



HBM4EU Launch event

8 December 2016
Brussels

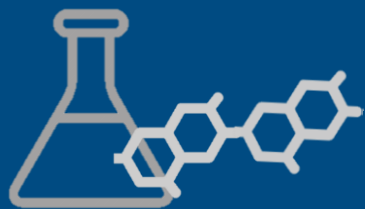


Key features from the HBM4EU
Data management and infrastructure for HBM4EU

Maria Pilar Aguar Fernandez.
JRC-F2. Consumer Products Safety Unit

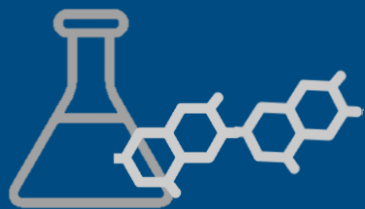
Alessandro Annoni.
JRC-B6. Digital Economy Unit

European Commission, Joint Research Centre



Chemicals are everywhere...Although many of these serve our general well-being, some are toxic and can harm our health and severely damage the environment





In the EU we have already a number of important policies and tools to ensure a higher level of protection of citizens' health and the environment against hazardous chemicals

REACH



CLP



PLANT PROTECTION PRODUCTS REGULATION



PERSISTANT ORGANIC POLLUTANTS (POPS)

WATER FRAMEWORK DIRECTIVE

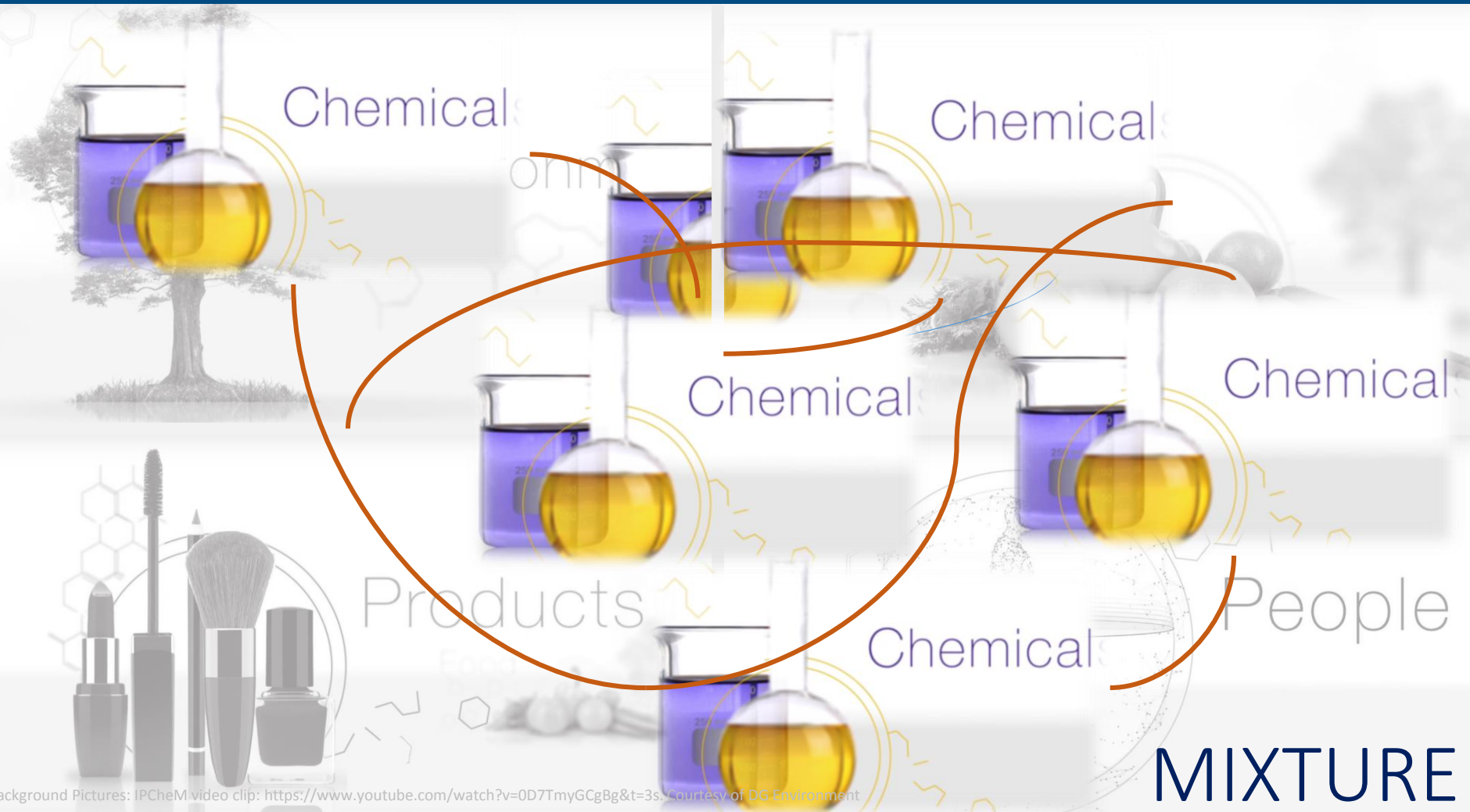
ENDOCRINE DISRUPTORS

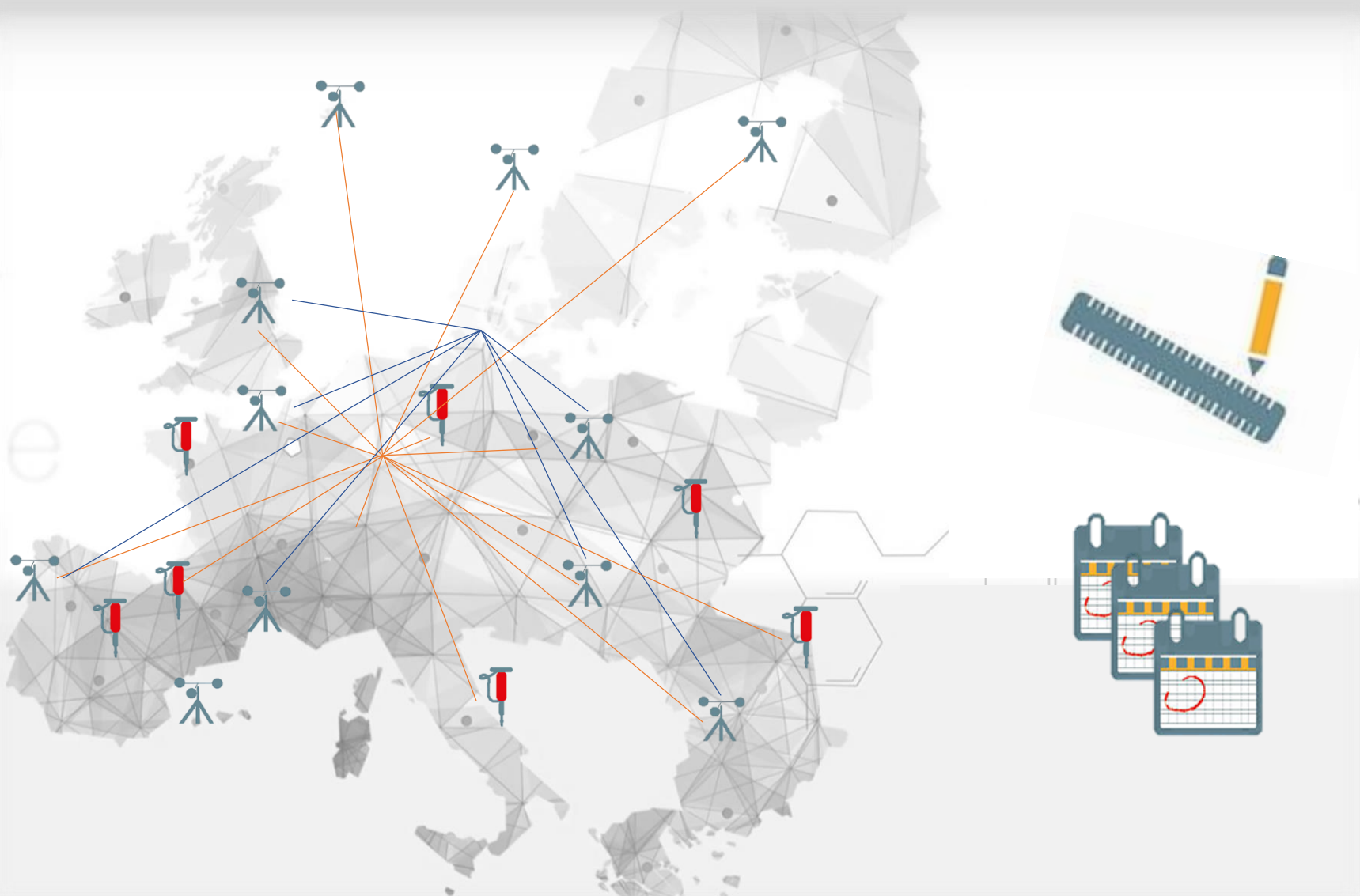
BIOCIDAL PRODUCTS REGULATION

Products

People

There is an increasing concern about the potential adverse effects of the interactions between substances when present simultaneously in a mixture





Background Picture: IPChem video clip: <https://www.youtube.com/watch?v=0D7TmyGCgBg&t=3s>. Courtesy of DG Environment

Monitoring and reporting activities required to MS for the implementations of these Policies are not always used to the fullest possible extent or used very late



Background picture from: <http://wopico.blogspot.it/2008/09/messaggio.html> CC BY 4.0

Data and information are scattered across a multitude of disconnected systems, repositories, databases...

EU EXECUTIVE AGENCIES
DATA POLICIES

DATA OWNER-PROVIDER
LICENSING CONDITIONS

COMMISSION SERVICES
DATA POLICIES

OPEN DATA PRINCIPLES

JRC
DATA POLICY

DATA
PROTECTION
REGULATION

INTELLECTUAL PROPERTY
RIGHTS

DIFFERENT
DATA CUSTODIANS



CREATIVE COMMON LICENSES

RESEARCH PROJECTS
GRANT AGREEMENTS

Background Picture: IPCheM video clip: <https://www.youtube.com/watch?v=0D7TmyGCgBg&t=3s>. Courtesy of DG Environment

Policies on data access, use and re-use are heterogeneous and sometimes conflicting
Custodians of data are heterogeneous and have their own licensing conditions

IPChemM One access point, all the information



Background Picture: IPChemM video clip: <https://www.youtube.com/watch?v=0D7TmyGCgBg&t=3s>. Courtesy of DG Environment

IPChemM - the Information Platform for Chemical Monitoring is the European Commission effort and response to these issues

COLLABORATION



Background picture from: <http://www.centroscansetti.unito.it/index.php/partners> CC-BY 3.0

IPChem is a big collaborative project implemented with the contribution of different DGs, European Agencies, Government Agencies in the Member States and Research Consortia





Information Platform for Chemical Monitoring data

Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPChem

[Menu](#) [Help](#) [Log in](#) [Search](#) [Shopping cart](#) [Globe](#)

[Login](#) [IPChem](#)

IPChem - the Information Platform for Chemical Monitoring is a single access point for discovering chemical monitoring data collections managed and available to European Commission bodies, Member States, international and national organisations and researchers.

The Platform aims to support a more coordinated approach for collecting, storing, accessing and assessing data related to the occurrence of chemicals and chemical mixtures, in relation to humans and the environment. *"This would help identify links between exposure and epidemiological data in order to explore potential biological effects and lead to improved health outcomes"* [EC Communication "The combination effects of chemicals – Chemical mixtures" (COM/2012/0252 final)].

IPChem is designed and implemented as de-centralised system, providing remote access to existing information systems and data providers.

[Show more >>](#)

[Search Chemical Monitoring Data](#)

4 Modules

IPChem allows to search and access data related to






Human Biomonitoring Data

Environmental Monitoring Data

Food and Food Monitoring Data

Product and Indoor Air Data

Launch event of the European Human Biomonitoring Initiative HBM4EU

8 December 2016 in Brussels

Under the auspices of the Slovak Presidency organised by the European Commission DG Research and Innovation and DG Environment

To register click [HERE](#)

For information on the conference and the HBM4EU initiative click [HERE](#)

Who is participating?

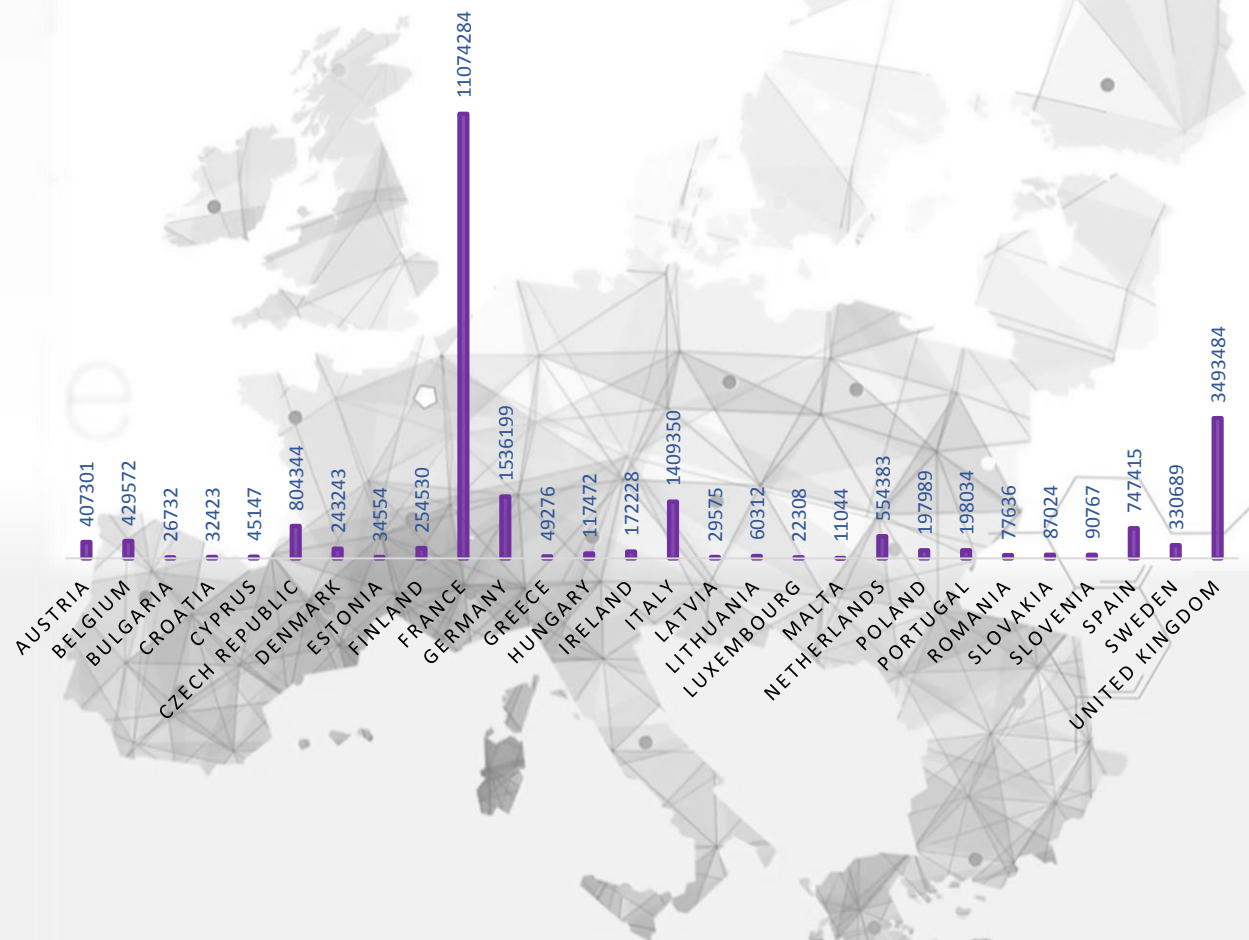
- Directorate-General for the Environment (DG ENV)
- Directorate General for Health and Food Safety (DG SANTE)
- Joint Research Centre (JRC)
- European Environment Agency (EEA)
- European Food Safety Authority (EFSA)
- Federal Environment Agency of Germany (UBA)
- Flemish Centre of Expertise on Environment and Health, Belgium
- IRSA-National Research Council (CNR), Italy
- International Center for Research and Research Training in Endocrine Disruption of Male Reproduction and Child Health (EDMaRC), Denmark
- DEMOCOPHES partners
- OFFICAIR partners

3/3 IPChem: solving the chemical puzzle - Data sh...



<https://ipchem.jrc.ec.europa.eu>

Concentrations measurements in IPChEM- EU28



22.537.315

CONCENTRATION MEASUREMENTS

1.600

SUBSTANCES AND COMPOUNDS

4

THEMATIC MODULES

21

DATA COLLECTIONS

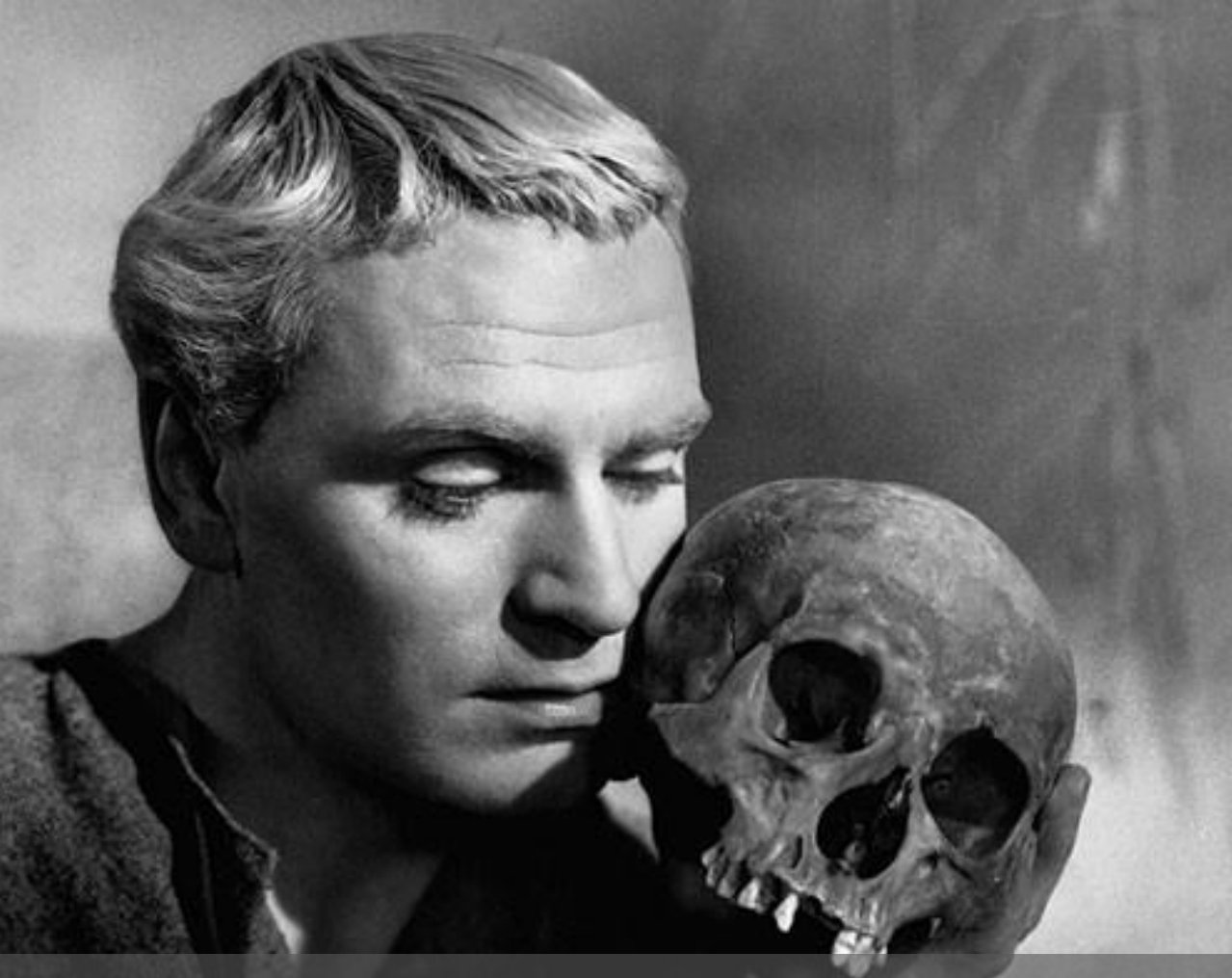
5

ABOUT HUMAN BIOMONITORING

Background Picture: IPChEM video clip: <https://www.youtube.com/watch?v=0D7TmyGCgBg&t=3s>. Courtesy of DG Environment

IPChEM already makes available data of several EU bodies, Government Agencies and Research Consortia and Centres, measured in different media





TO SHARE OR NOT TO SHARE, THAT IS THE QUESTION!

Background picture from: <https://thevalkyriesvigil.com/>CC-BY 2.0

IPChem promotes a data sharing philosophy

There are many diverse opportunities and benefits from sharing data and information

INTEROPERABLE APPROACH



IPChEM addresses interoperability in a pragmatic way.
In existing best practices, no additional burden on data management are requested to the partners

UNIQUE SEARCH POINT

The screenshot displays the IPCheM (Information Platform for Chemical Monitoring data) web interface. The header includes the European Commission logo and the title "Information Platform for Chemical Monitoring data". Below the header, there is a navigation bar with icons for home, help, search, shopping cart, and globe. The main search area features a "Search Chemical:" input field with "cadmium" entered, and a "by CAS" input field. To the right, there is a "Country (optional):" section with a "Select Country List" button and a map of Europe. Below the search fields, there is a "Refine by module and media (optional)" section with four icons representing different media types. The search results section shows "displaying 1 to 10 out of 10 results" and a list of results. The first result is for "AIRBASE - European air quality database" with a "Data Access: Public" status. The result details include "Chemical Name: cadmium", "CAS Number: 7440-43-9", and "Media: Atmosphere (Outdoor Air), Atmosphere (Other)".

Information Platform for Chemical Monitoring data
Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPCheM

Search Chemical: cadmium
by CAS

Refine by module and media (optional)

Country (optional):
Select Country List

displaying 1 to 10 out of 10 results
< 1 >

AIRBASE - European air quality database
European Environment Agency (EEA) Metadata Info
Data Access: Public
Environmental

Chemical Name: cadmium CAS Number: 7440-43-9 Media: Atmosphere (Outdoor Air), Atmosphere (Other)

In IPCheM data are easily searchable by substance name or CAS number, by Country and by Media in which the substance is measured

MULTIPLE INFORMATION

Information Platform for Chemical Monitoring data
Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPCHEM

Country Coverage

Human Biomonitoring Data Module

DEMOCOPHES - DEMONstration of a study to COordinate and Perform Human biomonitoring on a European Scale

Level of aggregation: Aggregated data
Data accessibility: Public

General info | Related resources

show country names

Data collection starting date
2011/09/01

Data collection end date
2012/04/24

Frequency
Irregular

Responsible organisation
DEMOCOPHES partners

Point of Contact
Greet Schoeters

Other contributors

- FLSP Health, Food safety and Environment, Brussels, Belgium;
- Federal Office of Public Health, Bern, Switzerland;
- State General Laboratory, Nicosia, Cyprus;
- National Institute of Public Health, Praha, Czech Republic;
- Universitetsbureauet (UBA), Berlin, Germany;
- University of Copenhagen, Copenhagen, Denmark;
- Instituto de Salud Carlos III, Madrid, Spain;
- National Institute of Environmental Health, Budapest, Hungary;
- Health Services Executive, Dublin, Ireland;
- Luxembourg Institute of Science and Technology (LIST), Belvaux, Luxembourg;
- Nofre Institute of Occupational Medicine, Lodz, Poland;
- Faculdade de Medicina de Lisboa - Instituto de Medicina Preventiva, Lisbon, Portugal;
- Environmental Health Center, Chiklissok

In 17 European countries, we measured mercury in hair and cotinine, phthalate metabolites, and cadmium in urine of 1,844 children (5-11 years of age) and their mothers. Specimens were collected over a 5-month period in 2011-2012. We obtained information on personal characteristics, environment, and lifestyle. We used the resulting database to compare concentrations of exposure biomarkers within Eu ...[show more](#)

Monitoring Reasons
To harmonize HBM in Europe to allow comparison of data among countries and provide tools for follow-up of temporal and spatial trends in chemical exposures.

Sampling Methods
The cross-sectional survey was designed to include 120 children (5-11 years of age) and their mothers in each country, with 60 mother-child pairs each in Cyprus and Luxembourg because of the countries' smaller populations. Children and mothers were sampled between September 2011 and February 2012, either through schools or population registries. These were convenience samples with equal shares in ...[show more](#)

Analytical Methods
See the linked resources

Chemicals [Hide](#)

Chemical name	CAS	media	unit of measure
cadmium	7440-43-9	Human (Urine)	µg/L
cadmium	7440-43-9	Human (Urine)	µg/g crt
cotinine	486-56-6	Human (Urine)	µg/L
cotinine	486-56-6	Human (Urine)	µg/g crt

Information Platform for Chemical Monitoring data
Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPCHEM

DEMOCOPHES Data Access: Public

DEMONstration of a study to COordinate and Perform human biomonitoring on a European Scale

Country

Target Population

Sampling Matrix
urine

You are searching:
Chemical name : cadmium
CAS : 7440-43-9
Media : none
Country : Belgium, Germany, Netherlands

Filter by concentration range:
0.039 µg/g crt 0.224 µg/L

Exclude Non-Detects:
LOD LOQ none

Show sample sites by page Show all sample sites

Pick Row(s) or Request Full Table Request Full Table

Go to page: 1 Page size: 10 Showing 1-4 of 4

Location	Sample Source	Sampling Date	Conc. Value	Unit of Measure	LOD	LOQ	Media / Setting	Level of Aggregation
Country: Belgium Position: representative	Code: BEL	start: 2011/09/01 end: 2012/04/24	0.224 (0.197-0.255)	µg/L		0.01	Media: Human (Urine) Sampling Matrix: urine	Statistic Name: Geometric Mean Number of Samples: 125 Samples Below LOQ: 0.80%
Country: Belgium Position: representative	Code: BEL	start: 2011/09/01 end: 2012/04/24	0.194 (0.171-0.219)	µg/g crt		0.01	Media: Human (Urine) Sampling Matrix: urine	Statistic Name: Geometric Mean Number of Samples: 125 Samples Below LOQ: 0.80%

displaying 1 to 10 out of 10 results

Media: Atmosphere (Outdoor Air), Atmosphere (Other)

As result it is possible to open the background information of a Monitoring Programme, and also to access the concentration measurement values

CONTRIBUTORS

USER GROUPS

COMMISSION SERVICES

DATA OWNERS/PROVIDERS

IPChem DATA POLICY

promotes

OPEN DATA PRINCIPLES

respects

DATA PROTECTION REGULATION

European Commission Services and EU Agencies

EU National Bodies

EU Member States Competent Authorities, including Competent Authorities in Countries from the European Free Trade Area and EU Candidate Countries.

General Public

Including Industry, Scientific Communities, International and Non-Governmental Organisations

IPChem Data Policy promotes the Open Data Principles while respecting the EU and national legal frameworks as well as the licensing conditions defined by the data owners/providers

DATA GRANULARITY

Information Platform for Chemical Monitoring data
Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPCHeM

Login

FLEHS Data Access: Public
Flemish Environment and Health Study

Show sample sites by page Show all sample sites

Pick Row(s) or Request Full Table

Go to page: 1 Page size: 10

Location	Sample Source	Sampling Date	Conc. Value	Unit of Measure	LOD	LOQ
Country: Belgium Position: representative	Code: Rural area	start: 2002/01 end: 2004/01	0.499 ±0.589	µg/L	0.09	

Non-Detects representation:
<LOD indicates a Conc.Value lower than the limit of detection, also used when 'zero' or 'nd'.

Information Platform for Chemical Monitoring data
Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPCHeM

ESB-UBA Data Access: Public
Environmental Specimen Bank of Germany

Show sample sites by page Show all sample sites

Pick Row(s) or Request Full Table

Go to page: 1 Page size: 10

Location	Sample Source	Sampling Date	Conc. Value	Unit of Measure	LOD	LOQ
Country: Germany Name: Münster Position: representative	Code: 10104	2006	1.021 ±5.4766	µg/l		

Information Platform for Chemical Monitoring data
Enhancing access to chemical data

EUROPEAN COMMISSION > EU Science Hub > IPCHeM

BIOSOIL User Rights: Restricted Owner

Soil Layer: M01: Mineral 0 to 10 cm
Chemical Speciation: Extractable

You are searching:
Chemical name: cadmium
CAS: 7440-43-9
Media: none
Country: France, Germany, Belgium

Filter by concentration range:
0.02 mg/kg 4.9 mg/kg

Exclude Non-Detects:
LOD LOQ none

Show sample sites by page Show all sample sites Show sample sites by location

Pick Row(s) or Request Full Table

Go to page: 1 Page size: 10

Showing 1-10 of 756

Location	Sample Source	Sampling Date	Conc. Value	Unit of Measure	LOD	LOQ	Media/Setting	Level of Aggregation
Country: France Position: exact	Code: 96895	2006	4.9	mg/kg	0.152	0.5	Media: Soil (Topsoil) Soil Layer: M01: Mineral 0 to 10 cm	single measurement
Country: France Position:	Code: 97012	2006	3.2	mg/kg	0.152	0.5	Media: Soil (Topsoil) Soil Layer:	single measurement
Country: Germany Name: Münster Position: representative	Code: 10104	2006	1.021 ±5.4766	µg/l			Media: Human (Blood) Specimen Name: Students (Whole blood)	Arithmetic Mean Aggregation Period: year Number of Samples: 106

As implementation of its Data Policy, IPCHeM offers different options in terms of data granularity to various user groups

COMPARATIVE ANALYSIS













TOPSOIL
TOPSOIL

SURFACE WATER
SURFACE WATER

WHOLE BLOOD
WHOLE BLOOD

WASTE (TREATED BIOWASTE)
WASTE (TREATED BIOWASTE)

Query results

Database	Chemical name	CAS	Country	Media	Actions
Environmental Specimen Bank of Germany	cadmium	7440-43-9	Germany	Human (Blood)	<input checked="" type="checkbox"/>   
Biosoil Data	cadmium	7440-43-9	Germany	Soil (Topsoil)	<input checked="" type="checkbox"/>   
JRC FATE Monitoring Database on Occurrence and Levels of Chemical Contaminants	cadmium	7440-43-9	Germany	Waste (Treated Biowaste)	<input checked="" type="checkbox"/>   
Waterbase - Rivers (hazardous substances)	cadmium	7440-43-9	Germany	Water (Surface Water)	<input checked="" type="checkbox"/>   

IPChem allows spatial and temporal comparative analysis across media



Background Picture: IPChem video clip: <https://www.youtube.com/watch?v=0D7TmyGCgBg&t=3s>. Courtesy of DG Environment

Develop a more modern, efficient and effective way of organising and making available data, information and knowledge requires the collaboration of all actors involved in data lifecycle

SYNERGIES



We are ready to collaborate for a further development of the IPChEM platform to meet the expectations of the HBM4EU Consortium and the Commission Services involved in the project



IPChEM NOW

NEAR REAL TIME DATA SHARING AND ACCESSIBILITY

COMBINATION AND COMPARISON OF THE HUMAN BIOMONITORING DATA
WITH DATA MEASURED IN OTHER MEDIA

REPOSITORY FOR ORPHAN DATA



IPChEM is already operational and ready to make Human Biomonitoring data accessible and shareable



FUTURE AHEAD

EVOLUTION

TOOLS

DATA VISUALISATION OPTIONS

CUSTOMISATION

HUMAN BIOMONITORING MODULE

BACKGROUND INFORMATION ABOUT HBM MONITORING COLLECTIONS

Background picture from <http://thinkingfutures.net/resources/using-futures-approaches/> CC BY 4.0

We will be all involved in enhancing the IPChEM platform. The options for the improvement of the current release will be defined, planned and implemented in collaboration with the HBM4EU data management work package



FUTURE AHEAD

THANK YOU

Background picture from <http://thinkingfutures.net/resources/using-futures-approaches/> CC BY 4.0

We look forward in working together and in joining our efforts for the years to come and share the data needed to protect our health and environment