ECHA
EUROPEAN CHEMICALS AGENCY

Safety data sheets and exposure scenarios
Advice for recipients

eGuide 1

eGuide

Safety Data Sheets and Exposure Scenarios

A welcome note

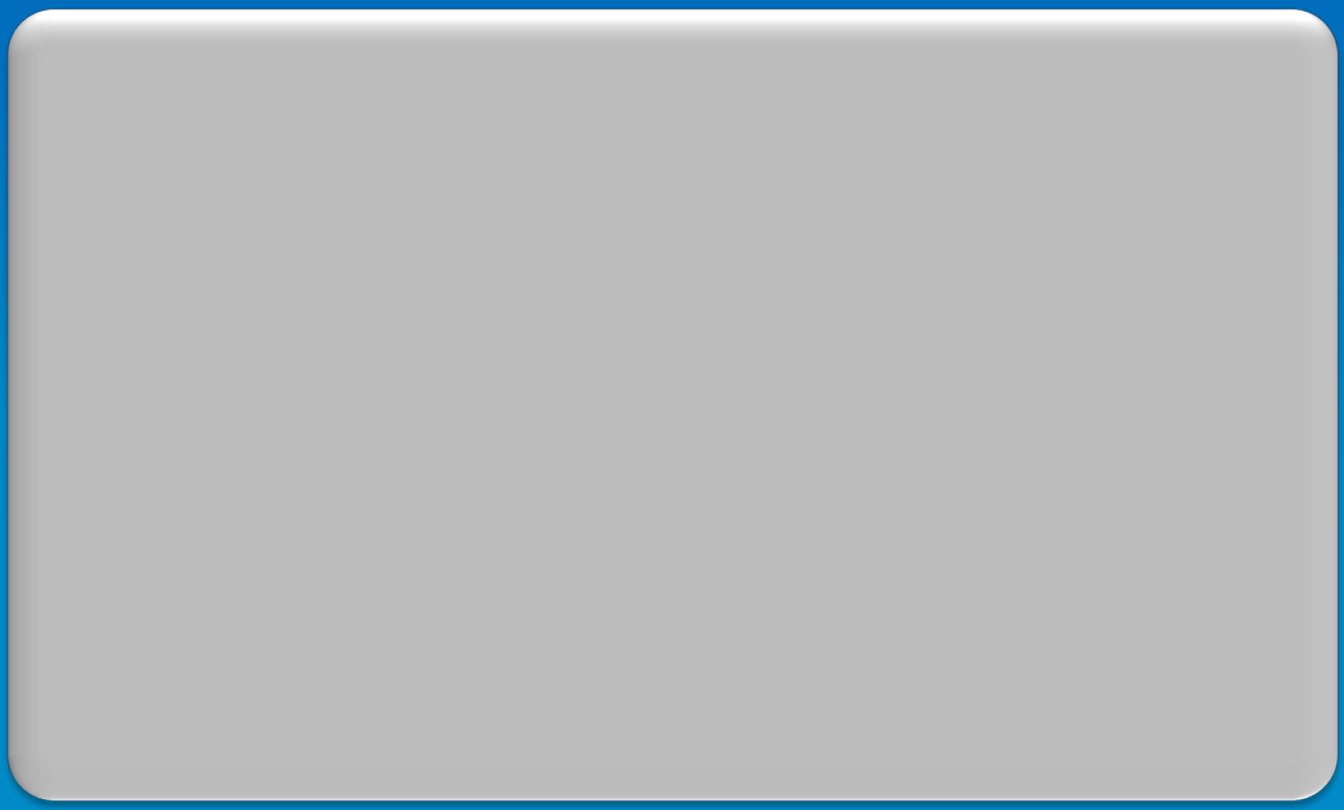
The aim of this eGuide is to help you find and use relevant information in safety data sheets and in exposure scenarios that you receive, to support you in using chemicals safely.

Whether you would like a general introduction to the topic, or want to know how to fulfil your legal obligations, this eGuide is intended to provide the information you need, in a way that is easy to find.

We suggest that you watch the film for a general introduction, and then go to the sections which are relevant to you.

Video

About the eGuide



Film duration 2:07

This video introduces the eGuide, briefly describing what it is and who it is intended for

Download the video transcript

Contents Page

Contents Page

Page Finder

Navigating the eGuide

SDS 1 | SDS 2 | SDS 3 | SDS 4

SDS 5 | SDS 6 | SDS 7 | SDS 8

SDS 9 | SDS 10 | SDS 11 | SDS 12

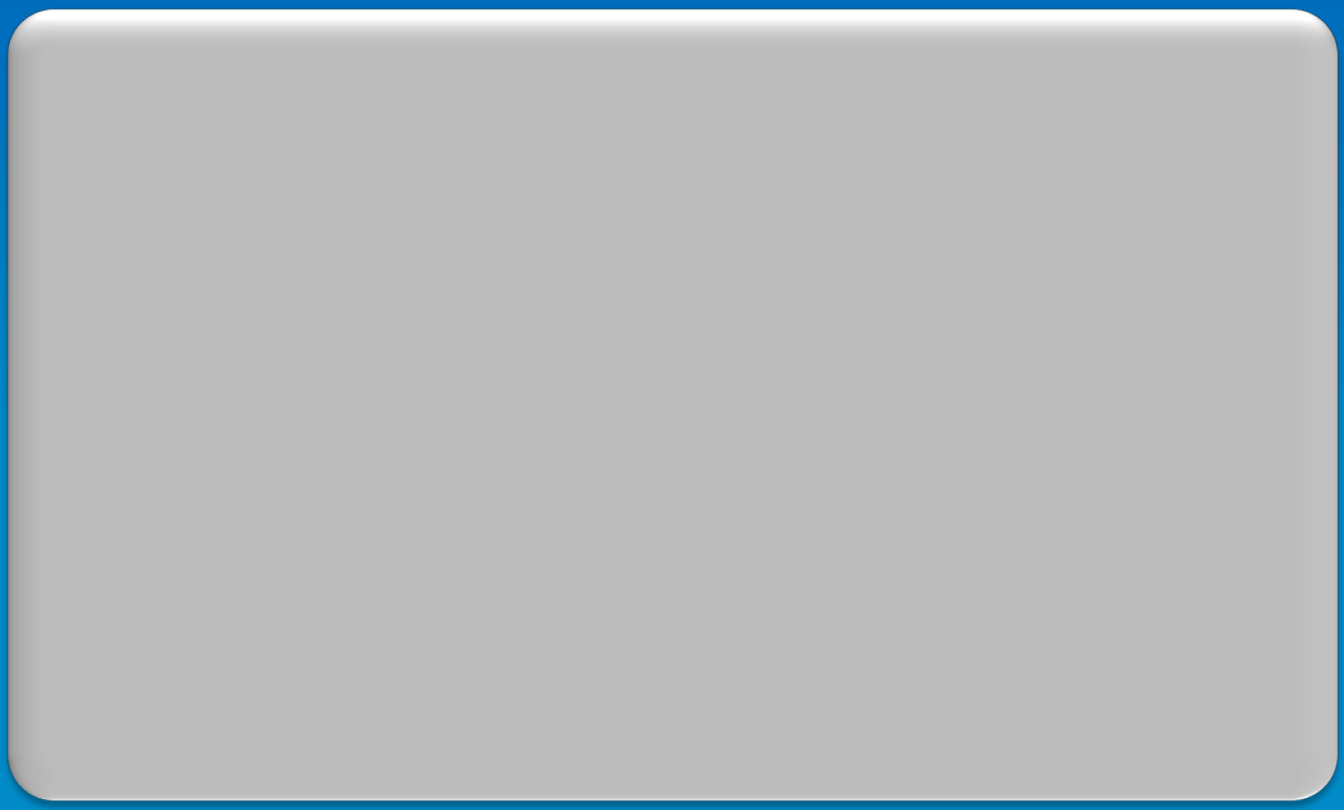
SDS 13 | SDS 14 | SDS 15 | SDS 16

ES 1 | ES 2 | ES 3 | ES 4

Contents | Useful Links

Video

Navigating the eGuide



Film duration 3:02

This video shows the design features of the eGuide and how to navigate its content

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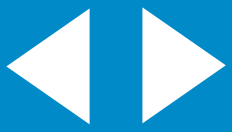
Safety Data Sheets

SDS

An introduction

The key points

A closer look



Page finder

Examples

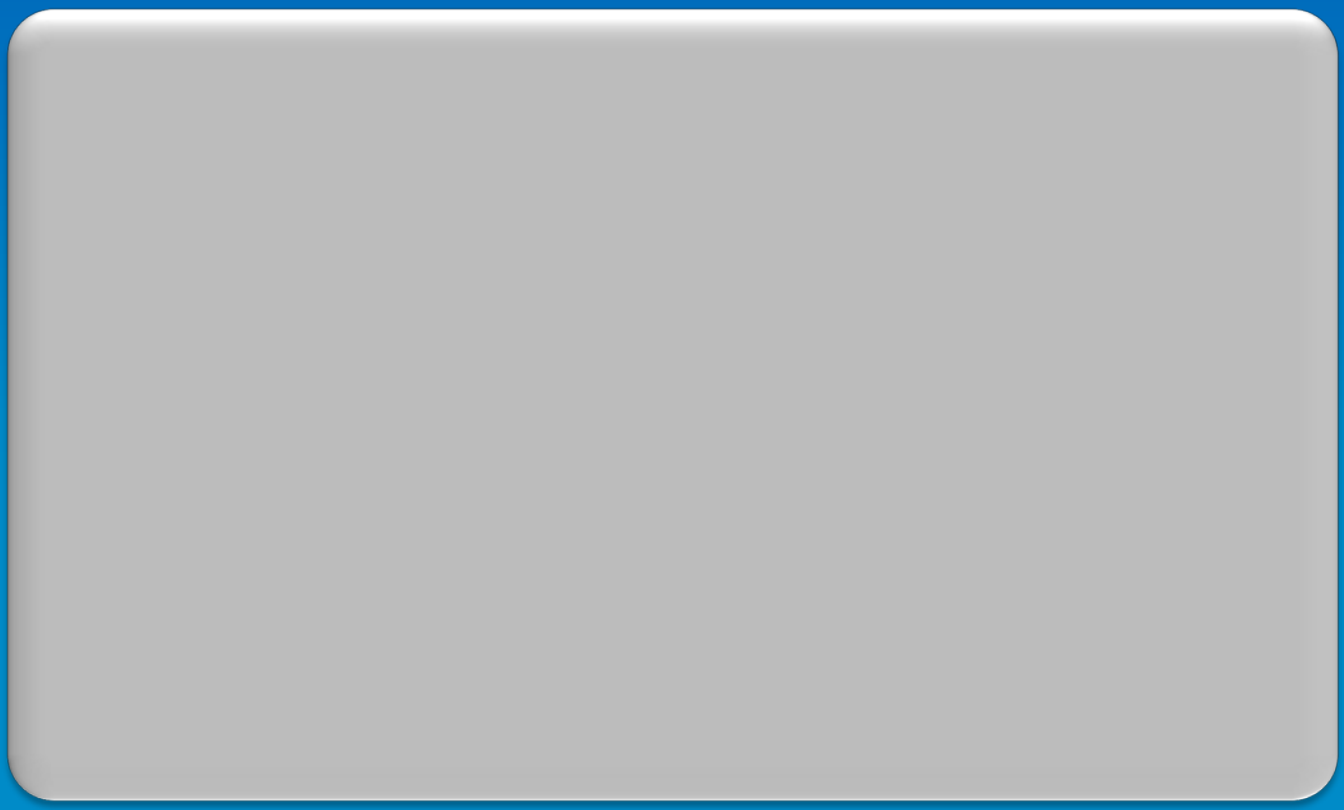
Toolbox

Templates

More Info

Video

About Safety Data Sheets



Film duration 2:49

This video introduces the main features of the safety data sheet as well as what to do when receiving one

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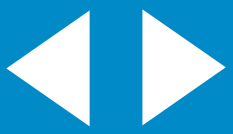
Section 1

SDS 1

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

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

SECTION 1: Identification of the substance / mixture and of the company / undertaking

1.1 Product identifier

Substance name: ECHA Substance

EC No.: 11111-11-1

REACH Registration No.: XX-XXXXXXXXXX-XX-XXXX

CAS No.: 77777-77-1

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:

- Industrial uses: Formulation of preparations (mixtures) - PROC5, ERC2, PC9a, PC18, PC24, PC31
- Professional uses: Lubricant and lubricant additive (PROC10), Coatings and paints, thinners, paint removers (PROC11), Polishing agent (PROC11), Ink and toners (PROC10)

Uses advised against:

- Consumer uses [SU 21]; Coatings and paints, thinners, paint removers [PC9a].

Reason why uses advised against:

- Use on large surface area would potentially give excessive exposure to vapour

1.3. Details of the Supplier of the Safety Data Sheet

Supplier: Fictitious Business Name

Street / P.O. Box: Address 1

Postcode / City: 00120, City

Country: Country

Telephone (Telefax): +XX-XXXXXXXXXX, +XX-XXXXXXXXXX

E-mail (competent person): SDS@companyX.com

National contact: National.Contact@email.com

1.4 Emergency telephone number

Please contact: +XX-XXXXXXXXX, National Chemicals Information Service, Country

Opening hours: 24 hours-a-day, 365 days-a-year

Other comments (e.g. language(s) of the phone service): English

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irritant 2, H315: Causes skin irritation

Eye Irritant 2, H319: Causes serious eye irritation

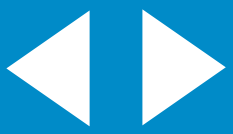
Section 2

SDS 2

Hazards identification

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

SECTION 2: Hazards identification

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Skin Irritant 2, H315: Causes skin irritation

Eye Irritant 2, H319: Causes serious eye irritation

Aquatic Chronic 3, H412: Harmful to aquatic life with long lasting effects

Classification according to Directive 67/548/EEC or 1999/45/EC

Xi; R38 Irritant; Irritating to skin

R52/R53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S61: Avoid release to the environment. Refer to special instructions/safety data sheet

2.2: Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms:

Signal word: DANGER

Hazard statements:

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H412: Harmful to aquatic life with long lasting effects.

Precautionary statements:

P273: Avoid release to the environment.

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

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice/attention.

Supplemental Hazard information (EU): Not applicable

2.3 Other hazards

Processing vapours can irritate the respiratory tracts, skin and eyes.

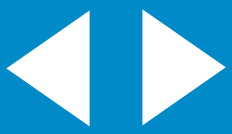
Section 3

SDS 3

Composition/information on ingredients

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

SECTION 3: Composition/information on ingredients

3.1 Substances

CAS No.	Substance Name	EC No.	REACH Registration No
77777-77-1	ECHA Substance	11111-11-1	XX-XXXXXXXXXX-XX-XXXX
-	Impurity 1	22222-22-2	-
-	Impurity 2	33333-33-3	-

SECTION 4: First aid measures

4.1 Description of first aid measures

4.1.1. General information:

Remove contaminated, saturated clothing immediately. In the case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.1.2. Following inhalation:

Remove casualty to fresh air and keep warm and at rest.

4.1.3. Following skin contact:

Wash immediately with soap and water. In case of skin irritation consult a physician.

4.1.4. Following eye contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

4.1.5. Following ingestion:

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

4.1.6. Self-protection of the first aider:

First aider: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects: Serious irritation to the eyes (burning sensation and redness, impairment of vision), and irritation to the skin (dryness and itchiness).

4.3 Indication of any immediate medical attention and special treatment needed

Specific treatment: First Aid, decontamination, treatment of symptoms.

Notes for the doctor: Treat symptomatically.

SECTION 5: Firefighting measures

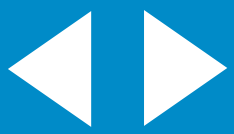
Section 4

SDS 4

First aid measures

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

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Specific treatment: First Aid, decontamination, treatment of symptoms.

Notes for the doctor: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media: Strong water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: None.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

5.3 Advice for fire-fighters

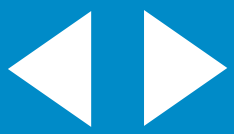
Section 5

SDS 5

Firefighting measures

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

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5.3 Advice for fire-fighters

Section 6

SDS 6

Accidental release measures

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

5.3 Advice for fire-fighters

Special protective equipment for firefighters: Wear a self-contained breathing apparatus and chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel:

Use personal protective equipment, see Section 8.

6.1.1. For emergency responders:

Remove persons to safety. Isolate hazard area and deny entry. Ventilate closed spaces before entering. Use personal protective equipment, see Section 8.

6.2 Environmental precautions

Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dispose of as special waste in compliance with local and national regulations.

6.3.1. For containment:

Collect in closed and suitable containers for disposal.

6.3.2. For cleaning up:

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.3.3. Other information:

None.

6.4 Reference to other sections

Personal protection equipment: see Section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures:

Use only in well-ventilated areas. Handle and open container with care. Always close containers tightly after the removal of product. Wear personal protective clothing (see Section 8).

Measures to prevent fire:

This product is not flammable. No special fire protection measures are necessary.

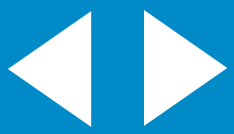
Section 7

SDS 7

Handling and storage

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

6.3.3. Other information:

None.

6.4 Reference to other sections

Personal protection equipment: see Section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures:

Use only in well-ventilated areas. Handle and open container with care. Always close containers tightly after the removal of product. Wear personal protective clothing (see Section 8).

Measures to prevent fire:

This product is not flammable. No special fire protection measures are necessary.

Measures to prevent aerosol and dust generation:

During filling, metering and sampling should be used if possible: Splashproof grounded devices. Use only semi-automated and predominantly enclosed filling lines.

Measures to protect the environment:

Shafts and sewers must be protected from entry of the product. See Section 8.

Advice on general occupational hygiene:

Work in well-ventilated zones or use proper respiratory protection. Avoid contact with skin, eyes and clothes. Provide eye shower and label its location conspicuously. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately. Wash contaminated clothing prior to re-use.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Store at room temperature.

Requirements for storage rooms and vessels:

Keep/store only in original container. Provide for retaining containers, e.g. floor pan without outflow. The floor should be leak tight, jointless and not absorbent. Ensure adequate ventilation of the storage area.

Further information on storage conditions:
Protect containers against damage.

7.3 Specific end use(s)

Recommendations: Observe instructions for use.

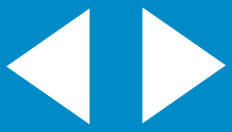
Section 8

SDS 8

Exposure controls

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

SECTION 8: Exposure controls / personal protection

Preventive industrial medical examinations are to be carried out.

8.1 Control parameters

WEL (UK): Long-term occupational exposure limit value: 40 mg/m^3

Short-term occupational exposure limit value: 80 mg/m^3

DNELs:

	Workers			
Route of exposure	**Short-term local**	**Short-term systemic**	**Long-term local**	**Long-term systemic**
Oral	NOT REQUIRED			
Inhalation	(i)	(iii)	(i)	25 mg/m³
Dermal	(ii)	(ii)	(i)	7 mg/kg bw/day
Note: (i) hazard identified but no DNEL available, (ii) no exposure expected, (iii) no hazard identified				

PNECs:

Environmental protection target	**PNEC value**
PNEC aquatic, freshwater	0.00103 mg/L
PNEC sediment, freshwater	0.837 mg/kg sediment dw
PNEC aquatic, marine water	0.00103 mg/L
PNEC sediment, marine water	0.0837 mg/kg sediment dw
PNEC secondary poisoning	No potential to cause toxic effects if accumulated (in higher organisms) via the food chain
PNEC sewage treatment plant (STP)	1.49 mg/L
PNEC soil	0.161 mg/kg soil dw
PNEC air	No hazard identified

8.2 Exposure controls

8.2.1. Appropriate engineering controls:

Section 9

SDS 9

Physical and chemical properties

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

8.2.3. Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Substance/mixture related measures to prevent exposure: No specific measures

Instruction measures to prevent exposure: No specific measures

Organisational measures to prevent exposure: No specific measures

Technical measures to prevent exposure: No specific measures

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Appearance: Dark yellow liquid (at 20°C and 101.3kPa)

(b) Odour: odourless

(c) Odour threshold: Does not apply, as substance is odourless

(d) pH: 7.0

(e) Melting point / freezing point: -54°C (at 101.3kPa), Regulation (EC) No. 440/2008, Annex, A.1

(f) Initial boiling point and boiling range: 246°C (at 101.3kPa), Regulation (EC) No. 440/2008, Annex, A.2

(g) Flash point: 142°C (at 101.3kPa), Regulation (EC) No. 440/2008, Annex, A.9

(h) Evaporation rate: No data available

(i) Flammability (solid, gas): Does not apply, substance is a liquid

(j) Upper/lower flammability or explosive limits: Does not apply, substance is not flammable.

(k) Vapour pressure: 7.8 Pa (at 20°C), Regulation (EC) No. 440/2008, Annex, A.4

(l) Vapour density: No data available, testing is technically not possible.

(m) Relative density: 0.981 (at 20°C), Regulation (EC) No. 440/2008, Annex, A.3

(n) Solubility(ies): 149 mg/L in water (at 20°C), Regulation (EC) No. 440/2008, Annex, A.6

(o) Partition coefficient: n-octanol/water: Log Kow (Pow): 4.7, Regulation (EC) No. 440/2008, Annex, A.8

(p) Auto-ignition temperature: 300 °C (at 101.3kPa), Regulation (EC) No. 440/2008, Annex, A.15

(q) Decomposition temperature: No data available, testing is technically not possible

(r) Viscosity: 85 mPa • s (dynamic) (at 20°C), OECD Guideline 114

(s) Explosive properties: Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties.

(t) Oxidising properties: Does not apply, substance is not oxidising. There are no chemical groups associated with oxidising properties.

Section 10

SDS 10

Stability and reactivity

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

9.2 Other information

No additional information relevant to safe use of the substance.

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients

10.2 Chemical stability

The substance is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

No specific conditions to avoid

10.5 Incompatible materials

No known incompatibilities

10.6 Hazardous decomposition products

Does not decompose when used for intended uses

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Practical experience / human evidence: No data available

Animal data:

	Effect dose / concentration	Species	Method	Symptoms / delayed effects	Remark
Acute oral toxicity	LD50: >2000 mg/kg bw	Rat female	OECD 423	No adverse effect observed	Direct derivation of an ATE because of robust data
Acute dermal toxicity	LD50: >2000 mg/kg bw	Rat	OECD 402	No adverse effect observed	Direct derivation of an ATE because of robust data.
Acute inhalation toxicity (vapour)	LC50: 62,300 mg/l	Rat male	OECD 403	No adverse effect observed	Direct derivation of an ATE because of robust data.

Other information: No data available

Section 11

SDS11

Toxicological information

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

10.6 Hazardous decomposition products

Does not decompose when used for intended uses

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Practical experience / human evidence: No data available

Animal data:

	Effect dose / concentration	Species	Method	Symptoms / delayed effects	Remark
Acute oral toxicity	LD50: >2000 mg/kg bw	Rat female	OECD 423	No adverse effect observed	Direct derivation of an ATE because of robust data
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Acute inhalation toxicity (vapour)	LC50: 62,300 mg/l	Rat male	OECD 403	No adverse effect observed	Direct derivation of an ATE because of robust data.

Other information: No data available

Assessment / Classification: Based on available data, the classification criteria are not met

Skin corrosion/irritation

Practical experience / human evidence: No data available

Acid-/Alkali reserve (buffer capacity for mixtures with extreme pH values)

Acidic reserve [g NaOH/100 g product]: not applicable

Alkaline reserve [g H2SO4/100 g product]: not applicable

Animal data:

Exposure time	Observation time	Species	Method	Result / evaluation	Remark
24 hours	72 hours	Albino rabbit	OECD 404	erythrema Scores: 2.3. reversible	

In-vitro skin test: data lacking

Other information: No data available

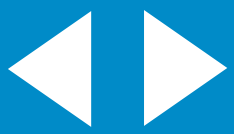
Section 12

SDS12

Ecological information

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

SECTION 12: Ecological information

12.1 Toxicity

Acute (short-term) fish toxicity:

Effect dose / concentration	Test duration	Species	Result / evaluation	Method	Remark
LC50: 10.3 mg/L	96 h	Brachydanio rerio (zebra-fish)	Harmful to fish	OECD 203	

Chronic (long-term) fish toxicity: data lacking

Acute (short-term) toxicity to crustacea:

Effect dose / concentration	Test duration	Species	Result / evaluation	Method	Remark
EC50: 22.1 mg/L	48 h	Daphnia magna (Big water flea)	Harmful to daphnia	OECD 202	

Chronic (long-term) toxicity to crustacea: data lacking

Acute (short-term) toxicity to algae and cyanobacteria:

Effect dose / concentration	Test duration	Species	Result / evaluation	Method	Remark
EC50: 80.6 mg/L	72 h	Desmodesmus subspicatus		OECD 201	
EC10: 51.9 mg/L	72 h	Desmodesmus subspicatus		OECD 201	

Toxicity to other aquatic plants / organisms: data lacking

Toxicity to microorganisms:

Effect dose / concentration	Test duration	Species	Result / evaluation	Method	Remark
EC50: 149 mg/L	3 h	activated sludge municipal		OECD 209	

Section 13

SDS13

Disposal considerations

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

13.1.1 Product / Packaging disposal:

List of proposed waste codes/waste designations in accordance with EWC.

Waste must be disposed of in line with local regulations. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1.2 Waste treatment-relevant information:

Can be incinerated together with household waste in compliance with applicable technical regulations following consultation with approved waste disposal management companies and authorities in charge.

13.1.3 Sewage disposal-relevant information:

Release to the environment or sewage system is prohibited. Must be treated as hazardous waste.

13.1.4 Other disposal recommendations:

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Transport may take place according to national regulations or Land transport (ADR/RID), Sea transport (IMDG) or Air transport (ICAO-TI / IATA-DGR). Sections 14.1 to 14.5 apply for all. The substance is not transported by inland waterway so information with regards to ADN is not relevant.

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Section 14

SDS14

Transport information

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

13.1.1 Product / Packaging disposal:

List of proposed waste codes/waste designations in accordance with EWC.

Waste must be disposed of in line with local regulations. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1.2 Waste treatment-relevant information:

Can be incinerated together with household waste in compliance with applicable technical regulations following consultation with approved waste disposal management companies and authorities in charge.

13.1.3 Sewage disposal-relevant information:

Release to the environment or sewage system is prohibited. Must be treated as hazardous waste.

13.1.4 Other disposal recommendations:

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Transport may take place according to national regulations or Land transport (ADR/RID), Sea transport (IMDG) or Air transport (ICAO-TI / IATA-DGR). Sections 14.1 to 14.5 apply for all. The substance is not transported by inland waterway so information with regards to ADN is not relevant.

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

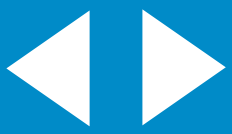
Section 15

SDS 15

Regulatory information

The key points

A closer look



Page finder

SECTION 15: Regulatory Information

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

EU regulations:

Authorisations and/or restrictions on use: None

Other EU legislation: Commission Regulation (EU) No 474/2014 of 8 May 2014 amending Annex XVII to Regulation (EC) No 1907/2006

Commission Regulation (EU) No 944/2013 of 2 October 2013 (5th ATP) amending Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Waste Framework Directive 2008/98/EC.

National regulations (UK):

Management of Health and Safety at Work Regulations (1999)

Control of Substances Hazardous to Health Regulations (COSHH 2002)

Personal Protective Equipment Regulations (2002)

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

(i) Indication of changes: Section 3 updated, to include the classification according to Regulation (EC) No 1272/2008 [CLP] (5th ATP), in preparation for the 1 June 2015 deadline.

(ii) Abbreviations and acronyms:

ATP: Adaptation to Technical Progress
bw: bodyweight
CAS No: Chemical Abstracts Service number
CLP: Classification Labelling and Packaging Regulation
DNEL: Derived No-Effect Level
ES: Exposure scenario
EC: European Commission
EC No: European Chemical number: EINECS, ELINCS or NLP
ECHA: European Chemicals Agency
EEC: European Economic Community
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
ERC: Environmental Release Category
EU: European Union
GLP: Good Laboratory Practice
LC50: Lethal concentration, 50%

Section 16

SDS16

Other information

The key points

A closer look

Page finder

Examples

Toolbox

Templates

More Info

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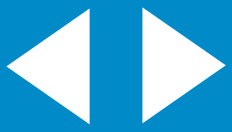
Exposure Scenarios

ES

An introduction

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

Video

About Exposure Scenarios

Film duration 4:43

This video introduces the main features of the exposure scenario as well as what to do when receiving one

Download the video transcript

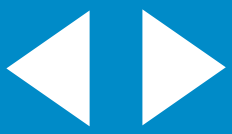
Exposure Scenario

ES 1

Section 1: Title section

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

ES3: Use at industrial site: Coatings, paints, thinners, paint removers

1. Title Section

Coatings and paints, thinners, paint removers (PC 9a)	
Environment	
CS 1: Industrial application of coatings and inks; Water-based scrubbing process	ERC 5
Workers	
CS 2: : Industrial application of coatings and inks; Closed systems; With occasional controlled exposure	PROC 2
CS 3: Raw material transfer and/or dispensing with dedicated equipment	PROC 8b
CS 4: Mixing operations (open systems)	PROC 5
CS 5: Loading of application equipment; Manual	PROC 8a
CS 6: Spraying	PROC 7
CS 7: Roller, spreader, flow coating or printing	PROC 10
CS 8: Dipping, immersion and pouring	PROC 13
CS 9: Force drying (50 – 100oC)	PROC 2
CS 10: Equipment cleaning and maintenance; Manual	PROC 8a

2. Conditions of use affecting exposure

CS1: Control of environmental exposure: Industrial application of coatings and inks; Water-based scrubbing process (ERC 5)
Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.02 tonnes/day
Annual amount per site <= 4.0 tonnes/year
Technical and organisational conditions and measures
Remove sludge regularly from process/cleaning water in reservoir.
Equalising tank required; Continuous releases.
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via municipal sewage treatment 22 %
Assumed municipal sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d

CS2: Control of worker exposure: Industrial application of coatings and inks; Closed systems; With occasional controlled exposure (PROC 2)
Product (article) characteristics
Limit the substance content in the product to 5 %.
Amount used (or contained in articles) frequency and duration of use/exposure
Covers daily exposure up to 8 hours

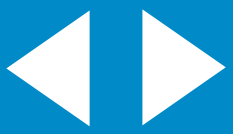
Exposure Scenario

ES 2

Section 2: Conditions of use affecting exposure

The key points

A closer look



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Examples

Toolbox

Templates

More Info

2. Conditions of use affecting exposure

CS1: Control of environmental exposure: Industrial application of coatings and inks; Water-based scrubbing process (ERC 5)
Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.02 tonnes/day
Annual amount per site <= 4.0 tonnes/year
Technical and organisational conditions and measures
Remove sludge regularly from process/cleaning water in reservoir.
Equalising tank required; Continuous releases.
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via municipal sewage treatment 22 %
Assumed municipal sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d

CS2: Control of worker exposure: Industrial application of coatings and inks; Closed systems; With occasional controlled exposure (PROC 2)
Product (article) characteristics
Limit the substance content in the product to 5 %.
Amount used (or contained in articles) frequency and duration of use/exposure
Covers daily exposure up to 8 hours
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in closed, continuous process with occasional controlled exposure
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

CS3: Control of worker exposure: Raw material transfer and/or dispensing with dedicated equipment (PROC 8b)
Product (article) characteristics
Limit the substance content in the product to 5 %.
Amount used (or contained in articles) frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

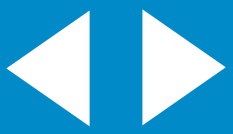
Exposure Scenario

ES 3

Section 3: Exposure estimation and reference to its source

The key points

A closer look



Page finder

Examples

Toolbox

Templates

More Info

3. Exposure estimation and reference to its source

CS1: Environmental release and exposure: Industrial application of coatings and inks; Water-based process (ERC 5)

Release route	Release rate	Release estimation method
Water	0.1 kg/day	SpERC based xxxx 5.1 - a.v1 Industrial use of coatings and inks (low volatiles) - Process with water involved (low volatiles, medium water solubility)
Air	0.2 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	0.004 mg/L	0.378
Sediment (freshwater)	0.316 mg/kg dw	0.377
Marine water	3.891E-4 mg/L	0.378
Sediment (marine water)	0.032 mg/kg dw	0.378
Sewage treatment plant	0.039 mg/L	0.026
Agricultural soil	0.025 mg/kg dw	0.154
Man via Environment – Inhalation	3.109E-5 mg/m³	< 0.01
Man via Environment – Oral	0.017 mg/kg bw/day	< 0.01

CS3: Worker exposure: Industrial application of coatings and inks; Closed systems; With occasional controlled exposure (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	2.5 mg/m³ (TRA Worker v3)	0.101
Dermal, systemic, long-term	2.742 mg/kg bw/day (TRA Worker v3)	0.039
Combined routes, systemic, long-term		0.14

CS4: Worker exposure Raw material transfer and/or dispensing with dedicated equipment (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	2.5 mg/m³ (TRA Worker v3)	0.101
Dermal, systemic, long-term	2.742 mg/kg bw/day (TRA Worker v3)	0.392
Combined routes, systemic, long-term		0.493

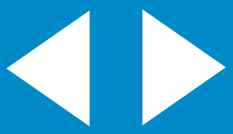
Exposure Scenario

ES 4

Section 4: Guidance to DU on the boundaries set by the ES

The key points

A closer look



Page finder

Combined routes, systemic, long-term		0.14

CS4: Worker exposure Raw material transfer and/or dispensing with dedicated equipment (PROC 8b)		
Route of exposure and type of effects	**Exposure estimate**	**RCR**
Inhalation, systemic, long-term	2.5 mg/m³ (TRA Worker v3)	0.101
Dermal, systemic, long-term	2.742 mg/kg bw/day (TRA Worker v3)	0.392
Combined routes, systemic, long-term		0.493

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling method - Workers
Exposure estimation tool used: ECETOC TRA v3.
Scalable Parameters Workers
exposure duration maximum concentration
Non scalable parameters
Other parameters (different from those indicated under scalable parameters) have to be taken (with no change) from the Exposure Scenario provided
Boundaries of Scaling
RCR not to be exceeded are described in Section 3 above.
Scaling instructions
For Scaling instructions please go to the following website: http://companyX-reach/scaling/

Useful Links

There is a lot of information for downstream users of chemicals on the ECHA website. You can find this information using the interactive map. Click the information you are interested in to go directly to that webpage or document.

Some additional useful links are:

ECHA Homepage
http://www.echa.europa.eu

National and ECHA Helpdesks
http://www.echa.europa.eu/support/helpdesks

ECHA's accredited stakeholders
http://www.echa.europa.eu/about-us/partners-and-networks/stakeholders/echas-accredited-stakeholder-organisations

Downstream Users of Chemical Co-ordination group (DUCC)
http://www.ducc.eu

European Agency for Safety and Health at Work
https://osha.europa.eu/en

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Safety data sheets and exposure scenarios – Advice for recipients

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http://echa.europa.eu/echa-information-desk


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