Introduction to Hazard and risk assessments

Workshop on risk assessment and risk management of chemicals
Brasilia
9-10 November 2016

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Swedish Chemicals Agency

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Kemikalieinspektionen
Swedish Chemicals Agency

Why conduct Hazard and Risk Assessments?

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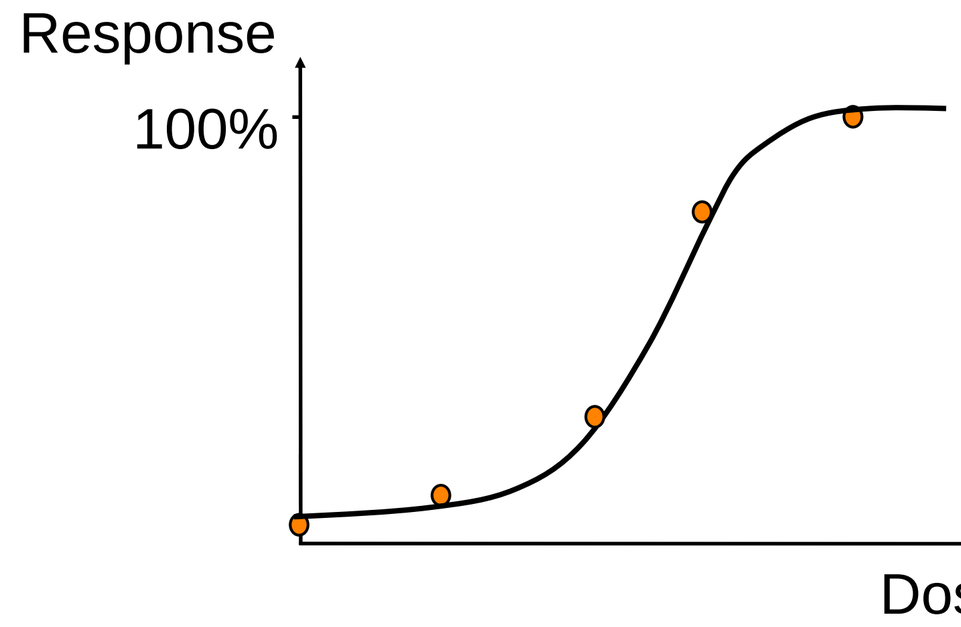
Alle Ding sind Gift und nichts ohn Gift; alein die Dosis macht, das ein Ding kein Gift ist

Paracelsus 1493-1541

(Theophrastus Bombastus Philippus Aureolus Paracelsus von Hohenheim)



ALL IS POISON, NOTHING IS WITHOUT POISON; ONLY THE DOSE DETERMINES WHAT IS NOT A POISON

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Where to start?

- The intrinsic properties of substances
  - Classification – GHS
- Types of properties
  - Human health hazards
  - Environmental hazards
  - Physical hazards

GHS Hazard classes

PHYSICAL HAZARDS	HEALTH HAZARDS	ENVIRONMENTAL HAZARDS
2.1 Explosives	3.1 Acute toxicity	4.1 Hazardous to the aquatic environment
2.2 Flammable gases	3.2 Skin corrosion/irritation	4.2 Hazardous to the ozone layer
2.3 Aerosols	3.3 Serious eye damage/eye irritation	
2.4 Oxidising gases	3.4 Respiratory or skin sensitization	
2.5 Gases under pressure	3.5 Germ cell mutagenicity	
2.6 Flammable liquids	3.6 Carcinogenicity	
2.7 Flammable solids	3.7 Reproductive toxicity	
2.8 Self-reactive substances and mixtures	3.8 Specific target organ toxicity — single exposure	
2.9 Pyrophoric liquids	3.9 Specific target organ toxicity — repeated exposure	
2.10 Pyrophoric solids	3.10 Aspiration hazard	
2.11 Self-heating substances and mixtures		
2.12 Substances and mixtures which, in contact with water, emit flammable gases		
2.13 Oxidising liquids		
2.14 Oxidising solids		
2.15 Organic peroxides		
2.16 Corrosive to metals		
2.17 Densensitized explosives		

Health hazard – Toxicity to humans

Acute toxicity	Chronic toxicity
Single exposure	Repeated exposure
High dose	Low dose
Clinical symptoms	No overt clinical symptoms
Treatment	Treatment not always possible
Recovery	Sustained/irreversible damage

Basic concepts

- Some chemicals produce *local effects*
- Most chemicals produce *systemic effects* ➔ effects do not occur at the site of first contact
- Require *absorption* and *distribution* to a distant site where the effects are produced
- Most chemicals are *metabolised* before *excretion*
- Adverse effects are usually observed in one or two organs (*target organs*)

Non-threshold effects

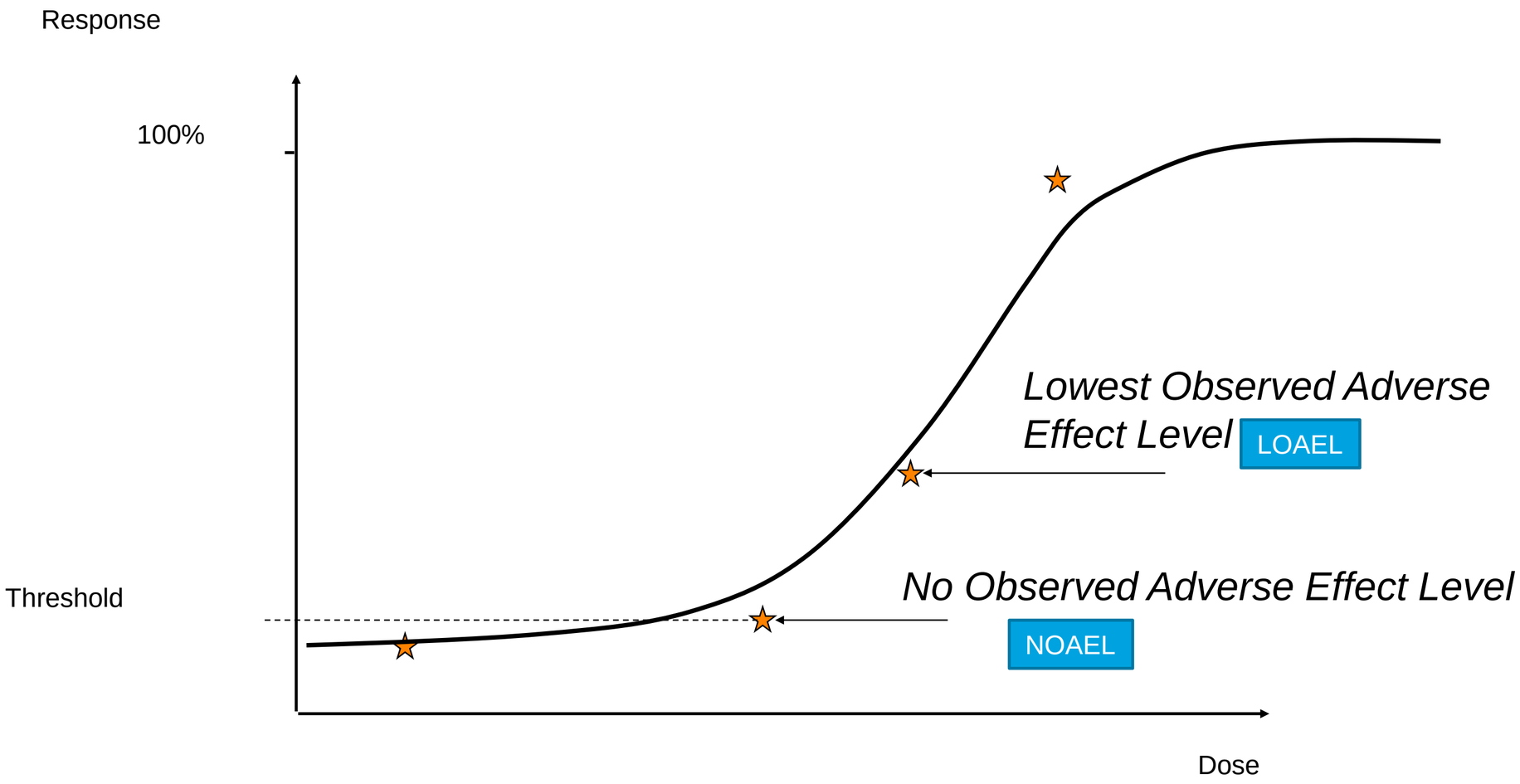
Non-threshold effects

- Effects that occur at any exposure level in some individuals of a population

Threshold effects

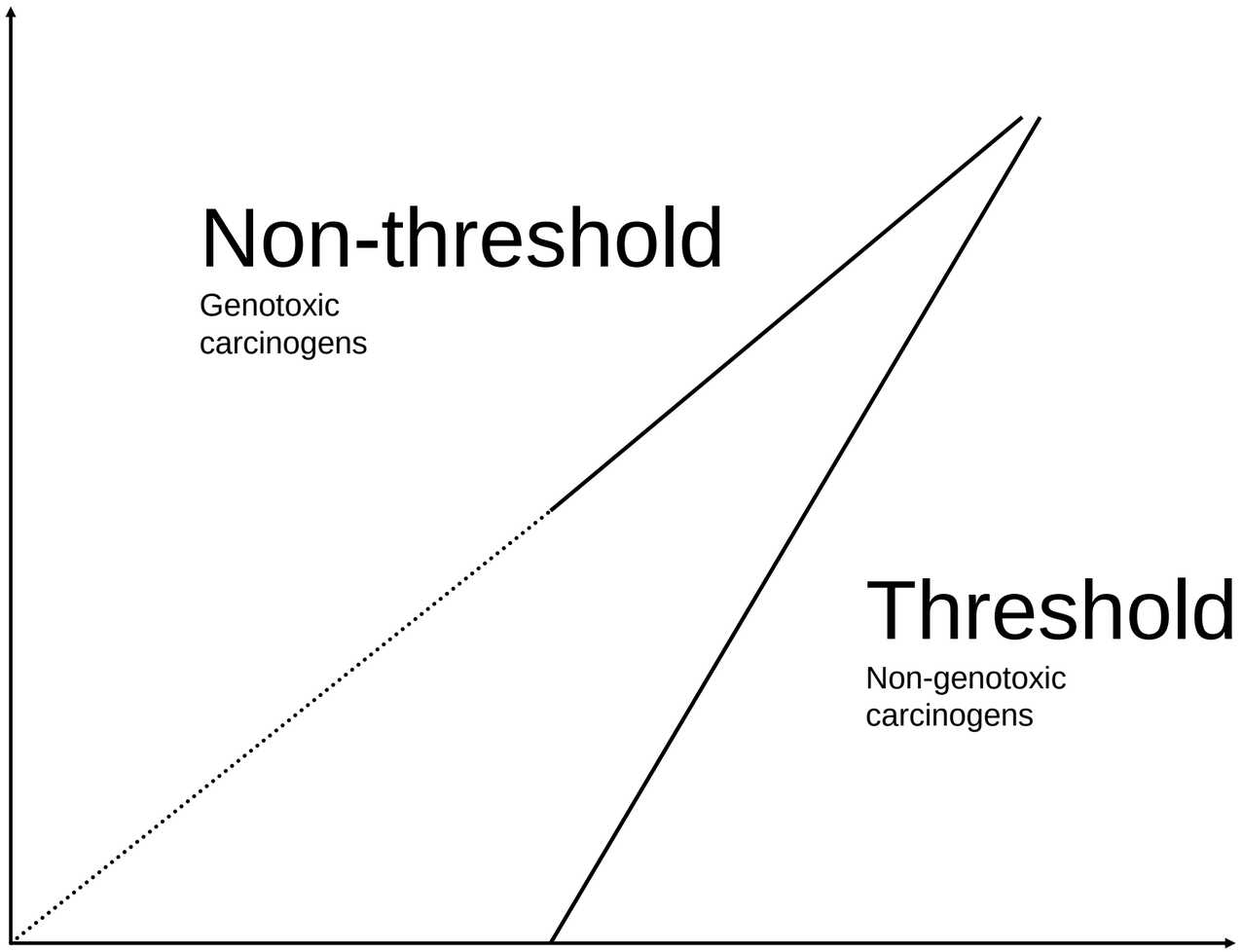
- Effects that are not observed below a specific level of exposure

Dose-response relationship



Carcinogenicity

Evidence that exposure increases the incidence of tumours



Introduction: Hazard and Risk

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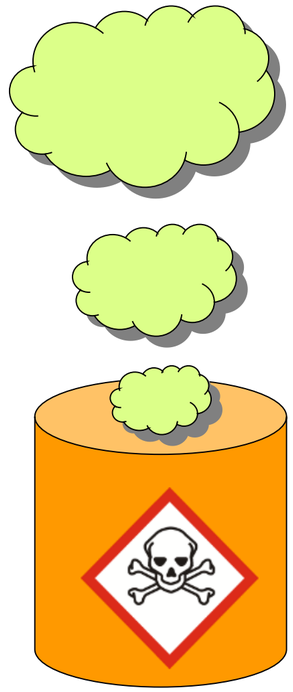
Hazard and Risk

Hazard x Exposure = Risk

Intrinsic property
(constant)

Use conditions
(variable)



Where to start?

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  - Classification – GHS
- Types of properties
  - Human health hazards
  - Environmental hazards
  - Physical hazards

Hazard classification

Hazard Class

Nature of hazard

(TEST)METHOD & CRITERIA

Severity of hazard

Category 1

Category 2

Category 3

Not in this Hazard Class

Decrease in severity

Classification of substances

- **Data** generated in accordance with **test methods** (e.g. OECD TG, UN Manual for TDG);
  - ➢ *Test data is required to assess physical hazard*
- **Epidemiological data and experience** on the effects on humans, such as occupational data and data from accident databases;
- **Other information** (to fill data gaps) including Read across, Grouping of chemicals and **(Q)SAR** ((Quantitative) Structure Activity Relationship)

Use available Data and Assessments!

- Data on intrinsic properties **can** be used globally:
  - Toxicological and ekotoxicological testing
  - Hazard information
  - Classification & Labelling

- Exposure assessments **can usually not** be used globally:
  - Differences in use, handling and exposure
  - Environmental differences
  - Weather differences

  =>Can give different risk assessment conclusions

Definitions

Exposure

- Concentration or amount of a chemical substance that reaches a target organism, system, or (sub)population in a specific frequency for a defined duration.

Exposure assessment

- Evaluation of the exposure of an organism, system, or (sub)population to a chemical substance (and its derivatives)

Exposure scenario

- A set of conditions or assumptions about sources, exposure pathways, amounts or concentrations of agent(s) involved, and exposed organism, system, or (sub)population used to aid in the evaluation and quantification of exposure(s) in a given situation

IPCS Risk Assessment Terminology (WHO, 2004)

How to find out the exposure?

- Is there any likelihood that there will be an exposure to the chemical
  - does it exist on the market (high or low volumes)
  - or is it a pollutant.
- What are the ways of exposure
- Are humans and/or the environment exposed
- What are the frequency of exposure
- Are there any specific sensitive groups, species or environmental compartments

How to find out the exposure?

- Exposure data – country specific
- Models for calculating exposure can be applied (use, emissions, concentrations in humans or the environment)
- Exposure Scenarios
  - REACH uses that, guidance available
- Data from other countries can give some guidance

Exposure pathways

Environment

air *water* *food* *soil*

Consumer products

oral

inhalation

dermal

Occupational environment

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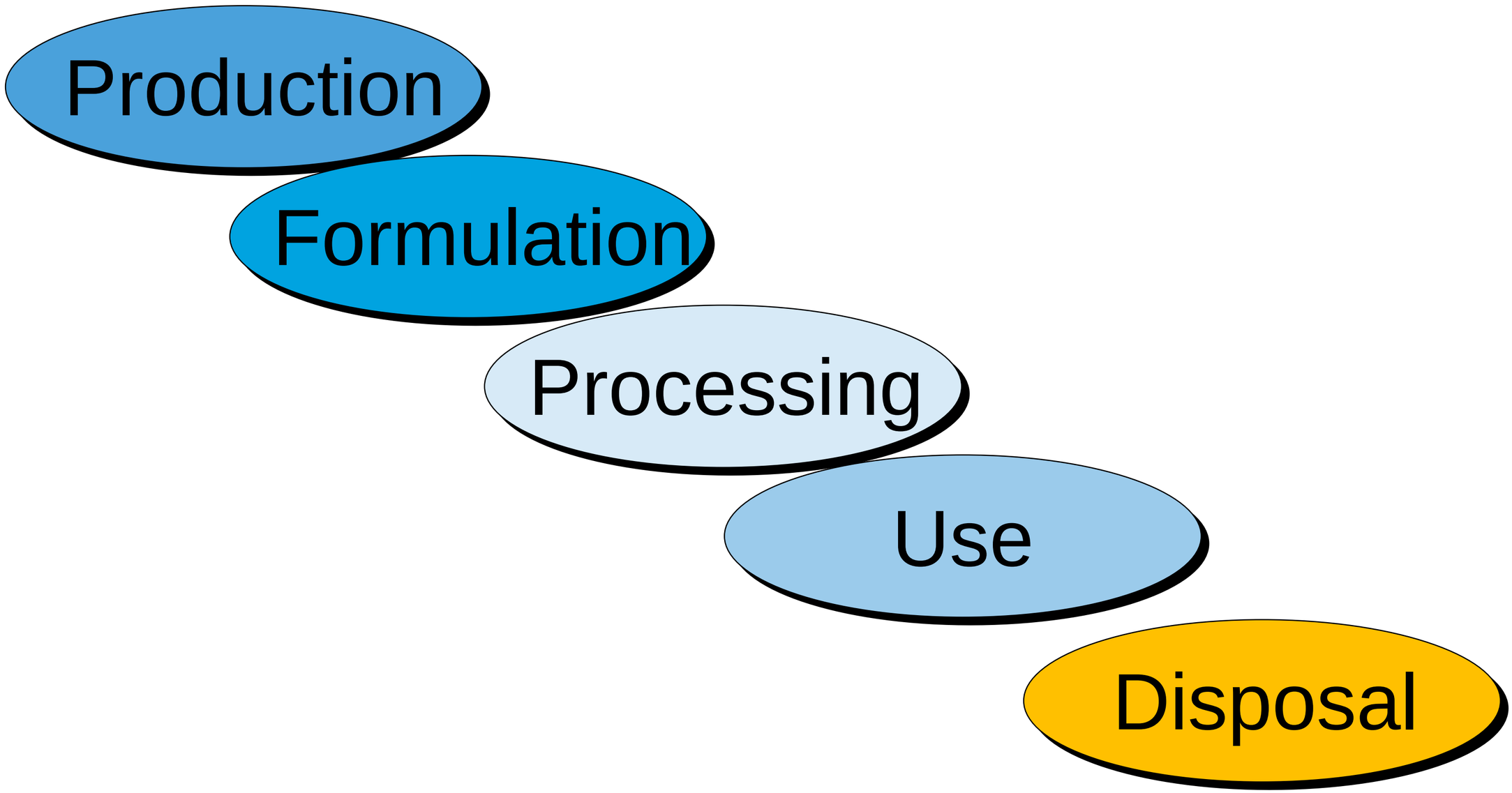
Emissions – life cycle stages



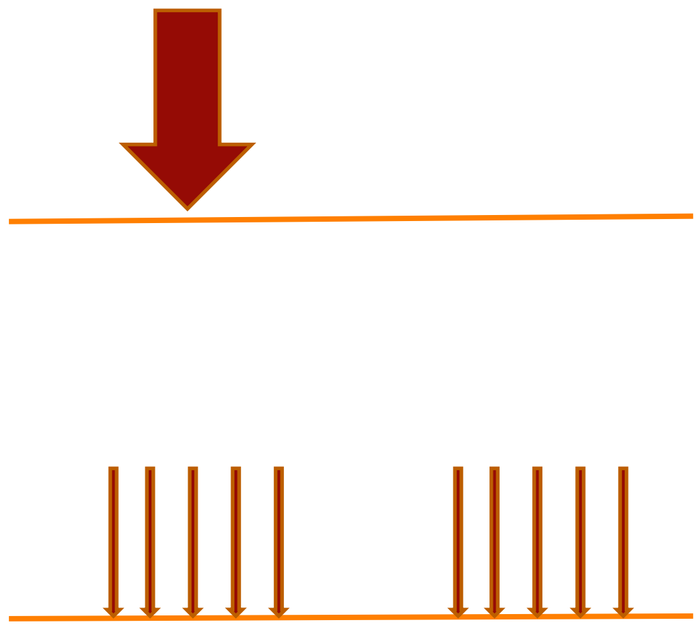
Types of exposure

- **Acute exposure**

  - accidental exposure
    - Acute toxic dose
- **Intermittent exposure**

  - e.g. work place
    - Recovery
- **Chronic exposure**

  e.g. ambient air, drinking water
    - Cumulative dose



Exposure assessment

Exposure models

Environmental monitoring

Personal exposure monitoring

Biomonitoring

- ***Absorbed dose***
- ***Body burden***
- ***Target tissue concentration***
- ***Biologically effective dose***

Factors to consider

Physiological factors

- Age
- Gender
- Body weight
- Skin surface area
- Physical condition
- Disease
- Genetics

Behavioural factors

- Time-activity patterns
- Life-style factors
- Socio-economics
- Nutritional status
- Physical activity

Risk assessment

- **Hazard assessment**
- **Exposure assessment**

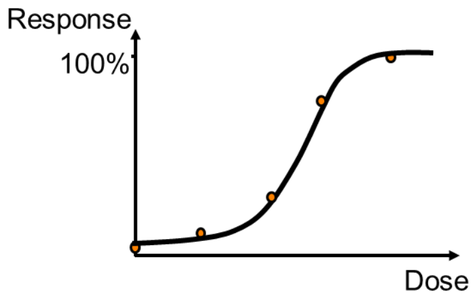
Risk characterization

Risk assessment

Classification and Labelling

Hazard identification

- Is the identity of the chemical known?
- Is the chemical potentially hazardous to humans?



Hazard characterization and guidance/guideline value identification

- What properties of the chemical have the potential to cause adverse health effects?
- Do guidance or guideline values from international organizations exist for the chemical?
- What assumptions about exposure and dose are incorporated into guidance/guideline values for the chemical?
- Do those assumptions reflect conditions specific to the local population?

Exposure assessment

- In what ways could people come into contact with the chemical?
- How much exposure is likely to occur?
- For how long is exposure likely to occur?
- What metric of exposure is appropriate for characterizing health risks?

Risk characterization

- How does the estimated exposure compare with guidance/guideline values for the chemical?

From: WHO Human Health Risk Assessment Toolkit

Risk characterisation

The estimation of the **incidence and severity of the effects likely to occur** due to actual or predicted exposure to a chemical.

The levels of exposure are compared with the threshold levels for each effect.

- Where it is not possible to determine a threshold level for one effect, a qualitative or semi-quantitative approach is used.

Assessment Factors

- To address the differences between the experimental data and the human situation, taking into account the uncertainties in the extrapolation procedure and in the available data set.
  - ➢ Aspects to consider:
    - interspecies differences
    - intraspecies differences
    - differences in duration of exposure
    - issues related to dose-response
    - quality of the whole database.

- Often 10 x 10 = 100
  for inter individual and inter species variation

Risk assessment - Principles

- Exposure data
- Hazardous properties
  - Environment and health
- Compare concentrations in environment /human exposure levels with concentrations where no effect occurs

- Overview of models at OECD web site
- Comprehensive models in e.g. REACH and regulations on plant protection products

Responsibilities/roles of actors in Chemicals risk management

- Enterprises are responsible for
  - a safe marketing of chemicals
  - a safe use of chemicals

- Government/agencies
  - steer
  - guide
  - supervise/inspect
  - decide on the need for risk management for the most toxic ones

Governments/agencies

- Risk assessments
- Unwanted properties (e.g. CMR, PBT)

- Define in legislation division of responsibilities between industry/authorities for gathering data and making risk assessments

Use available Data and Assessments!

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Safe use of chemicals

Risk management

Exposure assessment and Risk characterisation

Hazard communication

Labels and Safety Data Sheets

Hazard classification

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Where to find data

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Where to find data

- OECD test guidelines
- Hazard information on OECD portal (http://webnet3.oecd.org/echemportal/)
- EU classifications (in Regulation (EC) No 1272/2008)
- GHS
- Openly available information through REACH

OECD

The Global Portal to Information on Chemical Substances

eChemPortal

eChemPortal
- Home
- Substance Search
- Property Search
- GHS Search
- What's new?
- General Information
- Participating Databases
- Roles & Responsibilities
- Linking to eChemPortal
- Schedules of Assessments
- Structure Search
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- FAQ
- How to search for information
- Contact us
- Disclaimer

Chemical Substance Search

Chemical Property Data Search

GHS Search

Thirty one data sources participate under Chemical Substance Search.
Four data sources participate under Chemical Property Data Search.
Two data sources participate under the GHS Search.
The list of data sources participating in eChemPortal is continuously expanding.

eChemPortal provides free public access to information on properties of chemicals:

- Physical Chemical Properties
- Ecotoxicity
- Environmental Fate and Behaviour
- Toxicity

eChemPortal allows simultaneous searching of reports and datasets by chemical name and number, by chemical property, and by GHS classification. Direct links to collections of chemical hazard and risk information prepared for government chemical review programmes at national, regional and international levels are obtained. Classification results according to national/regional hazard classification schemes or to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) are provided when available. In addition, eChemPortal provides also exposure and use information on chemicals.

Latest news

The Chemical Hazards Database of the European Food Safety Authority is now linked to eChemPortal

20 April 2016

Launch of the new search by GHS classification in eChemPortal

12 June 2015

Closure of ESIS and OECD SIDS temporarily down

17 November 2014

eChemPortal
- Home
- Substance Search
- Property Search
- GHS Search
- What's new?
- General Information
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Participating Databases

- Databases currently participating in eChemPortal
- Data sources which can be found through a search by Property
- Data sources which can be found through a search by GHS classification
- Number of substance identity and endpoint records per participating source searchable through eChemPortal*

Databases currently participating in eChemPortal

- ACToR
  U.S. EPA Aggregated Computational Toxicology Resource
- AGRITOX
  AGRITOX - Base de données sur les substances actives phytopharmaceutiques
- APVMA-CR
  The Australian Pesticides and Veterinary Medicines Authority (APVMA) database of completed chemical reviews
- CCR
  Canadian Categorization Results
- CESAR
  Canada's Existing Substances Assessment Repository
- Combined Exposures
  Collection of Case Studies on Risk Assessments of Combined Exposures to Multiple Chemicals
- ECHA C&L inventory
  Public Classification and Labelling (C&L) Inventory according to the European Union (EU) CLP Regulation (EC) No 1272/2008
- ECHA CHEM
  European Chemicals Agency's Dissemination portal with information on chemical substances registered under REACH.
- EFSA Open Food Tox
  Chemical Hazards Database of the European Food Safety Authority
- EnviChem
  Data Bank of Environmental Properties of Chemicals
- EPA HHBP

existing chemicals other than Priority Existing Chemical assessments

- NICNAS PEC
  Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS) Priority Existing Chemical Assessment Reports
- OECD HPV
  Organisation for Economic Cooperation and Development (OECD) Existing Chemicals Database
- OECD SIDS IUCLID
  OECD Existing Chemicals Screening Information Data Sets (SIDS) Database
- SIDS UNEP
  OECD Initial Assessment Reports for HPV Chemicals including Screening Information Data Sets (SIDS) as maintained by United Nations Environment Programme (UNEP) Chemicals
- SPIN
  Substances in Preparations In the Nordic countries
- UK CCRMP Outputs
  UK Coordinated Chemicals Risk Management Programme Publications
- US EPA IRIS
  United States Environmental Protection Agency Integrated Risk Information System
- US EPA SRS
  United States Environmental Protection Agency Substance Registry Services

Databases that have submitted property data that can be queried in eChemPortal

- CCR
- ECHA CHEM
- J-CHECK
- OECD SIDS IUCLID

Databases that have submitted GHS classification data that can be queried in eChemPortal:

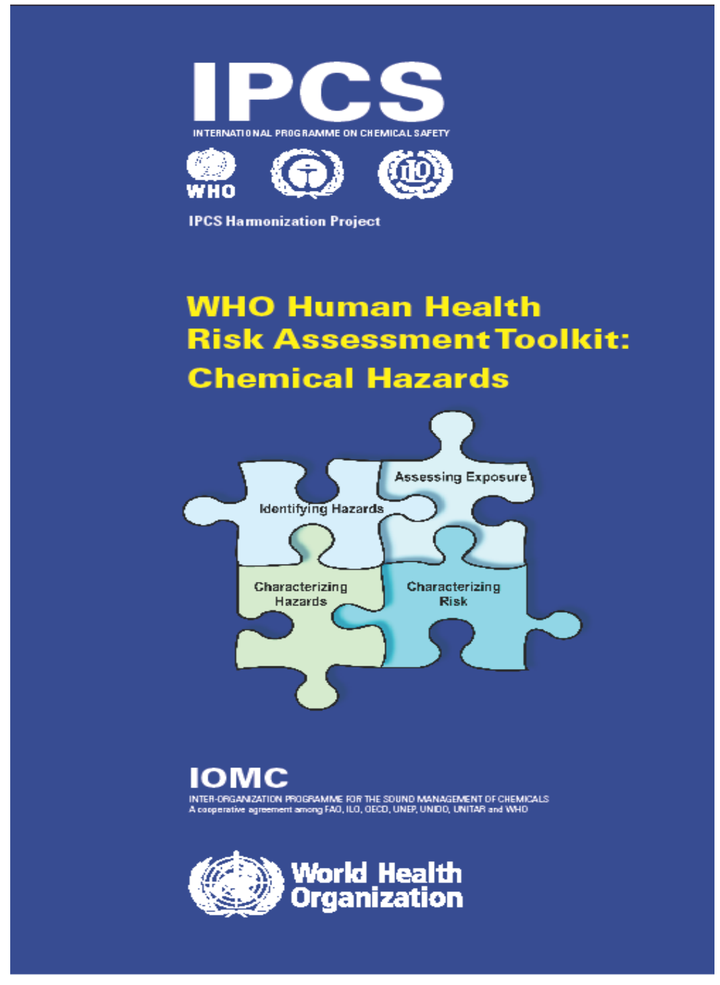
- ECHA C&L inventory
- GHS-J

Number of substance identity and endpoint records per participating data source searchable through eChemPortal

(Report posted periodically. Last post 17 November 2014)

WHO Human Health Risk Assessment Toolkit

- Assist with the performance of risk assessment.
- Promote the use of information developed by international organizations.
- Targeted at people with training in the principles of risk assessment.



Hard copy and web version:
http://www.who.int/ipcs/methods/harmonization/areas/ra_toolkit/en/index.html

EPA USA

Information on Risk assessment, Exposure factors etc.

https://www.epa.gov/risk

- Human Health Risk Assessment Products and Publications
  https://cfpub.epa.gov/ncea/risk/hhra/advSearch.cfm
- Exposure factors handbook

https://www.epa.gov/expobox/about-exposure-factors-handbook

WHO / International Programme on Chemical Safety

http://www.who.int/ipcs/en/

http://www.who.int/ipcs/publications/en/

- Directories of resources
- Generic resources on risk assessment
- Chemical-specific resources
  - *Hazard identification resources*
  - *Hazard characterization/ guidance or guideline value resources*
  - *Exposure assessment resources*
  - *Risk characterization resources*

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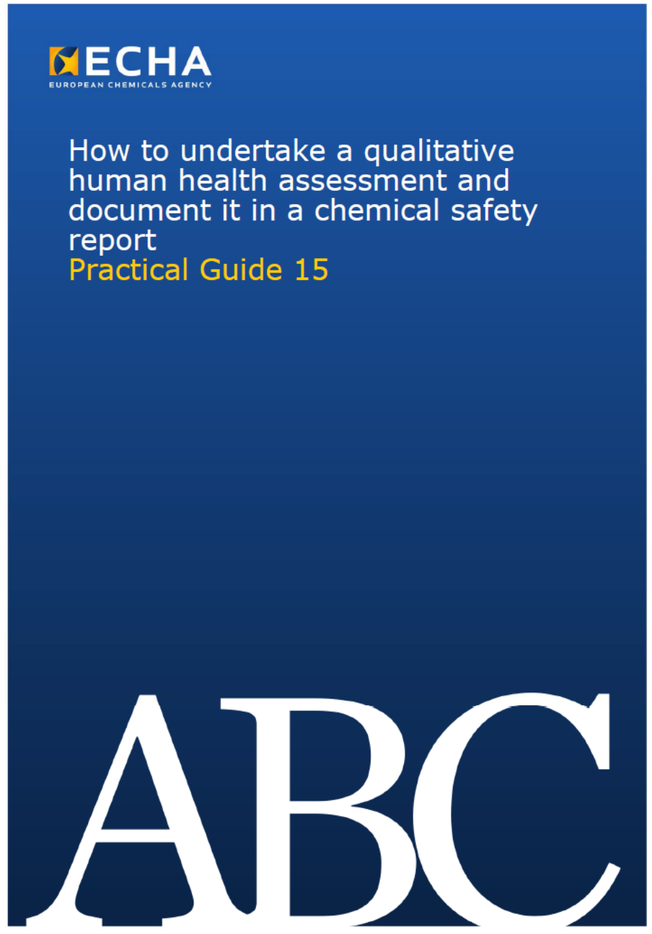
Practical Guide on Human Health Assessment

- How to undertake a qualitative human health assessment and document it in a chemical safety report

  Practical Guide 15



http://echa.europa.eu/documents/10162/13655/pg_15_qualitative-human_health_assessment_documenting_en.pdf

ECHA Dissemination

- Information from registrations published on ECHA web site
  - According to REACH legislation, ECHA will have to provide public access to (non-confidential) information on registered substances
    - Accessible and useful also to countries outside the EU
- Confidentiality can be claimed on certain elements of the dossier (REACH Art. 119 (2))
- List of registered phase-in substances updated weekly
- Information at: **http://echa.europa.eu/doc/ECHADocuments/ed_64_dissemination_for_internet.pdf**

Registered substances

The data comes from registration dossiers submitted to ECHA by the date indicated as last update. The Total Tonnage Band is compiled from all the dossiers with two exceptions; any tonnages claimed confidential and any quantity used as an intermediate to produce a different chemical. The Total Tonnage band published does not necessarily reflect the registered tonnage band(s).

Please note that some of the information on registered substances may belong to third parties. The use of such information may therefore require the prior permission of the third party owners. Please consult the *Legal Notice* for further information.

Please note that information on chemical properties of registered substances is directly accessible via *eChemPortal*.

Chemical Property Data Search

Further information

- Registered substances information
- How to determine what will be published (Data Submission Manual 15)
- Understanding REACH Regulation
- Q&A on registered substances
- Give us your feedback
- eChemPortal
- Legal notice

Last updated 23 May 2016. Database contains 14137 unique substances and contains information from 54490 dossiers.

▾ Substance identity

ECHA
EUROPEAN CHEMICALS AGENCY

Search the ECHA Website
Advanced search »

18/05/2016 - News alert

New support for companies registering low tonnage, low risk chemicals

ECHA has published an inventory of substances, which are likely to fulfil the criteria to be hazardous. The inventory helps REACH registrants, who manufacture or import between 1 to 10 tonnes per year, in deciding whether they may be able to register their substance with limited information.

News

23/05/2016 - News item

Check which REACH guidance will still be updated

A list of REACH guidance documents still subject to change before the last registration deadline is now available.

19/05/2016 - News item

New version of Chesar available in June

The new release date for the update of ECHA's Chemical Safety Assessment and Reporting tool, Chesar, is 21 June 2016.

10/05/2016 - News alert

Search for Chemicals Advanced search

I have read and I accept the legal notice

› REACH-IT

Information on Chemicals

This is unique source of information on the chemicals manufactured and imported in Europe. It covers their hazardous properties, classification and labelling, and information on how to use them safely. This information is a valuable resource for advancing the safe use of chemicals and for the replacement of the most hazardous ones by safer alternatives.

Please note that some of the information on chemicals may belong to third parties. The use of such information may therefore require the prior permission of the third party owners. Please consult the *Legal Notice* for further information.

As from 20 January 2016, information on up to 120 000 chemicals is enriched and structured in three layers: **infocard, brief profile** and detailed **source data**.

Further information

- What is an infocard? [PDF]
- How to determine what will be published from a REACH dossier
- How to determine what will be published from a Biocides dossier
- Give us your feedback
- Legal notice
- Information on Chemicals - known issues [PDF]

Search for Chemicals

Advanced search

I have read and I accept the legal notice

Substance information

Infocards are automatically generated based on industry data. What is an infocard?

Carbon disulphide

↓Other names: Regulatory process names [2] IUPAC names [5]

Substance identity

EC / List no.: 200-843-6

CAS no.: 75-15-0

Mol. formula: CS2

Hazard classification & labelling

Danger! According to the **harmonised classification and labelling** (CLP00) approved by the European Union, this substance causes damage to organs through prolonged or repeated exposure, is a highly flammable liquid and vapour, causes serious eye irritation, is suspected of damaging fertility and the unborn child and causes skin irritation.

Additionally, the classification provided by companies to ECHA in **REACH registrations** identifies that this substance may damage fertility or the unborn child, is suspected of damaging fertility or the unborn child and is harmful if inhaled.

Properties of concern

R

Important to know

- Substance included in the Community Rolling Action Plan (CoRAP).

How to use it safely

- Precautionary measures suggested by manufacturers and importers of this substance.
- Guidance on the safe use of the substance provided by manufacturers and importers of this substance.

About this substance

This substance is manufactured and/or imported in the European Economic Area in 100 000 - 1 000 000 tonnes per year.

This substance is used in the following products: laboratory chemicals, pH regulators and water treatment products and polymers. This substance has an industrial use resulting in manufacture of another substance

Överstrykningspenna

› Legal notice

Last updated 20 May 2016. Database contains 14137 unique substances and contains information from 54466 dossiers.

Substance identity

Substance name:

CAS number:

EC / List number:

› Administrative data

› Substance data

› Uses and exposure

View all Registered Substances

Search | Clear all

Showing 1 - 50 of 15,990 results. Items per Page 50 Page 1 of 320 |< First < Previous Next > Last >|

Name	EC / List no.	CAS no.	Registration type	Submission type	Total tonnage band	
10-(piperazin-1-yl)-2-thia-9- azatricyclo[9.4.0.0^{3,8}] pentadeca- 1(15),3,5,7,9,11,13-heptaene dihydrochloride	700-276-9	111974-74-4	Intermediate		Intermediate Use Only	

IOMC Toolbox for Decision Ma... | Registered substances - EC...

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ECHA > Information on Chemicals > Registered substances

Registered substances

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Please note that information on chemical properties of registered substances is directly accessible via *eChemPortal*.

Chemical Property Data Search

Further information

- Registered substances information
- How to determine what will be published (Data Submission Manual 15)
- Understanding REACH Regulation
- Q&A on registered substances
- Give us your feedback
- eChemPortal
- Legal notice

Last updated: 23 May 2016. Database contains 14137 unique substances and contains information from 54490 dossiers.

Substance identity

Substance name: | CAS number:

EC / List number:

Administrative data

Substance data

Uses and exposure

View all Registered Substances | Search | Clear all

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Name	EC / List no.	CAS no.	Registration type	Submission type	Total tonnage band	
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10-(piperazin-1-yl)-2-thia-9-azatricyclo[9.4.0.0^{3,8}]pentadeca-1(15),3,5,7,9,11,13-heptaene dihydrochloride	700-278-9	111974-74-4	Intermediate		Intermediate Use Only	
5-amino-3-(4-chlorophenyl)-5-oxopentanoic acid	700-338-4	1141-23-7	Intermediate		Intermediate Use Only	
((2-ethyl-1-oxohexyl)oxy)-(1-phenyl-1,3-decanediolyl) dioctyl stannane	422-920-5	-	NONS		Tonnage Data Confidential	

((3-(sec-butyl)-4-(decyloxy)phenyl)methanetriyl)tribenzene

EC number: 801-941-7 | CAS number: 1404190-37-9

General information

Classification & Labelling & PBT assessment

Manufacture, use & exposure

Physical & Chemical properties

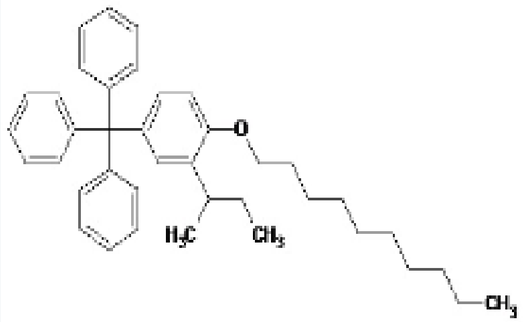
Environmental fate & pathways

Ecotoxicological information

General information

Identification | Compositions | Registration data | Administrative data | Contact Persons responsible for the SDS

Identification



Display Name:	-
CAS Number:	1404190-37-9
Molecular formula:	C39H48O
IUPAC Name:	-

Type of substance

Composition:	mono constituent substance
Origin:	organic

Environmental fate & pathways

Ecotoxicological information

Toxicological information

Analytical methods

Guidance on safe use

Assessment reports

Reference substances

General information

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Type of substance

Composition:	mono constituent substance
Origin:	organic

Other names

Trade names:	ACCUTRACE S-10
	ACCUTRACE S4-10

Total tonnage band

Total range:	10 - 100 tonnes per annum

REACH

Registered as:	FULL
Submitted:	Joint Submission

Publication dates

C&L Inventory

This database contains classification and labelling information on notified and registered substances received from manufacturers and importers. It also includes the list of harmonised classifications. The database is refreshed regularly with new and updated notifications. However, updated notifications cannot be specifically flagged because the notifications that are classified in the same way are aggregated for display purposes.

Classifications derived from joint submissions to the REACH registration process are flagged accordingly. For more information on these substances, please consult the *Registered substances* database.

Please note that some of the information on C&L Inventory may belong to third parties. The use of such information may therefore require the prior permission of the third party owners. Please consult the *Legal Notice* for further information.

Further information

- More information about C&L Inventory
- Understanding the CLP Regulation
- C&L Platform
- Q&A on Public C&L Inventory
- Video tutorial
- Table of harmonised entries in Annex VI to CLP
- Registered substances
- Legal notice

Notifications submitted/updated by: 29 April 2016

CL Inventory

Showing 1 - 50 of 123,260 results. Items per Page 50 Page 1 of 2,466 |< First < Previous Next > Last >|

Name	EC no.	CAS no.	Index no.	
hydrogen	215-605-7	1333-74-0	001-001-00-9	
aluminium lithium hydride	240-877-9	16853-85-3	001-002-00-4	
sodium hydride	231-587-3	7646-69-7	001-003-00-X	

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The section on chemicals subject to PIC includes all chemicals listed in the relevant annexes of the PIC Regulation. Chemicals listed in Part 1 of Annex I are subject to the export notification procedure; chemicals listed in Part 2 of Annex I, in addition to being subject to export notification procedure, qualify also for the PIC notification procedure. Chemicals listed in Part 3 of Annex I, are subject to the full PIC procedure under the Rotterdam Convention.

Annex V lists the chemicals and articles the use of which is prohibited in the European Union and which shall not be exported. Chemicals and articles listed in Part 1 of Annex V are subject to export ban and belong to the category of persistent organic pollutants; Part 2 of Annex V lists chemicals and articles subject to export ban other than persistent organic pollutants.

In addition, other chemicals have been identified that are also subject to the PIC Regulation, as they are members of chemical groups which are explicitly listed in Annex I or V. These chemicals, which are not themselves explicitly listed in a PIC Regulation Annex, are shown in italics.

It is possible to search for chemicals based on the Annex and part of the Annex they are listed under, EC and CAS number, chemical name and use category. It is also possible to refine the query by using multiple search filters.

› Annex V Part 2

Source

- ☐ Annex I
  - ☐ Annex I Part 1
  - ☐ Annex I Part 2
  - ☐ Annex I Part 3
- ☐ Annex V
  - ☐ Annex V Part 1

Use Category

- ☐ Industrial Chemical
- ☐ Severely Hazardous Formulation
- ☐ Pesticide

Use Limitation

Select...

n-chemicals

Information on Chemicals -...

Search for Chemicals

Advanced search

I have read and I accept the legal notice

REACH

- Registered substances
- Annex III inventory
- Pre-registered substances
- EC Inventory
- Dossier Evaluation decisions
- Testing Proposals Consultation
- Substance Evaluation - CoRAP
- Information on Candidate List substances in articles

See also under the *Addressing Chemicals of Concern* section

- Candidate List of Substances of Very High Concern for Authorisation
- Substances requiring Authorisation
- Substances restricted under REACH
- Public Activities Coordination Tool (PACT)

CLP

- C&L Inventory
- Table of harmonised entries in Annex VI to CLP

BPR

- Biocidal Active Substances
- Biocidal Products
- List of active substance and suppliers

PIC

- Chemicals subject to PIC
- Export notifications
- Import notifications
- Explicit consent and waivers

Information from previous chemicals legislation

- Risk Assessment Reports performed under the Council Regulation (EEC) No 793/93 (Existing Substance Regulation (ESR))
- Annex XV transitional Reports
- PBT/vPvB assessments under the previous EU chemicals legislation

Candidate List of substances of very high concern for Authorisation

(published in accordance with Article 59(10) of the REACH Regulation)

Notes:

- **Authentic version:** Only the Candidate List published on this website is deemed authentic. Companies may have immediate legal obligations following the inclusion of a substance in the Candidate List on this website including in particular Articles 7, 31 and 33 of the REACH Regulation.
- ***Other numerical identifiers***: For those entries with "-" in the EC number and CAS number columns, a non-exhaustive inventory of EC and/or CAS Registry numbers describing substances or groups of substances considered to fall within the scope of the Candidate List entry is included, where practicably possible. This information can be accessed through the "Details" button of the selected entry.

Further information

- More information about Candidate list of Substances of Very High Concern for Authorisation
- Data on Candidate List substances in articles

Filter the list

Showing 1 - 50 of 168 results. Items per Page 50 Page 1 of 4 |< First < Previous Next > Last >|

Name (expand / collapse)	EC no.	CAS no.	Date of inclusion	Reason for inclusion	Decision	IUCLID dataset	
1,3-propanesultone	214-317-9	1120-71-4	17/12/2015	Carcinogenic (Article 57a)	ED/79/2015		
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	3864-99-1	17/12/2015	vPvB (Article 57 e)	ED/79/2015		
2-(2H-benzotriazol-2-yl)-4-(tert-butyl) -6-(sec-butyl)phenol (UV-350)	253-037-1	36437-37-3	17/12/2015	vPvB (Article 57 e)	ED/79/2015		
Nitrobenzene	202-716-0	98-95-3	17/12/2015	Toxic for reproduction (Article 57c)	ED/79/2015		
Perfluorononan-1-oic-acid and its sodium and ammonium salts Ammonium salts of perfluorononan-1-oic-acid EC no.: - | CAS no.: -, 4149-60-4	-	-	17/12/2015	Toxic for reproduction (Article 57c) PBT (Article 57 d)	ED/79/2015		

Further information

More information about REACH and CLP, how it works and available tools can be found on the website of the European Chemicals Agency in the Classification section at:

http://echa.europa.eu

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

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

Inter-Organization Programme for the Sound Management of Chemicals

IOMC Toolbox for Decision Making in Chemicals Management

IOMC toolbox home

IOMC toolbox home

http://iomctoolbox.oecd.org/default.aspx?idExec=bc9a7fec-150b-4513-aaab-d671bf99aa74

Next Step

- Gap analysis

Welcome to the IOMC Toolbox for Decision Making In Chemicals Management

The IOMC Internet based Toolbox for Decision-Making in Chemicals Management (IOMC Toolbox) is aimed at countries who wish to address specific national issues regarding chemicals management.

The IOMC Toolbox is a problem-solving tool that enables countries to identify the most appropriate and efficient national actions to address specific national problems related to chemicals management.

The toolbox identifies the available IOMC resources that will help the country address the identified national problem(s) or objectives. Special focus is given to identifying simple cost-effective solutions to national chemicals management issues.

Please use the left-hand buttons to proceed.

Note: The development of this Toolbox is a work in progress. Only a limited number of issues related to chemicals management are addressed in this version. Future updates will expand the scope of the Toolbox.

More information

- What's New?
- Acknowledgement
- IOMC Toolbox Flyer
- Video tutorial
- Introductory video

IOMC toolbox home

IOMC toolbox home

xt Step

Gap analysis

– \Welcome to the IOMC Toolbox for Decision Making In Chemicals Management

What's New?

The proof-of-concept version of the IOMC Toolbox was launched at the 3rd International Conference on Chemicals Management in September 2012. Initially, it focused on 3 management schemes:

- *A national management scheme for pesticides*,
- *An occupational health and safety system* and
- *A chemical accidents prevention, preparedness, and response system for major hazards*.

New management schemes

In May 2015, a new version of the IOMC toolbox was launched with three new schemes :

- *An industrial chemicals management system*,
- *A classification and labeling system* and
- *A system to support health authorities which have a role in the public health management of chemicals*.

A seventh management scheme on *Pollutant release and transfer registers* is still being developped and should be published during summer 2015.

New functionalities

In addition, the new version of the IOMC Toolbox provides a set of interactive features allowing governments to use it as a platform for collaboration among ministries, agencies, and other stakeholders such as industry. Users can save their information, add comments, and share and discuss issues with colleagues and partners.

Tuesday, May 19, 2015

Thank you!

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