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European Commission

Information Platform for Chemical Monitoring (IPCHEM)- *Quotations, Recognition, Impact*

Traceability of IPCHEM's support to policies and scientific communities at EU and International levels

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Background and objectives

IPCHEM (*Information Platform for Chemical Monitoring*) is the EC's **one access point** that supports a more coordinated approach for ***searching***, ***accessing***, ***retrieving, assessing*** and ***sharing*** **chemical occurrence data** across various media (e.g. environment, humans, food/feed, indoor air and consumer products) (https://ipchem.jrc.ec.europa.eu/).

IPCHEM was developed to fill in the knowledge gap on chemical exposure and its burden on health and the environment, as identified in the:

- ✓ European Commission Communication on "The combination effects of chemicals – Chemical mixtures" (COM/2012/0252 final) in which is recognised the need for "*Promoting a more coherent approach to the generation, collection, storage and use of chemical monitoring data in relation to humans and the environment, through the creation of a platform for chemical monitoring data*".
- ✓ 7th Environment Action Programme (2014-2020), priority objective 5: "*To improve the knowledge and evidence base for Union environment policy*".

IPCHEM has been designed and implemented as de-centralised system, providing remote access to existing information systems and data providers. European Commission services (DGs ENV, SANTE, JRC, RTD), European Agencies (EFSA, EEA, ECHA) and EU MS are actively involved in IPCHEM's development and data population.

IPCHEM is well consolidated as the European Commission's one access point for searching, accessing and retrieving chemical occurrence data across various media (e.g. environment, humans, food/feed, indoor air and consumer products). It contains already a wealth of data thanks to the contributions of several EU bodies, government agencies and research centres: more than 256 million of chemical concentration measurements data are accessible, retrievable and downloadable today via IPCHEM.

IPCHEM's Data Policy and Governance model represent excellent paradigms which have been referenced in the context of the European Commission's Environmental Knowledge Community (EKC) projects and activities and are quoted in numerous policy related documents at EU and international levels. IPCHEM data is used to inform policy decisions at EU or Member States levels which denotes a clear case of traceable usefulness and impact in the policy cycle.

This document represents a collection of quotations made, recognition achieved and impact on policies at EU and international level related to the European Commission's Information Platform for Chemical Monitoring Data (IPCHEM).

The quotations, recognition and impact are categorised into the following categories:

1. IPCHEM QUOTATIONS IN POLICY DOCUMENTS AT EU AND INTERNATIONAL LEVEL
2. IPCHEM DATA SUPPORTING EU AND INTERNATIONAL POLICIES
3. IPCHEM REFERENCED IN MISCELLANEOUS PUBLICATIONS
4. JRC AWARDS FOR EXCELLENCE
5. IPCHEM DATA INTEGRATION STATISTICS
6. IPCHEM DATA PROVIDERS
7. AGREEMENTS WITH INTERNATIONAL ORGANISATIONS, EU PROJECTS AND NETWORKS FOR DATA PROVISION AND LINKS TO IPCHEM

This document covers the achievements in the period from January 2014 to September 2019.

1. IPCHEM QUOTATIONS IN POLICY DOCUMENTS AT EU AND INTERNATIONAL LEVEL

2019

June 2019

Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants (recast) (Text with EEA relevance.)

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1021&from=en

Recital (23)

In order to promote the development of a comprehensive chemical exposure and toxicity knowledge base, in line with the General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' ('the 7th EAP') (18), the Commission has established the ***Information Platform for Chemical Monitoring.*** *The use of that platform should be encouraged as a means for Member States to comply with their obligations to report chemical occurrence data and to simplify and reduce their reporting obligations.*

Article 8 Tasks of the Agency and the Forum

1. g) compile, register, process and make available to the Commission and the competent authorities of the Member States all the information received or available pursuant to Article 4(2) and (3), point (b)(iv) of Article 7(4), Article 9(2) and Article 13(1). Where such information is non-confidential, the Agency shall make that information publicly available on its website and shall facilitate the exchange of that information with relevant ***information platforms*** *such as those referred to in Article 13(2);*

Article 13 Monitoring of implementation

2. Where a Member State shares the information referred to in point (e) of paragraph 1 with the ***Information Platform for Chemical Monitoring****, this shall be indicated by that Member State in its report and the Member State shall be considered to have fulfilled its reporting obligations under that point.*

Where the information referred to in point (e) of paragraph 1 is contained in the report of a Member State provided to the Agency, the Agency shall use the ***Information Platform for Chemical Monitoring*** *for compiling, storing and sharing that information.*

June 2019

EU Council Conclusions: Towards a Sustainable Chemicals Policy Strategy of the Union - Council conclusions [Council of the European Union 10713/19, Brussels, 26 June 2019]

http://data.consilium.europa.eu/doc/document/ST-10713-2019-INIT/en/pdf

In the Council Conclusions "Towards a Sustainable Chemicals Policy Strategy of the Union" in point 5 it is stated that the Council:

*"ACKNOWLEDGES the research programme on human biomonitoring HBM4EU at the interface of science and European chemicals policy, as well as the **IPCheM initiative (Information Platform for Chemicals Monitoring)** and ENCOURAGES a similar research programme on environmental monitoring as well as the improved sharing and use of local, regional, national and EU-level monitoring data both between countries but also between policy areas (e.g. water, chemicals, air, biomonitoring, health, etc.) and relevant institutions; WELCOMES the progress achieved so far in combining and further developing European human biomonitoring activities; REQUESTS the Commission to ensure that these activities can be continued under the new Horizon Europe programme; INVITES Member States and the Commission to stimulate the development of appropriate infrastructure to fully enable that data is Findable, Accessible, Interoperable and Reusable (FAIR) in order to stimulate its reuse and prevent unnecessary duplication;"*

June 2019

Commission Staff Working Document FITNESS CHECK of the most relevant chemicals legislation (excluding REACH), as well as related aspects of legislation applied to downstream industries

SWD/2019/199 final

https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1571905307975&uri=CELEX:52019SC0199

Part 1, page 111

*"The EU efforts in collecting human health exposure data need to be pursued. More data on hazardous chemical uses and their fate need to be collected. So far the Commission has funded the European Human Biomonitoring Initiative (HBM4EU). However, a similar initiative for animals, plants and eco-systems is currently lacking although the Commission's development of the **Information Platform for Chemical Monitoring (IPCHEM)** can contribute to addressing this gap."*

***Part 3, page 229** - D. Data access and sharing*

*"Data sharing between different legal clusters and, therefore, between Member States competent authorities, the Commission services and EU agencies is an important factor that influences the effectiveness of the EU chemicals legislation. As the information used in risk assessments is held in a variety of databases across the EU with no centralised access point, part of this issue relates to awareness of what data is available where. For chemical occurrence data generated as a result of chemical monitoring activities, this has recently started to be addressed by the **Information Platform for Chemical Monitoring data (IPCHEM). IPCHEM** provides a single access point to chemical occurrence data held by all Commission services and EU Agencies and also by Member States and scientists and could become an important information source provided that **IPCHEM** continues to be populated with the data. For hazard data, the problem continues to exist."*

March 2019

European Union Strategic Approach to Pharmaceuticals in the Environment

[COM(2019) 128 final]

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019DC0128&from=EN

In the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the European Union Strategic Approach to Pharmaceuticals in the Environment under section 5.5 on 'Expand environmental monitoring', among others, it is stated that the Commission will:

"*Explore with stakeholders, including water treatment companies/authorities, the gathering of relevant data in effluents from potential hotspots; the development of online monitoring, and the sharing of data via the Information Platform for Chemical Monitoring* ***(IPCHEM)****, to inform analyses of sources and potential exposure.*"

2018

April 2018

European Parliament resolution of 17 April 2018 on the implementation of the 7th Environment Action Programme (2017/2030(INI))

http://www.europarl.europa.eu/doceo/document/TA-8-2018-0100_EN.pdf

IPCHEM is mentioned under point 11 of the section 'Main Conclusions' among the initiatives which will contribute to reducing knowledge gaps hindering policy development and monitoring related to ecosystems and human health and well-being.

"*Welcomes existing initiatives which contribute to reducing knowledge gaps, including: the 'Driving Force –Pressure –State –Exposure –Effects –Action' (DPSEEA) model for understanding the drivers which disrupt ecosystem services; 'human biomonitoring' (HBM) for estimating exposure of human populations to contaminants and the possible health effects thereof; and the* ***'Information Platform for Chemical Monitoring' (IPCheM)****.*"

March 2018

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE (COM(2018) 116 final)

Commission General Report on the operation of REACH and review of certain elements: Conclusions and Actions

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0116&from=EN

Under Section 2.3 'Action by Member States and the Commission' is mentioned:

"*Information needs for nanomaterials are currently being addressed by proposed amendments to the REACH Annexes. Furthermore, the Commission supports research into development of alternative methods and promotes the use of human biomonitoring in chemical risk and management through initiatives such as the European Human Biomonitoring Initiative and the* ***Information Platform for Chemical Monitoring****.*"

2017

September 2017

IPCHEM was included among the twenty EU Voluntary Commitments submitted to the 3rd UN Environmental Assembly (UNEA 3) 'Towards a Pollution-Free Planet' (18/9/2017).

This represents a number of significant commitments that showcase EU leadership and which are expected to have high impact to prevent or reduce pollution in the EU or beyond.

https://wedocs.unep.org/bitstream/handle/20.500.11822/22207/eu_voluntary_commitments.pdf?sequence=1&isAllowed=y

http://web.unep.org/environmentassembly//

https://papersmart.unon.org/resolution/index

"The EU is committed to provide global access to chemical occurrence data, covering past and future monitoring to facilitate taking policy decisions and implementation actions to protect human health and the environment. Therefore, the EU is developing ***IPCHEM*** *(https://ipchem.jrc.ec.europa.eu), a web-based tool and infrastructure that allows policy makers and scientists to search, access, retrieve, assess and share chemical occurrence (chemical monitoring) data across all media (e.g. environment, humans, food & feed, indoor air and consumer products).* ***IPCHEM's*** *purpose is to provide access to users from all over the world to existing and future chemical monitoring data cross-cutting the policy and scientific domains of chemicals, environment and health. It provides access to data that are managed or available to the European Commission Services, Agencies, States, international organisations, national organisations and researchers.* ***IPCHEM*** *provides many benefits, inter alia:*

(1) Facilitates identification of areas of high exposure to chemicals and/or potential sources of pollution, helping prioritising policy action to reduce risks.

(2) Facilitating exposure and risk assessment practices in support of chemical, health and environmental policies including exposure to multiple chemicals from different sources and pathways;

(3) Streamlining a more efficient use of data and lightening reporting obligations.

(4) Ensures that information on chemical monitoring is timely are readily available at one single point in a structured way.

Continuous development of ***IPCHEM*** *will enlarge the amount of data available, improve the functionalities of the platform to better serve the needs of policy making and scientific evaluations and further enlarge geographical scope."*

June 2017

European Commission AMR Action Plan: A European One Health Action Plan against Antimicrobial Resistance (AMR)

https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf

Under Section 2.4 'Better Addressing the Role of the Environment' is mentioned that the Commission will:

"*Maximise the use of data from existing monitoring, e.g. Watch List monitoring under the Water Framework Directive, to improve knowledge of the occurrence and spread of antimicrobials in the environment, including by using the Information Platform for Chemical Monitoring* ***(IPCheM)*** *to access relevant monitoring data.*"

2016

December 2016

EU Council Conclusions on the protection of human health and the environment through the sound management of chemicals

http://data.consilium.europa.eu/doc/document/ST-15046-2016-INIT/en/pdf

On 19.12.2016, the conclusions of the Council of the European Union on the protection of human health and the environment through the sound management of chemicals "*welcomed HBM4EU* and ***IPCheM*** *as good first steps towards developing a comprehensive chemical exposure knowledge base in line with the 7th Environment Action Program (EAP*)."

October 2016

COMMISSION DOCUMENT TRANSMITTED TO THE UN CONFERENCE OF THE PARTIES for the Implementation of the Minamata Convention on Mercury

http://www.mercuryconvention.org/Portals/11/documents/2016%20call%20for%20submissions/EU%20Submission_UNEP%20final.pdf

IPCHEM is referenced in the Commission Document transmitted to the UN Conference of the Parties (COP) for the Implementation of the Minamata Convention on Mercury. The document was sent in response to the Call for submission of information by Governments and others in response to the requests from the seventh session of the intergovernmental negotiating committee to prepare a global legally binding instrument on mercury (INC7). The meeting took place on 28-29 September 2017 in Genève.

In Article 22 on 'Effectiveness evaluation' is mentioned:

"*It is also of primary importance to develop a baseline. The 2013 Global Mercury Assessment and its 2018 update provide a good basis, but further exchange of information is needed to develop the baseline. In this context, a potentially good source of information about the occurrence of mercury across media (humans, environment, food & feed) is the Information Platform for Chemical Monitoring (****IPCHEM****) developed by the European Commission (https://ipchem.jrc.ec.europa.eu).*

IPCHEM *is a decentralised system providing access to existing chemical monitoring data hosted by the Member States, EU agencies and institutions. While the initial scope was restricted to EU/Europe, this is currently being expanded to include OECD data that cover the whole world.*

IPCHEM *could contribute to effectiveness evaluation in two ways:*

- *By providing access to existing monitoring data on mercury across media and thus allowing to build a baseline for later comparison;*
- *It could be made available for storing data generated within or for the purposes of effectiveness evaluation*."

June 2016

COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT

SWD(2016) 211 final

Defining criteria for identifying endocrine disruptors in the context of the implementation of the plant protection products regulation and biocidal products regulation

http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1506347511615&uri=CELEX:52016SC0211

Under Section 7 'HOW WOULD IMPACTS BE MONITORED AND EVALUATED?' IPCHEM is mentioned in relation to data collected under various pieces of legislation, EU initiatives and other sources which could be considered in order to evaluate the impact of the legislation:

"*In addition, the **'Information Platform for Chemical Monitoring' (IPCHEM)** designed and implemented by the European Commission, offers a single access point to chemical monitoring data collections managed by and available to European Commission bodies, MS, international and national organisations and researchers*."

May 2016

COMMISSION STAFF WORKING DOCUMENT - Towards a Fitness Check of EU environmental monitoring and reporting: to ensure effective monitoring, more transparency and focused reporting of EU environment policy

http://ec.europa.eu/environment/legal/reporting/fc_steps_en.htm (WEBSITE)

http://ec.europa.eu/environment/legal/reporting/pdf/SWD_2016_188_en.pdf (PDF)

Under Section 3 'WHAT HAS BEEN ACHIEVED ALREADY AND WHAT IS THE POTENTIAL?' IPCHEM is mentioned among the initiatives that have been taken or are on-going to deliver effective monitoring, more transparency and focused reporting:

"*The **Information Platform for Chemical Monitoring, a good example of the power of a modern information system for effective data sharing in monitoring**. This platform, launched in October 2015, supports a coordinated approach for collecting, storing and assessing data for chemicals and chemical mixtures, in relation to humans and the environment. This results in:*

- *easier accessibility and time savings by being a single access point for the public, businesses, experts and policy makers establishing a direct and tailor-made link to existing and decentralised databases;*
- *an opportunity for integrated assessment of monitoring data combining information from different sources on a variety of environmental media, consumer products, food and from human beings themselves (e.g. through monitoring of chemical concentrations in blood) provides the basis for understanding combined exposure and the effects of chemicals mixtures.*"

March 2016

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the sustainable use of biocides pursuant to Article 18 of Regulation (EU) No 528/2012 of the European Parliament and of the Council concerning the making available on the market and use of biocidal products (COM(2016 151 final)

http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1506346878771&uri=CELEX:52016DC0151

Under Section 2.4 'Risks in specific areas such as schools, workplaces, kindergartens etc.':

"*Regarding the risk to water or groundwater, the study encouraged Member States to utilise information available from other monitoring regimes, such as the monitoring of priority substances and river basin specific pollutants under the Water Framework Directive, which could usefully inform on the specific risks to the water environment from biocidal products. In this context, a watch-list mechanism has been developed to ensure targeted EU-wide monitoring of substances of possible concern (including emerging pollutants) to support the prioritisation process in future reviews of the priority substances list.*

In addition, the ***Information Platform for Chemical Monitoring' (IPCHEM)*** *designed and implemented by the Commission, offers a single access point to chemical monitoring data collections managed by and available to European Commission bodies, Member States, international and national organisations and researchers."*

2. IPCHEM DATA SUPPORTING EU AND INTERNATIONAL POLICIES

2019

September 2019

Agreement between JRC and the Lombardy Energy Cleantech Cluster LE2C Water Energy Nexus - Working Group "Emerging Micro-contaminants"

The agreement is to use IPCHEM as Repository of Environmental Data on Emerging Micro-Pollutants available in Lombardy Region.

March 2019

EFSA Scientific Committee "Guidance on harmonised methodologies for human health, animal health and ecological risk assessment of combined exposure to multiple chemicals"

EFSA Journal 2019; 17(3):5634, 77 pp.

https://doi.org/10.2903/j.efsa.2019.5634

In the section on general recommendations it is stated:

*"Further develop and implement open source curated tools and databases for exposure and hazard assessment of multiple chemicals including production, use, occurrence, consumption data and toxicity (e.g. **IPCHEM**) for risk assessment of combined exposure to multiple chemicals for the human health, animal health and ecological area."*

January 2019

The Future of Data in EFSA (Editorial)

EFSA Journal

Authors: Cappè S., Gilsenan M., O'Dea E., Richardson J., Verloo D.

https://doi.org/10.2903/j.efsa.2019.e17011

In the section "Scientific innovation and new data streams" it is stated:

"*Making data openly available and accessible is a key principle of EFSA. We are actively establishing relationships with partners such as GODAN, **IPCHEM**, ECHA, EMA and European open data portals. 2018 has seen the finalisation of a technical report on the publication of scientific data from EU-coordinated monitoring programmes and surveys. This is the output of a working group composed of member state experts and is an essential step towards publication of open data sets through our curated, open repository for the exchange of evidence and supporting materials used in food and feed safety risk assessments (Knowledge Junction on Zenodo).*"

2018

December 2018

OECD (2018). Considerations for Assessing the Risks of Combined Exposure to Multiple Chemicals

Series on Testing and Assessment No. 296. Environment, Health and Safety Division, Environment Directorate.

https://www.oecd.org/chemicalsafety/risk-assessment/considerations-for-assessing-the-risks-of-combined-exposure-to-multiple-chemicals.pdf

IPCHEM is listed in Annex C. 'Examples of Exposure Data Sources to Inform Co-Exposure Potential':

*"**IPCHEM** the Information Platform for Chemical Monitoring is the European Commission's reference access point chemical occurrence data. **IPCHEM** is structured into four modules: Environmental monitoring, Human Biomonitoring, Food and Feed, Products and Indoor Air."*

October 2018

EURL ECVAM status report on the development, validation and regulatory acceptance of alternative methods and approaches (2018)

JRC Science for Policy Report, EUR 29455 EN

Authors: Zuang V., Dura A., Asturiol Bofill D., Barroso J., Batista Leite S., Belz S., Berggren E., Bernasconi C., Bopp S., Bouhifd M., Bowe G., Campia I., Casati S., Coecke S., Corvi R., Gribaldo L., Grignard E., Halder M., Holloway M., Kienzler A., Landesmann B., Madia F., Milcamps A., Morath S., Munn S., Paini A., Pistollato F., Price A., Prieto Peraita P., Richarz A., Sala Benito J., Wilk-Zasadna I., Wittwehr C., Worth A., Whelan M.

http://publications.jrc.ec.europa.eu/repository/handle/JRC113594

In Section 2.2 "European Research Projects on Chemical Mixtures", it is stated:

"*Several EU funded Horizon2020 and FP7 research projects that are relevant in the context of chemical mixtures are currently ongoing. In 2017, the projects EDC-MixRisk, EuroMix, EU-ToxRisk, HBM4EU, and SOLUTIONS joined forces together with EURL ECVAM, other Commission Services (DG Research and Innovation, DG Environment) and European agencies (EFSA, ECHA, EEA) to organise a joint workshop on "Advancing the Assessment of Chemical Mixtures and their Risks for Human Health and the Environment". […] One of the major gaps continues to be the lack and availability of data. The Information Platform for Chemical Monitoring, **IPCHeM**, is addressing the gap for chemical monitoring data. However, another big challenge remains in the accessibility and quality of data on (eco)toxicological properties and on the types of use of chemicals. […] Another aspect of this collaboration was to discuss the use of the European Commission's Information Platform for Chemical Monitoring (**IPCHeM**) as a tool to provide occurrence data and to facilitate the exposure assessment for multiple chemicals.*

*A dedicated workshop with the above-mentioned project partners, held at JRC Ispra in December 2017, gave the opportunity to present and discuss the most recent enhancements and tools of **IPCHeM**. It*

*was useful to gather requirements for revising and extending **IPCHeM's** functionalities and tools to best meet the needs of users*".

August 2018

Agreement between JRC and Health Canada to integrate Canadian chemical monitoring data into IPCHEM

The agreement was made during the Joint Workshop between Health Canada and JRC on 'Canadian Exposure Data and Linkages to IPCHEM' that took place on 31 August 2018 in Ottawa (Canada).

This denotes expansion of the geographical coverage of IPCHEM data collections on global scale.

The following types of Canadian data systems were explored in terms of their readiness to link to IPCHEM:

- Canadian Outdoor Air Data
- Industry Notified Uses and Volumes
- Canadian biomonitoring data
- Canadian indoor air data including personal air monitoring data
- Canadian soil data
- Canadian food monitoring data
- Canadian drinking water data
- Canadian house dust data

Metadata information for all Health Canada related data collections will be made available and integrated into IPCHEM as a first and immediate step. This could help increasing visibility of existing data collections which then progressively can be integrated and/or linked into IPCHEM based on their readiness status.

June 2018

European Commission's Knowledge Week 'Brokering Knowledge for Policy' (6-8 June 2018): Harvesting Report

JRC Technical Report, JRC112631

Authors: C. Simoneau, S. Bombardone, V. Tarditi, P. Castello, P. Loekkemyhr, M. Sienkiewicz , G. Palmarini, D. Doyle, J. Triebe, F. Ereno, C. Catana, S. Pereira Sa, A. Gerez, B. Kostovska, T. Lange, A.T. Bach, B. Mortara, V. Alberti, M.V. Lecomte, L. Topp, G. Barry, M. Rute, M. Wilikens

Ares(2018)5607277 (restricted access)

https://connected.cnect.cec.eu.int/community/cross-commission-collaboration/ec-knowledge-week/blog/2018/05/24/are-you-a-policy-officer-analyst-these-knowledge-week-sessions-are-for-you

IPCHEM was presented during the discussion of the Piazza Panel debate with scientists, knowledge brokers and policymakers on "Better knowledge for policy – new organisational approaches" (7 June

2018). IPCHEM is mentioned in the following corresponding sections in the JRC Harvest Report of the event:

"*On data and management: ……The next challenge was to ensure a scientific approach to validating the comparability and* ***benchmarking the quality of the data****. Any data must include quality criteria for validation (Example of* ***IPChem****, where a data automatic control producer is now part of the metadata)…….*

……Give ***more value to data*** *by giving more coherence to data sets across different polices. It was underlined that there are missing links where data sets are presented separately, and in this context taking the challenge means stock-taking by a community of users that one would not find if taking the dataset(s) separately. This would increase the usability of data for data that come in different data sets and different populations. A first lever was again back to availability and interoperability of the data. As more agencies are coming in and sharing, a key is to connect data technically across systems, make data available but with quality criteria and uniformly harmonised for users (e.g.* ***IPChem****).*"

April 2018

Review of the 1st Watch List under the Water Framework Directive and recommendations for the 2nd Watch List

JRC Scientific and Technical Research Reports, EUR 29173 EN

Authors: Loos R., Marinov D., Sanseverino I., Napierskaand D., Teresa Lettieri T.

http://publications.jrc.ec.europa.eu/repository/handle/JRC111198

"***IPCHEM*** *has been included among the chemical monitoring data sources on measured environmental concentration of cyanide that were consulted during the review of the 1st Watch List under the Water Framework Directive and recommendations for the 2nd Watch List (see pp. 202-203 of the report)."*

April 2018

Environmental Knowledge Centres (EKC) Data and Information Strategy

Endorsed by the EKC DGs on 20 April 2018

https://webgate.ec.europa.eu/fpfis/wikis/pages/viewpage.action?pageId=245439849&preview=/245439849/268239108/EKC%20data%20and%20information%20strategy_endorsed%20by%20EKC%20DGs%20on%2020%20April%202018.docx

Under the Section 'Strategic Vision' is mentioned:

"*The new arrangement will operate from 2018 onwards on the basis that each EKC partner makes available the environmental data and other data required for EKC business cases (e.g. EKC KIPs and other jointly identified data needs) hosted in its own data centre by inclusion into a complimentary shared data architecture. Also datasets so far not published by an EKC partner but identified necessary for EKC work will be made available and (re-)usable to feed the different EKC information platforms such as the Biodiversity Information System for Europe (BISE), the European Climate Adaptation Platform (Climate ADAPT), the* ***Information Platform for Chemical Monitoring (IPCHEM)****, etc."*

Under the Section 'Future Actions' is mentioned:

"*As agreed during the EKC Directors meeting on Natural Capital on 6 July 2017, a complementary line of work takes place through the set-up of an EKC Task Force on Environmental Information Platforms (EIP). This Task Force will evaluate and enable the interoperability of platforms and catalogues on ecosystem-based initiatives. The EIP Task force met for the first time in December 2017 and produced in March 2018 a scoping paper and a task prioritisation table (See Annex 2). This and other relevant work among the EKC partners (notably on* ***IPCHEM****) will allow developing recommendations for the interoperability and operation of other information systems. Other potential partners (e.g. ECHO, DEVCO, GROW, MARE) are encouraged to join this discussion*."

2017

December 2017

Promoting healthy and energy efficient buildings in the European Union: National implementation of related requirements of the Energy Performance Buildings Directive (2010/31/EU)

JRC Science for Policy Report, EUR 27665 EN

Authors: Kephalopoulos S., Geiss O., Barrero-Moreno J., D'Agostino D., Paci D.

http://publications.jrc.ec.europa.eu/repository/handle/JRC99434

"*It is recommended to set up monitoring campaigns to collect information and data in EU MS on the performances of ventilation systems and the IEQ levels achieved in relation to indoor and outdoor pollution sources, energy sufficiency and energy efficiency measures in the EU building stock. The information and data should be streamlined and made available via the European Commission's relevant data portals and knowledge systems (i.e. the DG JRC's European Energy Efficiency Platform Portal and the DG ENV's* ***IPCHEM*** *module 4 on 'Products and Indoor Air Monitoring' data).*

Buildings that have been included in surveys or other IAQ related projects/studies at EU or national levels, could be exempted from undergoing the periodic audits during that period, if no specific problems were detected provided that the survey data of these studies are streamlined and made available via the recently developed/planned European Commission's relevant data portals and knowledge systems (i.e. DG ENV's ***IPCHEM*** *module 4 on 'Products and Indoor Air Monitoring' data (https://ipchem.jrc.ec.europa.eu/RDSIdiscovery/ipchem/index.html) and the DG JRC's European Energy Efficiency Platform Portal –E3P (http://e3p-beta.jrc.nl/).*

Within the holistic concept and approach of buildings' sustainability, the definition of the boundaries and implementation of the requirements of each of the building related sectorial policies, regulations and standards should be co-ordinated and optimised via an overarching and balanced approach at EU level. Such an approach should fully consider energy, environmental, health and resource efficiency aspects and national characteristics and constraints (economic, social, cultural, climatic).The efficient implementation of such an approach requires rapid and efficient exchange and sharing of relevant information and data concerning the cross-cutting issues of the holistic approach for buildings' sustainability. This could be supported by the standardised infrastructure and common interface for geographical information exchange offered by the INSPIRE Directive and the tools and

*data hubs recently developed by the European Commission relevant to the buildings' energy performance and IAQ (i.e. the European Observatory of the buildings stock, the E3P portal and the **IPCHEM** module 4 'products and indoor air monitoring')."*

June 2017

Formal agreement on integrating the OECD human biomonitoring data into IPCHEM (ENV/JM/EA/M(2017)1/REV1)

The agreement was made during the OECD 1st Working Party Exposure Assessment meeting (13-14 June 2017, Paris). It expands the geographical coverage of IPCHEM data collections on global scale.

"*Item 13. Biomonitoring Database:*

*31. The WPEA exchanged views on the future direction of the project, especially on the database host and access options. Many delegates preferred to use existing public portal site such as **IPCheM** platform for sharing the OECD data collected by this project. The WPEA also suggested that the data should be publicly made accessible provided that the member countries provided their own QA/QC data.*

*32. The WPEA agreed to use **IPCheM** platform for sharing the collected biomonitoring data across OECD countries. The WPEA also requested Canada and JRC to develop a detailed workplan to share data from OECD project to **IPCheM**, taking into account comments received.*"

May 2017

IPCHEM was selected by the JRC DG as one of the eight best-fitting showcases to the EC's DATA4POLICY initiative

https://webgate.ec.europa.eu/connected/groups/big-data-jrc

IPCHEM was considered among the JRC's innovative data-driven approaches for evidence-informed policy making. IPCHEM's data use shows how JRC's work on data can support the EU policy for unravelling the complex issue of combined exposures to multiple chemicals and their effects to humans and the environment.

January 2017

IPCHEM has been established as the official Information System for accessing and sharing both existing and new human biomonitoring data collected during the HBM4EU project (2017-2022)

https://www.hbm4eu.eu/the-project/

"*HBM4EU is a joint effort of 28 countries, the European Environment Agency and the European Commission, co-funded under Horizon 2020. Running from 2017 to 2021, HBM4EU generates knowledge to inform the safe management of chemicals and so protect human health in Europe.*

*Data used and produced under HBM4EU will be made accessible via **IPCHEM** – the Information Platform for Chemical Monitoring. **IPCHEM** is the European Commission's reference access point for searching, accessing and retrieving chemical occurrence data collected and managed in Europe*".

January 2017

Agreement of DG ENV/A.3 with UBA to link the UBA database on "Pharmaceuticals in the Environment" with IPCHEM

ARES(2017)526622, 31/1/2017

https://www.umweltbundesamt.de/en/database-pharmaceuticals-in-the-environment-0

January 2017

Assessment of the effectiveness of reported Water Framework Directive Programmes of Measures - Part II – development of a system of Europe-wide Pressure Indicators

JRC Technical Reports, EUR 28412 EN

Authors: Pistocchi A., Aloe A., Bouraoui F., Grizzetti B., Pastori M., Udias A., Van de Bund W., Vigiak O.

http://publications.jrc.ec.europa.eu/repository/handle/JRC105299

"*The EC DG JRC is using in-house models and other information to build indicators of pressures on water bodies, in the context of the 2nd river basin management plan (RBMP) implementation assessment (Water Framework Directive (WFD) 60/2000/EC, art. 18) and review of the WFD (art. 19). These indicators are meant to provide a picture of major water pressures at the European scale.*

The proposed indicators of chemical pollution pressures are the concentrations of selected substances, compared to the respective environmental quality standards (EQS). Concentrations are computed through a generalization of the GREEN model. Unlike for nutrients, emissions are not assumed to be known in the form of inventories, but estimated with the "riverine load method" described in the CIS Guidance Document n. 28. The method can be applied at European scale provided a consistent dataset of observed riverine loads of chemicals is available. The JRC has started developing estimates for the current list of WFD priority substances using ***IPChem*** *data on observed concentrations. More substances could be included in the future, e.g. selected river basin-specific chemicals or contaminants of emerging concern.*

The data used for the apportionment of loads would also need a quality check procedure. Presently, ***IPChem*** *data will be used in their original form but the results may help also identifying issues with the data.*"

2016

September 2016

JRC Report: Water in Slovakia: Pressures, Status and Outlook (unpublished)

"***IPCheM*** *contains data for around 269 substances (e.g. priority substances and compounds of emerging concern), which have been detected in Slovak surface water (rivers and lakes) or groundwater. A Report on 'Water in Slovakia: Pressures, Status and Outlook' is in preparation jointly*

by the JRC and the Members of the Slovakian Academy of Science (SAK). This will help assessing the status of Slovakian Waters and also addressing future social and economic implications of Water Resources in Slovakia."

April 2016

EU Publications: Study on the Calculation of the Benefits of Chemicals Legislation on Human Health and the Environment

https://publications.europa.eu/en/publication-detail/-/publication/3dcb5c7a-1029-11e6-ba9a-01aa75ed71a1

This study has been commissioned by the European Commission DG Environment in the framework of the Regulatory Fitness Programme (REFIT) for the chemicals policy area. Together with the findings of other studies, its results will inform the general report on the operation of the REACH Regulation and, more in general, of the chemical legislative framework, expected in 2017.

IPCHEM is explicitly mentioned in the Executive Summary and the Chapter A3.6 'List of indicators' of the report as it was identified among the suggested data and information sources to support the development of a system of indicators which can establish and measure the links between chemical substances and their impacts on human health and the environment, and measure the role that chemicals legislation has had in reducing such impacts.

More specifically IPCHEM is suggested among the data sources which support the development of the following indicators: 'Change in levels of selected chemicals in ambient air samples' 'Change in levels of selected chemicals in water and sediment samples'; 'Change in levels of selected chemicals in soil samples'; 'Change in levels of selected chemicals in tissue samples of terrestrial species' and 'Change in levels of selected chemicals in tissue samples of aquatic species';

"*Different biomonitoring programmes have been carried out in the last decades in Europe, on specific substances and populations exposed and with varying geographical scope. Various databases also exist, with public and restricted access. The European Commission is aware of the need to develop an EU-wide human biomonitoring initiative and has set aside €50 million to fund this action. The information generated by this initiative will be of vital importance for the policy-making process in a wide variety of sectors, one of the most important being the EU chemicals legislation.*

The European Commission Joint Research Centre is working on the development of an ***information platform for chemical monitoring*** *data (https://ipchem.jrc.ec.europa.eu) gathering together the available experiences in Europe to enhance access to data on chemicals*."

April 2016

JRC Thematic Report: Science for environmental sustainability

JRC Thematic Report, EUR 27498

Authors: BARRY G., GAFFURI A-L, GONZALEZ VERDESOTO E., WCISLO M., VAN DE BUND W., FIORE G., JONES A., ACHARD F., BELWARD A., MAES J., OSTERMANN O-P., ESPINOSA GODED M., ESTREGUIL C., PANT R., LEIP A., WOLF O., VILLANUEVA KRZYZANIAK A., QUEROL SUQUIA M., ROUDIER S., VAN DEN EEDE G., RUEDA CANTUCHE J., PENNINGTON D., STEEN M., THUNIS P., PISTOCCHI A., BALDASSARRI C., PAFFUMI E., MASCHIO I., PIERS DE RAVESCHOOT R., BERTOLDI P., DOSIO A., VAN DINGENEN R., KITOUS A-G., CISCAR MARTINEZ J-C., DENTENER F., MIOLA A., THIELEN DEL POZO J., VOUSDOUKAS M., ALFIERI L., VOGT J., FORZIERI G., GAWLIK B., MANFREDI S., CRAGLIA M., JANSSENS-MAENHOUT G.

http://publications.jrc.ec.europa.eu/repository/bitstream/JRC98000/kj0115779enn.pdf

"*The Joint Research Centre (JRC), the European Commission's in-house science service, supports EU Member States in implementing environmental policies and participates in international efforts to promote the sustainable use of resources and improve land-use management. This report describes the work of the JRC in support of sustainable development. It shows how its tools, methods, analyses and activities contribute to a better understanding, monitoring and anticipation of the complex interactions between human activity and the natural environment. In this way, the JRC supports the development and implementation of policies that protect the global environment and ensure that strategic resources (water, land, forests, food and minerals) are managed in a more sustainable manner for the benefit of present and future generations, within and outside the EU.*

The JRC has led and contributed to several important guidance documents on the classification of ecological status, intercalibration, ecological flows, the monitoring of chemical substances and environ-mental quality standards. This work has led to legally binding and harmonised environmental objectives for Member States' river basin management plans. The JRC successfully coordinated a European-wide campaign to assess the implementation of existing and innovative biological-based assays for testing the effects of chemical mixtures, the results of which will guide future research on those mixtures posing a risk to aquatic ecosystems even at low concentration. To better assess the scientific value of the information generated on the fate and occurrence of chemical substances, the JRC is promoting an Open Data Sharing Approach by giving access to chemical monitoring data via the Information Platform for Chemical Monitoring Data ***(IpCheM).***"

2015

October 2015

JRC pan-European assessment of pressures on water bodies supporting the implementation of the Water Framework Directive (WFD)

JRC Technical Report, EUR 27465 EN

Authors: A.Pistocchi, A. Aloe, S. Bizzi, F. Bouraoui, P. Burek, A. de Roo, B. Grizzetti, W. van de Bund, C. Liquete, M. Pastori, F. Salas, A. Stips, C. Weissteiner, G. Bidoglio

https://ec.europa.eu/jrc/en/publication/assessment-effectiveness-reported-water-framework-directive-programmes-measures-part-i-pan-european

"*In the context of the JRC pan-European assessment of pressures on water bodies supporting the implementation of the Water Framework Directive (WFD),* ***IPCHEM*** *data are used together with water quality models to map the pollution from priority substances and other chemicals of emerging concern.*"

March 2015

Development of the first Watch List under the Environmental Quality Standards Directive

JRC Technical Report, EUR 27142 EN

Authors: Carvalho R., Ceriani L., Ippolito A. and Lettieri T.

http://publications.jrc.ec.europa.eu/repository/handle/JRC95018

"*2.3 Criteria for selection of substances:* *To identify the number of MS (Member States) for which monitoring data are available, the period 2006-2014 was considered, and three databases were searched, i) WATERBASE, hosted by the European Environment Agency (EEA) and containing official monitoring data, aggregated by year, gathered under the State of the Environment (SoE) reports by MS, ii)* ***IPCHEM****, with regard to the monitoring data compiled during the previous prioritisation exercise and iii) NORMAN database containing monitoring data from official sources, projects and literature*."

"*5. Discussion and recommendations:* *Oxadiazon - The substance is a RBSP in one MS, and monitoring data are available for only two MS, while there is information that the substance is used in nine MS. The exposure of oxadiazon was assessed using FOCUS models and a risk was identified even using the high-tier FOCUS Stepn3, considering the derived PNEC. The available monitoring data, particularly those retrieved from* ***IPChem****, also indicate a risk from this substance.*"

2014

December 2014

Guidelines for healthy environments within European schools

JRC Technical Report, EUR 26726 EN

Authors: Kephalopoulos S., Csobod E., Bruinen de Bruin Y., De Oliveira Fernandes E.

http://publications.jrc.ec.europa.eu/repository/handle/JRC87071

"*5. Implementation challenges and recommendations:* *Establishing a European medical surveillance system for screening the health of schoolchildren and staff, including guidance on asthma management. Such a system may build on updating the SINPHONIE database by aggregating IAQ monitoring and health data from any future campaigns in European schools and making them available via the DG ENV's initiative on* ***IPCheM*** *(Information Platform for Chemical Monitoring) which is supported by DG JRC (http://ies.jrc.ec.europa.eu/index.php?page=80)*".

December 2014

Feasibility of a Monitoring Mechanism Supporting a Watch List under the Water Framework Directive

JRC Scientific and Policy Reports, EUR 27002 EN

Authors: GHIANI M., TAVAZZI S., MARIANI G., LOCORO G., LOOS R., PARACCHINI B., SENA F., SUURKUUSK G., GANS O., WEISS S.,DE WULF E.,FERENČÍK M., SCHLUESENER M., TERNES T., WICK A., KOSCHORRECK J., BELLI M., STROOMBERG G., RAND R., THOMAS j., THOMAS R., WALMSLEY R.,WHALLEY C., COMERO S., GAWLIK B.

http://publications.jrc.ec.europa.eu/repository/handle/JRC88483

"*5.2.2 Applicability of Environmental Specimen Banks:* *In view of the scope of this exercise and the upcoming watch list mechanism it is concluded that Environmental Specimen Banks can provide knowledge and data from biota and sediment/SPM monitoring. These data may support existing and upcoming monitoring obligations for substances in these matrices. Existing trend data from*

retrospective monitoring may feed into the WFD prioritisation process for priority substances candidates.

In addition, it was concluded that a crossover of knowledge may be useful by:
− sharing ESBs vast experience on systematic and continuous sampling of biota and sediment/SPM;
− providing recommendations for the statistical evaluation of trend data including trend and species comparisons;
− providing spatial data and time trends from retrospective analysis to the European chemical database ***IPCHEM****;*
− fostering capacity building for preserving specimens at ultra-low temperatures."

3. IPCHEM REFERENCED IN MISCELLANEOUS PUBLICATIONS

2019

July 2019

High resolution mass spectrometry-based non-target screening can support regulatory environmental monitoring and chemicals management

Peer-reviewed paper

Authors: Hollender J., Van Bavel B., Dulio V., Farmen E., Furtmann K., Koschorreck J., Kunkel U., Krauss M., Munthe J., Schlabach M., Slobodnik J., Stroomberg G., Ternes T., Thomaidis N., Togola A., Tornero V.

In: *Environmental Science Europe (2019) 31:42.*

https://doi.org/10.1186/s12302-019-0225-x

"*Recently, some efforts have been made by the European Commission and national authorities to break the vicious circle where no monitoring means no occurrence data, and no occurrence means no regulation control. One important cornerstone is* ***IPCHEM****, the Information Platform for Chemical Monitoring, which is the European Commission's reference access point for searching, accessing and retrieving chemical occurrence data collected and managed in Europe. The platform contains the following four modules, categorized according to the type of chemical monitoring data: Environmental Monitoring, Human Biomonitoring, Food and Feed and Products and Indoor Air.*".

"*Open access to data gathered by public authorities and institutions with regulatory roles will need some discussion, due to concerns with data ownership. For example, the use of sample-related data from authorities of several countries likely needs authorisation. Since these issues are in some respects similar to those of physical samples in a true specimen bank, adapting the procedures applied there might be a possible solution.* ***IPCHEM*** *has been built as a European-wide access point for searching, accessing and retrieving chemical occurrence of monitored chemicals in various media, but it was not designed to cover NTS data. In conclusion, digitalisation and development of "big-data" tools is increasingly important and offers great opportunities. European and national institutions together with data science experts should discuss how to benefit from the digitalisation and how to tackle the challenges associated with large data volumes, data protection and data security. In this context, it would be beneficial if central repositories could be hosted by public institutions within Europe to allow for high interoperability among the various repositories.*"

April 2019

Regulatory assessment and risk management of chemical mixtures: challenges and ways forward

Peer reviewed paper

Authors: Bopp, S.K., Kienzler, A., Richarz, A., van der Linden, S., Paini, A., Parissis, N., Worth, A.

In: Critical Reviews in Toxicology (2019) 49 (2), 174-189

https://doi.org/10.1080/10408444.2019.1579169

"3.2.2. Better data sharing - The limited understanding of exposure to chemical mixtures was also recognized in the Commission Communication on chemical mixtures (EC 2012), which reports the need to promote "a more coherent approach to the generation, collection, storage and use of chemical monitoring data in relation to humans and the environment." For this purpose, ***IPCHEM*** *was created (http://ipchem.jrc.ec.europa.eu/), which represents the European Commission's reference platform for chemical monitoring data collected across various media (environment, food and feed, humans, consumer products, and indoor air) by the European Commission bodies, EU Member States, international and national organizations, and research communities. The Platform supports a coordinated approach for collecting, storing, accessing, and comparing data related to the occurrence of chemicals, and their metabolites, in relation to humans and the environment. The use and further development of* ***IPCHEM*** *for assessing chemical mixtures and supporting MRA were discussed at an expert workshop in 2017 (Dalla Costa et al. 2018; Bopp et al. 2018a)."*

January 2019

River pollution by priority chemical substances under the Water Framework Directive: A provisional pan-European assessment

Peer-reviewed paper

Authors: Pistocchi A., Dorati C., Aloe A., Ginebreda A., Marcé R.

In: *Science of The Total Environment; Volume 662, 9 January 2019, Pages 434-445.*

https://doi.org/10.1016/j.scitotenv.2018.12.354

*"In this paper we consider as point emissions only those in the E-PRTR, and we describe a first attempt at quantifying diffuse emissions of PS based on the information available at European scale, using as simple a model as possible and capitalizing on the available measurements of PS collected in a pan-European repository (****IPCheM****)."*

"Monitored concentration data are however available in the European Commission's ***IPCheM*** *platform (https://ipchem.jrc.ec.europa.eu).* ***IPCheM*** *aims at collecting virtually all monitoring data publicly available in Europe, in all environmental media, by linking to existing data repositories. In particular, it receives data from the Water Information System for Europe (WISE: https://water.europa.eu/freshwater) where, inter alia, monitoring data on PS produced by the EU Member States are collected. We initially queried the* ***IPCheM*** *database for all 45 priority substances listed in Annex I of Dir. 2013/39/EU, finding data covering a sampling period from 2000 to 2008, totalling 367,114 records and 1995 sampling stations in 23 EU countries (excluding Cyprus, Croatia, Luxembourg, Malta and Sweden), all with geographic coordinates available."*

January 2019

JRC Services - A Handbook for national, regional and local authorities on why and how to engage with the European Commission's science and knowledge service

Authors: Bellan E., Triollet R., Kalburov I.S.

http://publications.jrc.ec.europa.eu/repository/bitstream/JRC114261/kj0718091enn_english.pdf

"The handbook provides a broad overview of the Joint Research Centre's (JRC) science-for-policy capabilities to help national governments and institutions achieve their goals on a sound evidence basis. Services are presented both in a thematic section covering different policy areas, and in a horizontal section covering more generic offering such as access to data and infrastructure, education and training or certified reference materials. The handbook is primarily directed at government personnel in the EU Member States and Associated Countries to Horizon 2020, but can also be of interest to national and regional science organisations, academics and policy makers.

***IPCHEM** is among the data services included under the thematic section 'Food, nutrition and health."*

2018

An approach to identify, prioritise and provide regulatory follow-up actions for new or emerging risks of chemicals for workers, consumers and the environment

Peer-reviewed paper

Authors: *Soeteman-Hernández, L.G., Hogendoorn, E.A., Bakker, J., Van Broekhuizen, F.A., Palmen, N.G.M., De Bruin, Y.B., Kooi, M., Sijm, D.T.H.M., Traas, T.P.*

In: *International Journal of Risk Assessment and Management, 21 (3), pp. 248-269 (2018)*

https://www.inderscienceonline.com/doi/pdf/10.1504/IJRAM.2018.093763

https://www.scopus.com/inward/record.uri?eid=2-s2.0-85051266177&doi=10.1504%2fIJRAM.2018.093763&partnerID=40&md5=0a9961af36e13dc3031ef862bdd57a1a

Under the section 4.2 'Challenges with signal evaluation and amplification' it is mentioned:

"*For the environment, data collection is a key point and should be done as efficiently as possible. Ideally, the data needs should be collected and easily available and retrievable at a central point. Platforms such as **IPCHEM** portal (EC, 2017) and eChemPortal [OECD, 2017] can fulfil this task to make a large number of data sources available at a centralised point. In addition to data collection, expert consultation is needed in order to get better insights in the causal relationship between the occurrence and possible effects as well as for providing additional information from scientific research at an early stage.*"

December 2018

Socio-Economic Status and Health: Evaluation of Human Biomonitored Chemical Exposure to Per- and Polyfluorinated Substances across Status

Peer-reviewed paper

Authors: Buekers J., Colles A., Cornelis C., Morrens, B., Govarts, E., Schoeters, G.

In: *Int. J. Environ. Res. Public Health 2018*, *15*(12), 2818;

https://doi.org/10.3390/ijerph15122818

"*Under HBM4EU, all partners are requested to send their HBM data for substances and groups of substances to the European Environment Agency (EEA) for inclusion in* ***IPCHEM****: the Information Platform for Chemical Monitoring. Initially,* ***IPCHEM*** *will include metadata and mostly aggregated data of past and ongoing HBM studies in Europe.*"

"Databases that collect HBM data such as the ***IPCHEM*** *should be structured to include exposure levels per income categories and educational levels to follow trends in exposure inequality that relate to social status."*

November 2018

Current EU research activities on combined exposure to multiple chemicals

Peer-reviewed paper

Authors: Bopp S., Barouki R., Brack W., Dalla Costa S., Dorne J-L., Drakvik P., Faust M., Karjalainen T., Kephalopoulos S., Van Klaveren J., Kolossa-Gehring M., Kortenkamp A., Lebret E., Lettieri T., Nörager S., Rüegg J., Tarazona J., Trier X., Van de Water B., Van Gils J., Bergman Ä.

In: Environ Int. 2018 Nov; 120: 544–562.

https://doi.org/10.1016/j.envint.2018.07.037
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6192826/?tool=pmcentrez&report=abstract

Under section 3.2 'Other European activities of relevance to mixtures', sub-section 3.2.1 'The European Commission's Information Platform for Chemical Monitoring (**IPCHEM**)' is mentioned:

"***IPCHEM*** *is the European Commission's reference platform for chemical monitoring data collected across various media (environment, food & feed, human matrices, consumer products and indoor air) by the European Commission bodies, Member States, international and national organisations and research communities.*

The Platform aims to support a coordinated approach for collecting, storing, accessing and comparing data related to the occurrence of chemicals, their metabolites, and chemical mixtures, in relation to humans and the environment.

IPCHEM *has been designed and implemented as a distributed infrastructure, providing remote access to existing chemical monitoring data and information systems. Moreover, it offers hosting facilities to data owners and providers who do not have the resources to publish their data online. It is structured into four modules, according to the chemical monitoring data categorisation: 'Environmental Monitoring', 'Human Biomonitoring', 'Food and Feed', 'Products and Indoor Air'. The primary objectives of* ***IPCHEM*** *are focused on: (1) Assisting policy makers and scientists to discover and access chemical monitoring data covering a range of matrices and media; (2) Offering safe and secure data storage for data currently not readily accessible; (3) Boosting data harmonisation and comparison, by integrating quality control rules and procedures into the platform; (4) Facilitating exposure and risk assessment practices in support of EU policies.*

***IPCHEM** is progressively collaborating with research projects, such as HBM4EU, EuroMix, SOLUTIONS, to make research data and metadata shareable and accessible at the early stage possible for policy and regulatory purposes.*

*Furthermore, to best meet the needs of the "community" of users working in the area of MRA, the following upgrades are envisaged: (a) aligning **IPCHEM's** chemical nomenclature registry with other existing registries for the coherent identification of chemicals which are dealt with by European Commission Services, European Agencies and scientific communities; (b) exploring options for grouping of chemicals, based on different parameters (as explained in 4.3); (c) defining and developing technical solutions to enable interoperability of **IPCHEM** with tools and information systems performing mixture risk assessments, in particular those built under the H2020 research framework."*

Under section 4.1 'Combined exposure assessments', sub-section 4.1.1 'Gathering and generating exposure data' is mentioned:

"*As described above, **IPCHEM** is a platform making occurrence data, measured in different matrices, accessible to researchers, policy and decision makers. Several of the above-described projects are providing data and will contribute to the enhancement of **IPCHEM** in the near future, either providing occurrence data collections (e.g. HBM4EU, EDC-MixRisk, SOLUTIONS), or offering/sharing tools and capabilities supporting MRA.*

*HBM4EU is gathering existing HBM data and will generate new HBM data according to harmonised protocols, data templates and codebooks. The data will be made available via **IPCHEM**, as agreed with data controllers and compliant with the data protection regulation*."

October 2018

Development of Policy Relevant Human Biomonitoring Indicators for Chemical Exposure in the European Population

Peer-reviewed paper

Authors: Buekers, J., David, M., Koppen, G., Bessems, J., Sarigiannis, D., Schoeters, G., Kolossa-Gehring, M., Berglund, M.

In*: Int J Environ Res Public Health. 2018 Oct; 15(10): 2085*;

https://doi.org/10.3390/ijerph15102085

"*HBM indicators are additional tools to follow specific chemicals in the pressure-state-impact and response framework. They help to provide a more comprehensive view of the fate of exogenous chemicals that enter the human body. It is important for HBM and environmental indicators that the same substance(s) is (are) measured and grouped in the same way. This may be a challenge, because environmental indicators typically are linked to specific policies, which may group chemicals differently. Examples are specifically PFOA or the total organic fluorine in blood, or Tributyltin and/or tin (Sn) in biota. Depending on the substance and its suspected sources and routes of exposure, it would be relevant to compare different types of environmental indicators (e.g., emissions, concentrations in products, etc.). Unfortunately, there is a lack of monitoring and, consequently, indicators lack for chemicals in most articles and products in the EU. **IPCHEM**, the EU Information Platform for Chemical Monitoring, hosts research data and provides links to chemical occurrence data in Europe. It contains four modules for environmental monitoring data, human biomonitoring, food and feed monitoring data, and for products and indoor air, which currently is being populated with existing research data*

for products. Links are also being set up to other international databases, for example, to the US EPA and the OECD. Over time, ***IPCHEM*** *may therefore become the tool of choice, providing a comprehensive picture that allows HBM data to be placed next to other datasets, which should help with describing trends in exposures sources and, for example, sub-populations and regions at risk. This information could then be accessed by risk managers to mitigate or prevent future risks of prioritized chemicals. There is the intention to stratify HBM data by not only age, sex, and geographical region but also, for example, socio-economic status (SES). The relevance is connected to its possible link to (health) in-equalities, some of which may be caused by exposure to chemicals, being one of several stressors that decrease peoples' resilience. There is also an interest from EU agencies to include HBM indicators that could support the measurement of progress on the strategic objective of EU health policies to foster good health and prevent disease and the 7th EAP objectives to reduce impacts of hazardous chemicals on human health and the environment.*"

August 2018

The US EPA activities and information systems used for chemical exposure screening, modelling and prioritisation and risk-based decision making: needs, challenges and opportunities for data sharing and interoperability of tools on global scale including IPCHEM.

Authors: Phillips, K., Isaacs K., Dionisio K., Wambaugh J., Williams A.

Presented at ISES-ISEE 2018 Joint Annual Meeting, Ontario, CANADA, August 26 - 30, 2018.

https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.S03.03.26

June 2018

Environmental health surveillance in a future European health information system

Peer reviewed paper

Authors: Joas A., Schöpel M., David M., Casas M., Koppen G., Esteban M., Knudsen LE., Vrijheid M., Schoeters G., Calvo Ac., Schwedler G., Kolossa-Gehring M., Joas R.

In: *Archives of Public Health (2018) 76(1):27*

https://doi.org/10.1186/s13690-018-0272-6

"*To interpret data from HBM surveys, and identify determinants of exposure and potential health effects at local, regional or national level, it is helpful if data can be matched with information from environmental and health registries. The environmental registries include European data sources such as INSPIRE and* ***IPChem*** *for environmental contamination, national databases in the case of drinking water, and the database of the European food safety agency (EFSA) for food items. Data related to health impacts (disease registries) are found either in national health registers, or at project level. Only registers for cancer and congenital anomalies are managed at European level by the Joint Research Centre JRC (ENCR-JRC, EUROCAT) to date. HBM-based indicators or data are available mainly in study data bases but will be more and more integrated in* ***IPChem*** *within the currently running HBM4EU initiative.*"

May 2018

Something from nothing? Ensuring the safety of chemical mixtures

JRC Science for Policy Brief

Authors: Bopp S., Richarz A., Worth A., Berggren E., Whelan M.

http://publications.jrc.ec.europa.eu/repository/handle/JRC111886

"Combined exposure: Unravelling the composition of unintentional mixtures remains difficult. Neglecting relevant mixture constituents can lead to an under-estimation of risks. However, chemical monitoring data are scarce, although becoming more consistently available via the EC platform ***IPCHEM****. Moreover, chemical analyses only measure the chemicals expected to be present. Another challenge is to take into account sequential exposures at different moments in time. Biomonitoring chemical concentrations in wildlife or humans is a means to identify realistic co-exposure. Modelling tools for exposure assessment need to be further developed."*

February 2018

Emerging pollutants in the EU: 10 years of NORMAN in support of environmental policies and regulations

Peer reviewed paper

Authors: Valeria Dulio, Bert van Bavel, Eva Brorström-Lundén, Joop Harmsen, Juliane Hollender, Martin Schlabach, Jaroslav Slobodnik, Kevin Thomas & Jan Koschorreck.

In: *Environmental Sciences Europe 30, 5 (2018)*

https://doi.org/10.1186/s12302-018-0135-3
https://enveurope.springeropen.com/articles/10.1186/s12302-018-0135-3

"*NORMAN fosters an integrative approach for the prioritization of CECs [23], which relies on three pillars: the first is EMPODAT, a powerful database system which has been developed to store the monitoring data collected by NORMAN members and as a tool for use by regulators and scientists alike for the prioritization of CECs. Its added value will be further increased in the future thanks to its full integration into the European Information Platform for Chemical Monitoring* ***(IPCHEM)****, which will improve systematic exploitation of raw monitoring data to support prioritization exercises.*"

"*The value of the NORMAN platform is fully recognized by the European Commission, with which NORMAN has recently started a close collaboration to achieve permanent integration of EMPODAT in* ***IPCHEM****.*"

"*Prioritization relies largely on sound and comprehensive monitoring data. It is widely recognized that the lack of data is the primary cause of the lack of regulation of CECs, as a result of the vicious circle where: "no monitoring means no data, and no data means no regulations". The Commission action to break this vicious circle was the introduction of the EU watch list for a short list of selected compounds. In addition, the Commission introduced* ***IPCHEM*** *to collate monitoring data from the environment and human populations and to make these data accessible for regulation, research, and the public.*"

January 2018

Caffeine and paraxanthine in aquatic systems: Global exposure distributions and probabilistic risk assessment

Peer-reviewed paper

Authors: Rodríguez-Gil J.L., Cáceres N., Dafouz R., Valcárcel Y.

In: *Science of The Total Environment; Volume 612, 15 January 2018, Pages 1058-1071.*

https://doi.org/10.1016/j.scitotenv.2017.08.066
https://www.sciencedirect.com/science/article/pii/S0048969717320648?via%3Dihub

"*CAF and PXT exposure data was also searched for in a number of publicly available repositories or databases such as the European **IPCHEM** portal (EC, 2017), the EMPODAT database (NORMAN network, 2017), or the United States Geological Survey (USGS) Water-Quality Information database (USGS, 2017).*"

2017

December 2017

Report on ongoing activities and existing data and data gaps for the 1st prioritised substances including a list of metadata that can be uploaded in IPCheM

HMB4EU project's Deliverable 7.1 WP 7 - Survey design and fieldwork preparation

Authors: Virgolino, Ana; Reis, Maria de Fátima; Santos, Osvaldo; Fialho, Mónica

http://hdl.handle.net/10451/30758

"*A list of metadata available to be uploaded into **IPCheM** is suggested, being nearly 20% of the data accessible for use. For European representative studies, a deeper data analysis of the data gaps will be done by VITO in WP 10 and Task 7.2.*"

September 2017

Bringing together raptor collections in Europe for contaminant research and monitoring in relation to chemicals regulations

Peer reviewed paper

Authors: Movalli P., Dekker R., Koschorreck J., Treu G.

In: *Environ Sci Pollut Res Int. 2017; 24(31): 24057–24060*.

https://doi.org/10.1007/s11356-017-0096-x

"The solution - a framework linking NHM, ESB and other raptor collections.

We suggest that contaminant research and monitoring with raptors, in support of EU and regional chemicals law and policy, would be greatly facilitated by creating a framework to link relevant collections. This would involve digitising all relevant collections and developing a searchable meta-

database of these collections (and of any related existing contaminant data), making them more visible and accessible. This idea has strong support from a wide range of NHMs and ESBs in Europe. Furthermore, archived raptor samples should be made available on request by external collaborators to allow for high impact research.

Construction of the meta-database would involve developing standards for the digital description and online publication of raptor specimens and related data, and developing systems and protocols for the web-based exchange, analysis and visualisation (mapping) of this data. Such a meta-database would enable a clear overview of the temporal and geographic extent (per species) of existing collections. This would in turn (a) stimulate and inform the design of contaminant research using raptors; (b) help to identify gaps in coverage and stimulate greater collection of contemporary specimens to fill gaps in support of prioritised contaminant monitoring. Few ESBs currently collect raptor specimens but many have shown interest in doing so given the relevance to EU regulations. New regional collection centres may also be established to help fill geographical gaps and promote harmonisation of methods. Such a meta-database would create a European resource bringing together NHMs and ESBs and other collections in support of contaminant monitoring with raptors, thereby offering a new way to make use of these collections. The meta-database would complement the existing GRSciColl database of museum specimens and could be linked to the ***IpChem*** *database (https://ipchem.jrc.ec.europa.eu), which brings together chemical exposure data on environmental specimens and human populations for contaminant research and monitoring in Europe.*"

June 2017

European Union research in support of environment and health: Building scientific evidence base for policy

DG RTD's peer-reviewed paper

Authors: Karjalainen T, Hoeveler A, Draghia-Akli R

In: *Environ Int.* 2017 Jun; 103:51-60.

https://doi.org/10.1016/j.envint.2017.03.014

"*We increasingly promote open access not only to publications but also to data so that stakeholders, including policy-makers can get the maximum benefit from EU-funded projects. As an example, the Commission improved timely accessibility of chemical exposure data generated by the Framework Programme projects by developing the* ***IPCHEM*** *database (European Commission, 2015), and addressing the long-existing problem resulting in less than adequate accessibility of results to policy making and various end-users.*"

March 2017

Human biomonitoring as a tool to support chemicals regulation in the European Union

Peer-reviewed paper

Authors: Ganzleben C., Antignac JP., Barouki R., Castaño A., Fiddicke U., Klánová J., Lebret E., Olea N., Sarigiannis D., Schoeters G., Sepai O., Tolonen H., Kolossa-Gehring M.

In: Int J Hyg Environ Health. 2017 Mar;220(2 Pt A):94-97.

https://doi.org/10.1016/j.ijheh.2017.01.007

"*In order to identify the most important exposure pathways asa basis for controlling emissions at source, HBM data on internal exposure, together with information on individual behaviours, diet and lifestyle, can be combined with environmental and/or food monitoring data. The Information Platform for Chemical Monitoring* ***(IPCheM)*** *was developed by the European Commission and provides access to HBM data, as well as to environmental monitoring data and data on chemical substances in products and in food and feed (European Commission, 2016a). This, together with the development of exposure modeling, can facilitate the identification of the most critical exposure pathways and inform a review of the efficacy of legislation focussed on specific chemical products, such as pesticides, biocides, pharmaceuticals or cosmetics, or legislation targeting exposure pathways, such as air, drinking water or food."*

November 2016

EEA Environmental indicator report 2016

European Environment Agency (EEA) report in support to thee monitoring of the 7th Environment Action Programme

https://www.eea.europa.eu/publications/environmental-indicator-report-2016

Under Section 3.4 'Under relevant knowledge'

"*The European Commission's 2012 communication on the combination effects of chemicals identifies a lack of knowledge on 'where, how often and to what extent humans and the environment are exposed to certain chemical mixtures and how exposure may change over time' (EC, 2012). HBM has a role to play in generating this knowledge, which could in turn enable a comprehensive and integrated assessment of cumulative effects of different chemicals, taking into account different routes of exposure. With regard to substances that disrupt the endocrine system, in 2016, the European Commission published a communication on endocrine disruptors, including scientific criteria for their determination (EC, 2016). This communication identifies the move to support the European Human Biomonitoring Initiative, under Horizon 2020, as key to providing solid scientific evidence for regulators and policymakers*.

Finally, the ***Information Platform for Chemical Monitoring (IPCHEM)*** *was recently developed by the European Commission, in order to provide online access to HBM data, as well as to environmental monitoring data and data on chemical substances in products and food and feed. This allows a cross-media analysis of exposure to a single substance and facilitates the identification of the most critical exposure pathways.* ***IPCHEM*** *is also intended to support work to identify which mixtures of* chemicals are present in the environment and in humans."

July 2016

iEMSs 2016 Conference - Environmental modelling and software for supporting a sustainable future

http://former.iemss.org/sites/iemss2016/img/pdf/vol1.pdf

Conference paper

Authors: Knetsch G. and Maria Ruether M.

The abstract of the paper entitled 'The European Information Platform for Chemical Monitoring (IPCheM) - How can you realize interoperability?' mentions:

"*Monitoring programs in Germany offer a large variety of data. On the one hand, these data are generated over many years in selected sampling areas; on the other hand, studies of monitoring take place in the context of research projects or other investigations. These data are often available in web-based information systems. Two databases will be presented with their potential for the interoperability with a (technical) platform for data of the chemical monitoring. The European project* ***"Information Platform for Chemical Monitoring (IPCheM)"*** *promotes networking of various existing databases and information systems with the goal of advancing the environmental data exchange between different disciplines.*"

July 2016

Report of the WHO meeting: Chemical policy and programmes to protect human health and environment in a sustainability perspective (Bonn, 4-5 July 2016)

http://www.euro.who.int/__data/assets/pdf_file/0009/334665/Chemical-safety-meeting-report_new-cover.pdf

Under Section 'Health-related aspects of chemical safety in global and regional policies and strategies' is mentioned:

"*To obtain more data on exposure to environmental contaminants, Member States of the European Union joined a five-year programme (the European Human Biomonitoring Initiative - HBM4EU) to monitor and scientifically assess human exposure to chemicals and its potential health impact; the project will be launched by the end of 2016. The programme will promote laboratory excellence and capacity-building, timely access to data for policy-makers and open access to publications and research data, using the data infrastructure of the* ***Information Platform for Chemical Monitoring (IPCHEM)****.*"

June 2016

Review of case studies on the human and environmental risk assessment of chemical mixtures

JRC Technical Reports, EUR 27968 EN

Authors: Bopp S.K., Kienzler A., Van der Linden S., Lamon L., Paini A., Parissis N., Richarz A.-N., Triebe J., Worth A. (2016)

https://doi.org/10.2788/272583

http://publications.jrc.ec.europa.eu/repository/handle/JRC102111

"4.5 Current limitations in performing mixture risk assessments: Another major problem is the availability of relevant exposure and toxicity data, as well as lack of information on the MoA of mixture components (e.g. Evans et al., 2016; 2015). A major gap was identified in the information on human and environmental exposure and a new platform for monitoring data was therefore created. ***IPCheM****, the Information Platform for Chemical Monitoring data, was developed over the last years as one of the follow up actions to the Commission Communication (EC, 2012). It comprises monitoring*

data in four modules, i.e. human biomonitoring, environmental monitoring, indoor air and consumer products, and food / feed related monitoring data. Thus it offers great potential for the assessment of mixtures."

"*In order to facilitate mixture risk assessment in the future, it will be relevant to improve data sharing regarding toxicity and exposure information. Relevant platforms such as e.g.* ***IPCheM*** *should be further populated (e.g. by monitoring programmes such as the European Human Biomonitoring Initiative) and made interoperable with other tools.*"

March 2016

DG ENV's FUTURE BRIEF: Identifying emerging risks for environmental policies

March 2016, Issue 13, page 10

http://ec.europa.eu/environment/integration/research/newsalert/pdf/emerging_environmental_risks_early_warnings_FB12_en.pdf

"*The issue of exposure to multiple chemicals and their possibly additive or synergistic effects is a significant 'unknown'. Efforts are being made to collate spatial data on the presence in the environment of chemicals that might have interactive effects on the environment and/or human health, including the European Commission's Information Platform for Chemical Monitoring* ***(IPCheM).*** *Analyses of these data and their comparison with spatial data on effects could help to identify correlations that might be critical in warning of the significance of some types of exposure.*"

February 2016

EFSA SCIENTIFIC OPINION - Coverage of endangered species in environmental risk assessments at EFSA

EFSA Scientific Committee report

https://doi.org/10.2903/j.efsa.2016.4312

https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2016.4312

Under Section 7.2. 'Possibilities of status monitoring at the European level in relation to endangered species' is mentioned:

"*EEA holds the view that ERA indeed needs to be supplemented with adequate real-world monitoring of effects and effective feed-backs to legislators/ risk managers. The stringency of monitoring requirements after introduction could be made a function of the perceived levels of risk and uncertainty. The current initiatives to establish an* ***information Platform on Chemicals (IPCheM)****, that will include environmental (bio-)monitoring data may help to establish such effective feedback mechanisms to legislators. For instance, if monitoring indicated that endangered species decline, then a focused assessment should take place unravelling the plausible cause.*"

2015

October 2015

Linking environmental and human health data to contaminated sites in Europe - 1st Conference of the Industrially Contaminated Sites and Health Network - ICSHNet

Conference paper

Authors: Payá Pérez A.B., Dalla Costa S.

http://www.icshnet.eu/news/1stpc-report/
http://old.iss.it/binary/publ/cont/16_27_web.pdf

"*This paper informs about the indicator established to monitor the progress on the management of contaminated sites in Europe, which is based on the Joint Research Centre (JRC) reference report "Progress in the management of contaminated sites in Europe" and about the development of the* ***Information Platform for Chemical Monitoring (IPCHEM)*** *aimed to ensure a more coordinated approach for collecting, storing, accessing and assessing of data related to the occurrence of chemicals and chemical mixtures in human populations, in the environment, consumer products, food and feed.*"

2014

December 2014

diXa: a data infrastructure for chemical safety assessment

Peer reviewed paper

Authors: Hendrickx D.,. Aerts H., Caiment F., Clark D., Ebbels T., Evelo C., Gmuender H., Hebels D., Herwig R., Hescheler J., Jennen D., Jetten M., Kanterakis S., Keun H., Matser V., Overington j., Pilicheva E., Sarkans U., Segura-Lepe M., Sotiriadou I., Wittenberger T., Wittwehr C., Zanzi A. and Kleinjans J.

In: *Bioinformatics, 31(9), 2015, 1505–1507*

https://doi.org/10.1093/bioinformatics/btu827

"*3 Current developments: diXa is a sustainable data-infrastructure. It will be updated for storing more data types and classes, including next generation sequencing and methylation data. Furthermore, new tools for integrated statistical analysis will be developed and added to diXa. diXa has already been adopted as the informatics framework for the EU FP7 HeCaTos project (http://www.hecatos.eu/).*

The ChemAgora portal is also a long-term strategic development, to which the European Commission's Joint Research Centre is fully committed. ChemAgora has already caught the attention of other initiatives, e.g. ***IPCheM*** *(http://ipchem.jrc.ec.europa.eu/), a European Commission project, which will take advantage of the search service provided by ChemAgora.*"

4. JRC AWARDS FOR EXCELLENCE

October 2017

The IPCHEM's continuously expanding strategic partnership, collaborations and synergistic developments in EU and at global scale have been recognised and awarded by the JRC Director General in the context of the 2017 JRC Awards for Excellence exercise. On 18 July 2017 the **IPCHEM Team** has received the **2017 JRC Award for Excellence (Category 6 'Celebrating Collaboration')**.

https://webgate.ec.europa.eu/connected/docs/DOC-127360

IPCHEM Team members: Stylianos KEPHALOPOULOS (F.2), Silvia DALLA COSTA (B.6), Vittorio REINA (F.2), Alberto CUSINATO (B.6), Otmar GEISS (F.2), Alexandre ZENIÉ (F.2), Paolo LEVA (R.I.4), Salvatore TIRENDI (F.2), Anita RADOVNIKOVIC (F.2), Nicholas NICHOSLON (F.1), Clemens WITTWEHR (F.3), Stephanie BOPP (F.3), Elisabeth BERGGREN (F.3), Alberto PISTOCCHI (D.2), Bernd GAWLIK (D.2), Catherine SIMONEAU (F.7), Pilar AGUAR (F.2), Alessandro ANNONI (B.6), Ciaran NICHOLL (F.1), Maurice WHELAN (F.3), Guy VAN DEN EEDE (F.7)

5. IPCHEM DATA INTEGRATION STATISTICS

The number of data sets and individual records in IPCHEM has grown substantially in the last two years (Figure 1). IPCHEM includes now more than 250 million records distributed over its four modules. Most records are available in the environmental module (99.9%). The number of datasets covered in the human biomonitoring module is strongly rising with the inclusion of metadata provided by the HBM4EU[1] project (Figure 2). According to the open data principle, the aim is to make as much data as possible publicly available. An overview of public vs restricted access data sets can be found in Figure 3. IPCHEM includes metadata, in order to make data sets findable and describe them, as well as the detailed aggregated or individual level data records (Figure 4).

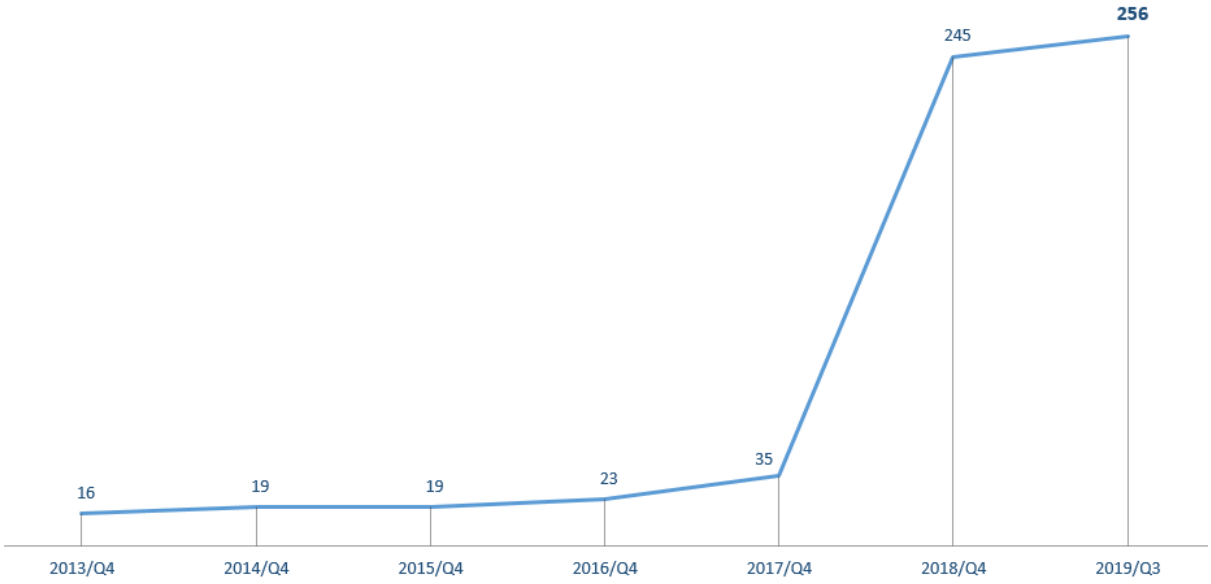

Figure 1 – Number of individual records [in millions] integrated into IPCHEM by 3rd quarter of 2019

[1] https://www.hbm4eu.eu/

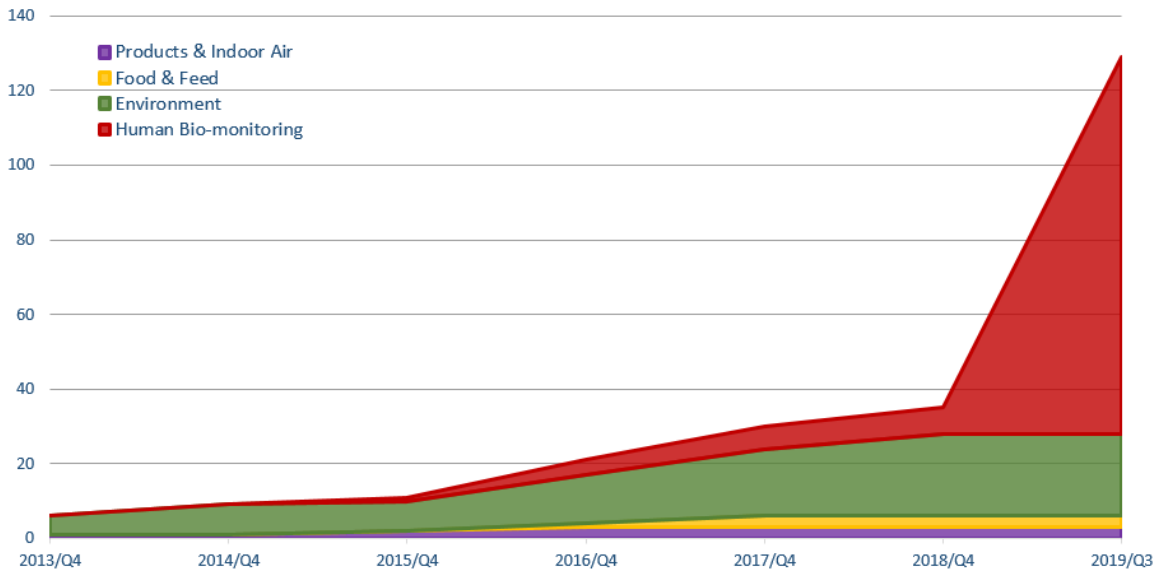

Figure 2 – Number of datasets integrated and/or under integration into IPCHEM across the four IPCHEM Thematic Modules

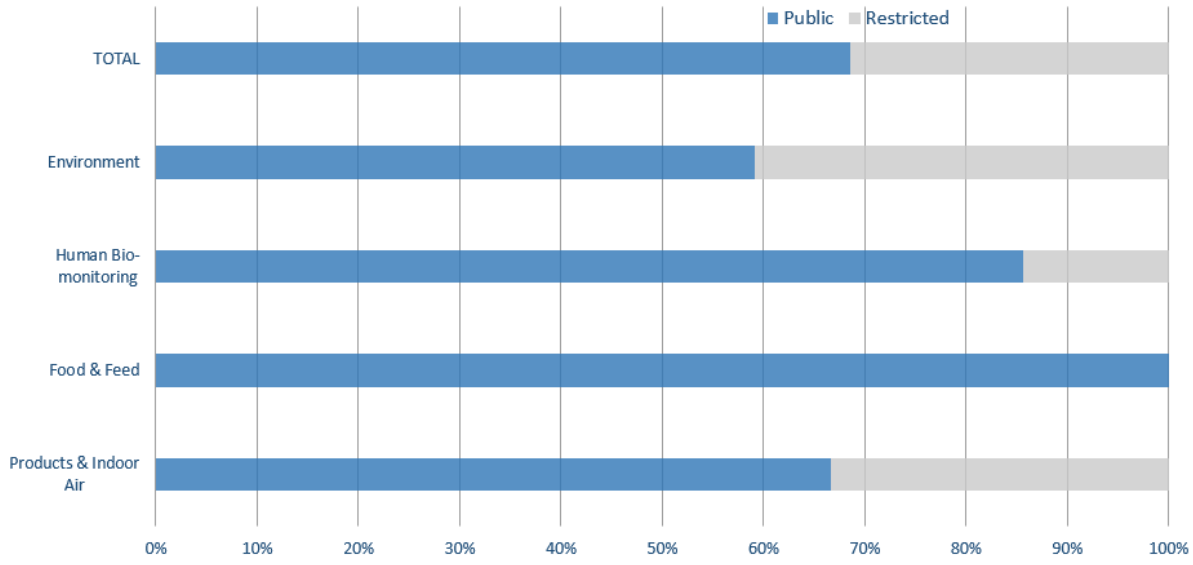

Figure 3 – Overview of the IPCHEM data accessibility status (public or restricted) across the four IPCHEM Thematic Modules

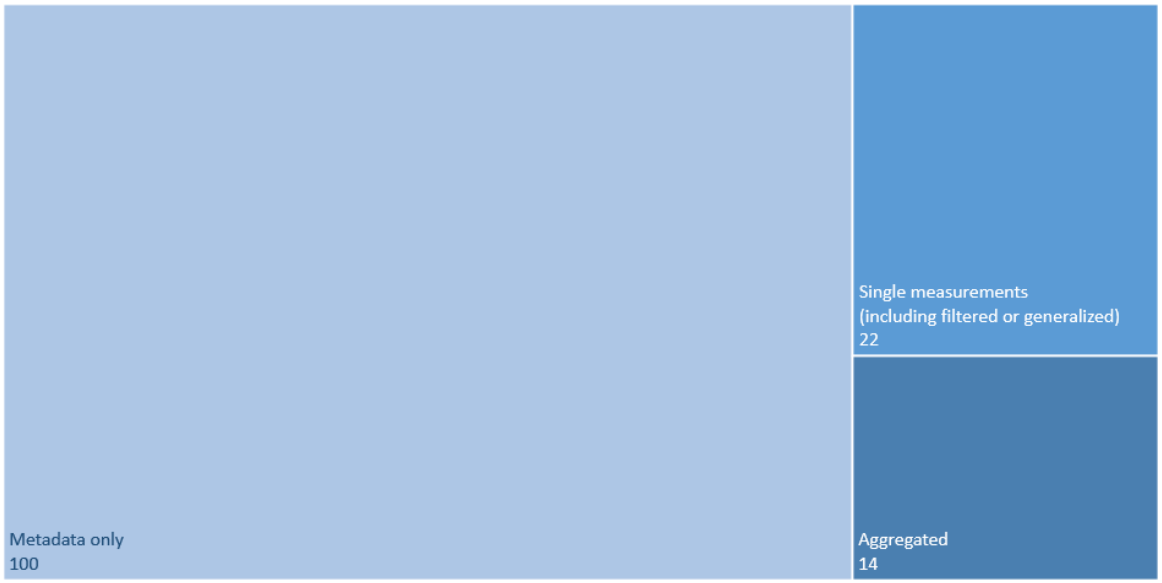

Figure 4 – IPCHEM datasets distribution by data granularity (single measurements, aggregated, metadata only)

6. IPCHEM DATA PROVIDERS

European Commission

- European Commission – DG ENV
- European Commission – DG SANTE
- European Commission – JRC

European Agencies

- European Environment Agency (EEA)
- European Food Safety Agency (EFSA)
- European Chemicals Agency (ECHA)

International Organisations

- Organisation for Economic Co-operation and Development (OECD) – Working Party Exposure Assessment

Member States Governmental Bodies & Public Institutions

- Environment Agency Austria (EAA), Austria
- Flemish Centre of Expertise on Environment and Health, Belgium
- Belgian Cell Environment and Health, Belgium
- Institut Scientifique de Service Public, Belgium
- Provincial Institute of Hygiene (PIH), Belgium
- Health Board of Estonia, Estonia
- Agence Française pour la Biodiversité (AFB), France
- Institut National de la Santé et de la Recherche Médicale, France
- Santé publique France, France
- German Environment Agency (UBA), Germany
- National Public Health Center, Hungary
- Assaf Harofeh Medical Centre, Israel
- Israel Ministry of Health, Israel
- Istituto Superiore per la Protezione e la Ricerca Ambientale (I.S.P.R.A.), Italy
- Istituto Superiore di Sanita' (I.S.S.), Italy
- Norwegian Institute of Public Health, Norway
- Úrad verejného zdravotníctva Slovenskej republiky (UVZ), Slovakia
- Andalusian School of Public Health (EASP), Spain
- Conselleria Sanidad Universal y Salud Pública-DGSP, Spain
- Institut d'Investigació Sanitària Pere Virgili, Spain
- The Foundation for the Promotion of Health and Biomedical Research of the Valencian Region (FISABIO), Spain
- Swiss Federal Office of Public Health (FOPH), Switzerland

Research Centres & Academic Institutions

- Centre Hospitalier Universitaire de Liège, Belgium
- Flemish Center of Expertise on Environment and Health, Belgium
- Cyprus International Institute for Environmental and Public Health, Cyprus University of Technology, Cyprus
- National Institute of Public Health, NIPH, Czech Republic
- EDMaRC - International Center for Research and Research Training in Endocrine Disruption of Male Reproduction and Child Health, Dept. of Growth and Reproduction, Rigshospitalet, Denmark
- National Research Centre for the Working Environment, Denmark
- Odense Patient Explorative Network (OPEN), Denmark
- University of Copenhagen – Department of Public Health, Denmark
- Finnish Institute of Occupational Health (FIOH), Finland
- National Institute for Health and Welfare (THL), Finland
- Hadassah Hebrew University, Israel
- National Research Council - Water Research Institute (CNR-IRSA), Italy
- Lithuanian University of Health Sciences, Lithuania
- Nofer Institute of Occupational Medicine, Poland
- Slovenska zdravotnicka univerzita v Bratislave, Slovakia
- Univerzita Konštantína Filozofa v Nitre, Slovakia
- Jožef Stefan Institute, Slovenia
- Centro de Investigación Biomedica en Red en Epidemiología y Salud Pública /ISCIII, Spain
- ISGlobal--Barcelona Institute for Global Health, Spain
- National Centre for Environmental Health, Institute of Health Carlos III, Spain
- Karolinska Institutet, Sweden

External Service Providers

- Environment and Health, KU Leuven; IDEWE, Belgium

Research Consortia/Networks

- EMODnet Chemistry consortium (https://www.emodnet-chemistry.eu)
- DEMOCOPHES consortium (http://www.eu-hbm.info/democophes)
- NORMAN Network (https://www.norman-network.net)

7. AGREEMENTS WITH INTERNATIONAL ORGANISATIONS, EU PROJECTS AND NETWORKS FOR DATA PROVISION AND LINKS TO IPCHEM

International Organisations:

- **OECD** - interoperability with eChemPortal
  https://www.echemportal.org/echemportal/participant/participantinfo.action?participantId=480&pageID=2
- **UNEA3** (3rd United National Environmental Assembly) – EU Voluntary Commitments
  http://web.unep.org/environmentassembly/node/40741

H2020 and FP7 projects:

- **DENAMIC (Developmental neurotoxicity assessment of mixtures in children)**
  www.denamic-project.eu/
- **EDC-MixRisk** (Effects of mixtures of endocrine disruptive chemicals on children)
  http://edcmixrisk.ki.se/
- **EuroMix** (A tiered strategy for risk assessment of mixtures of multiple chemicals)
  https://www.euromixproject.eu/
- **HEALS** (Health and Environment-wide Associations based on Large population Surveys)
  http://www.heals-eu.eu/
- **HELIX** (Building the early life exposome)
  https://www.projecthelix.eu/
- **Human Biomonitoring for Europe (HBM4EU) Joint Action**
  https://www.hbm4eu.eu/
- **OFFICAIR** (Indoor air pollution in modern office buildings)
  http://www.officair-project.eu/
- **SINPHONIE** (Schools Indoor Pollution and Health: Observatory Network in Europe)
  http://sinphonie.rec.org
- **SOLUTIONS** (Solutions for present and future emerging pollutants in land and water resources management)
  http://www.solutions-project.eu/

JRC Institutional & Exploratory Research projects:

- **AIRMEX** (European Indoor Air Monitoring and Exposure Assessment Project)
  http://data.europa.eu/euodp/data/dataset/jrc-airmex-campaigns-data
- **ChemPRINT (JRC chemical footprint for non-target compounds)**
  https://webgate.ec.europa.eu/connected/community/jrc/directorate-d/d2/chemprint