals according to 22 endpoints of human and environmental health.
- Track chemicals and find more sustainable alternatives.



KEMI Prio^{*} - **Prevention**

- PRIO is a web-based tool.
- Reduce risks for human health and the environment.
- Step-by-step guide.



PRIO – A tool for Risk Reduction of Chemicals

^{*} Tool currently not approved by ZDHC.



 **MARKETPLACE**

Marketplace: Marketplace for alternatives to hazardous chemicals.

 **SIN LIST**

SIN (Substitute it Now!) List: Global database of chemicals likely to be banned or restricted in the near future.

 **SIN PRODUCERS**

SIN Producers List: Searchable database of companies that are producing or importing the most hazardous chemicals in Europe and USA.

 **SINIMILARITY**

SINimilarity: Compares if a substance is similar to a substance on the SIN List.

 **SUBS
PORT**
Substitution Support Portal

SUBSPORT: Information on alternative substances and tools and guidance for substance evaluation and substitution management.

 **TEXTILE GUIDE**

Chemical Management Guide for Textiles: Guide to evaluate and prioritise your chemicals.

Declarations And Reports



DECLARATIONS AND REPORTS

Example declarations of products:

- Oeko Tex 100 Class I / II / III / IV.
- Oeko Tex 1000 / Passport.
- Bluesign.
- GOTS.
- Other brands' RSLs.

Understand scope, applicability and relevance to your needs.





DECLARATIONS AND REPORTS

A specific compliance to brand RSL/MRSL declaration should convey specific details of the product use against the RSL based on the:

- Recipe (up to what % of dyes/chemicals including other possible dyes /chemicals).
- Process used (over dyeing/reduction clearing/RFT).
- Application process (e.g. continuous, exhaust, spray, garment, coating etc.).
- Caution the manufacturer against any possible risks.
- Should originate from authorised signatory and product safety department (global PS/ EHS/ Product stewardship in case of a multinational company).

Keep in mind:

- Define your needs, by not just using eco-friendly buzz words.
- Understand the commitment to RSL and ecology policy.
- Specify and communicate what you need.


CERTIFICATION EXAMPLES



THIRD-PARTY CERTIFICATION



FORMULATOR CERTIFICATION

SUPPLIER CERTIFICATION


 正新化學股份有限公司
 Zenith Chemical Corporation
 正新化學工業有限公司
 Zenith Chemical Industries Co., Ltd.

2013 / 09 / 25
bluesign® approved components

No	Item Name	已通過	待檢中	Note
AC-E 淺色系列				
1	Zenix Yellow AC-E	★		
2	Zenix Red AC-E	★		
3	Zenix Blue AC-E	★		
UN-SE 中深藍色系列				
4	Zenix Yellow UN-SE 200%	★		
5	Zenix Red UN-SE	★		
6	Zenix Blue UN-SE	★		
7	Zenix Orange UN-SE	★		
8	Zenix Rubine UN-SE	★		
9	Zenix Navy UN-SE 200%	★		
PLUS 酸性染色 中深藍色				
10	Zenix Yellow PLUS	★		
11	Zenix Red PLUS	★		
12	Zenix Blue PLUS	★		
13	Zenix Orange PLUS	★		
14	Zenix Rubine PLUS	★		
15	Zenix Deep Blue PLUS	★		
16	Zenix Deep Navy PLUS	★		
17	Zenix Deep Black PLUS 01	★		
UL / AM 高日光牢度系列				
18	Zenix Yellow UL-BR		○	
19	Zenix Yellow UL-GWL	★		
20	Zenix Yellow UL-HLS	★		
21	Zenix Yellow Brown UL-OAF 150%		○	
22	Zenix Pink UL-ZGLA	★		
23	Zenix Red UL-GF	★		
24	Zenix Red UL-TT	★		
25	Zenix Red UL-BLS 200% New	★		
26	Zenix Rubine UL-BB	★		
27	Zenix Blue UL-BLF	★		
28	Zenix Blue UL-BLFN		○	


 Enriching lives through innovation

Textile Effects
 Formulation List for the
 ZDHC Manufacturing Restricted Substance List
 June 2014




 Sustainability
 Innovation
 Collaboration

EMAIL

From: ChemSupplier Corp.
Date: 1st June 2014

Yes, I confirm that **Dianix EC** is
 ZDHC MRSL Compliant.

Yours sincerely,
 John Doe
 Senior Chemist

Open To Questions

SUMMARY



Every participant to feedback one key learning from this session.



Take notes in your workbook, exercise (5-3).



