NORMAN Databases workshop

The NORMAN databases in support of European environmental policies

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Network of reference laboratories, research centers and related organisations for monitoring of emerging environmental substances

Mission:

- **Exchange information** on emerging substances
- Improve **data quality**
- Promote **synergies** among research teams and **more efficient transfer** of research findings to **policy-makers**

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Working Groups

1) Prioritisation

2) Bioassays

3) Effect-Directed Analysis

4) Engineered Nanoparticles

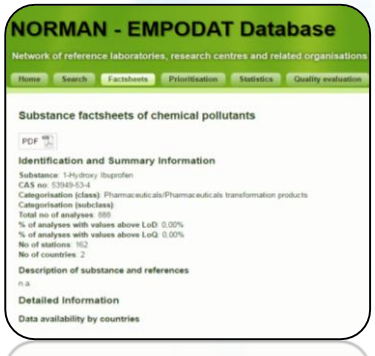
5) Wastewater reuse

6) Indoor environment

+ 2 Cross-WG: Passive sampling and NT screening

Information and data exchange

EMPODAT Chemical module

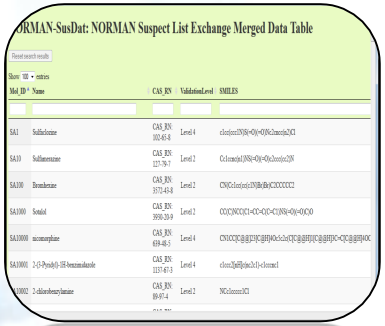


A database of more than 9 million geo-referenced monitoring data on emerging substances

EMPODAT Ecotox module

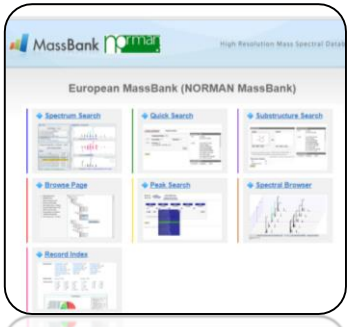
A platform for systematic collection and evaluation of ecotoxicity studies for harmonised derivation of

NORMAN SusDat module



An open-access database of substances, accompanied by information for mass-spectral

NORMAN MassBank database



An open-access database of mass spectra for more than 1,000 environmental contaminants

And more modules are in the pipeline: Digital Sample Freezing Platform (DSFP), Passive Sampling, Bioassays, ARB/ARG…..

1st edition of NORMAN databases workshop – Berlin, 2011

NORMAN Position paper "Towards a harmonised approach for collection and interpretation of data on emerging substances in support of European environmental policies"

- Environmental monitoring data are not systematically collected at the EU level.
- Need for a better integrated approach to collection, management and assessment of data on emerging substances with adequate metadata.
- Need to continue the NORMAN data collection effort.
- All EU-funded research projects should provide all data on emerging substances generated within their scope to a central open access database.
- A harmonised data reporting format should be adopted both at the national and European level.

2017, 2nd Database Worshop
The progress made

- IPCHEM has been created
  - Recognition by the Commission of the need to develop and maintain a permanent platform for collection and sharing of monitoring data (all compartments, not only environmental data..)
  - Decision of the Commission to add a clause in all EU-funded projects: all research monitoring data will be stored in IPCHEM

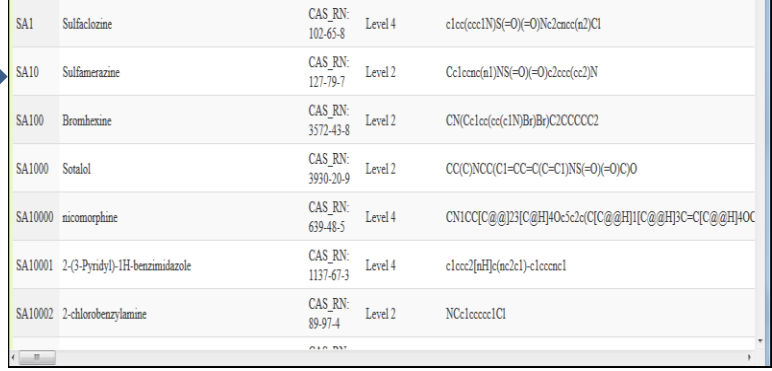
2017 Status and progress made

- NORMAN has contributed to the EU effort for systematic data collection and analysis
  - In 2014 NORMAN recommendations for the definition of the 1st EU Watch List
  - In 2015 NORMAN datasets have been shared with JRC to support the review of the list of the WFD PS
  - In 2017 agreement with DG ENV to integrate EMPODAT in IPCHEM
  - Dynamic link with IPCHEM possible as a next step
    - possibility for NORMAN to retrieve the raw data in EMPODAT and use them for prioritisation activities?

Perspectives : our vision

- NORMAN databases are the basis for prioritisation
- Trend is now from hundreds, to tens of thousands substances
  - prioritisation of relevant compounds >> identification of compounds on which to put higher effort for actions

Delete / hide	Former emerging substance	Keep on NORMAN List	NEW: Add to NORMAN List
38 compounds : WFD PS (diuron, dichlorvos, dicofol, heptachlor, PCBs, BDE -47, BDE-153, BDE-154, HBCDD, PAHs, PFOS, etc.) Microcystines Well known Industrial Chem. (aniline, styrene, toluene, xylenes, etc.)	**• 72 compounds :** • Phathalates • Organotins • Nitro musks • Organo-lead • 8 well known PFASs • 23 herbicides / insecticides, banned in EU and /or not frequently detected / quantif • 10 surfactants (NPEOs, LAS)	**• 527 compounds** •8 Plasticisers •73 PPP • 20 PPP / biocides or biocides •209 Pharmas • 60 Pers care prod. •16 Flame retard. • 44 Ind. Chemicals • 8 PFASs, ….etc. **•61 DBP (only** drinking water)	**• 253 compounds :** • 67 flame ret. (used as alternatives to banned products) • 10 PPP most frequently detected, highest conc. or chronic EQS exceeded in recent studies • 118 PPP/biocides & biocides in use or under review • 50 PFASs in use • 8 Pharmas, etc.



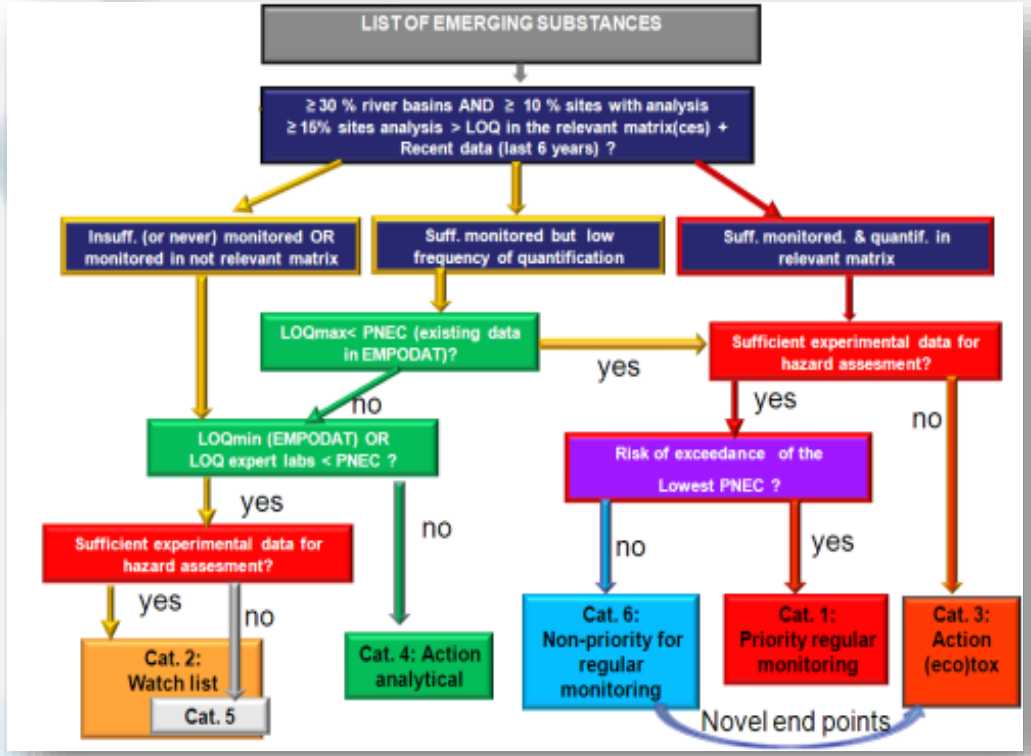
NORMAN prioritisation list: 860+ subst.

NORMAN SusDat: 20000+

http://www.norman-network.com/?q=node/236

NORMAN prioritisation concept – current scheme

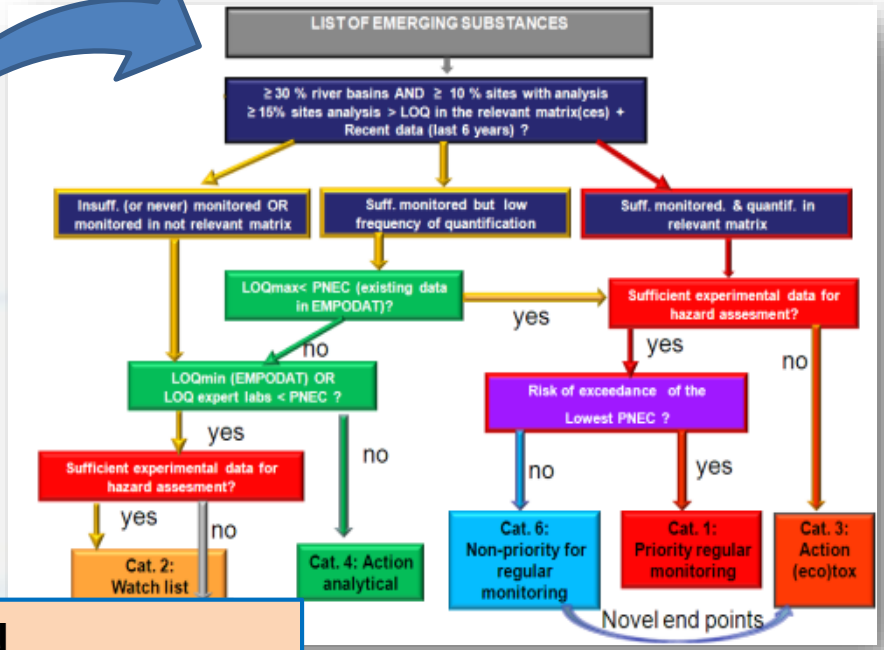
- Categorisation and prioritisation of a list of candidate compounds: 6 actions categories
- HOW to extend this scheme to a much larger « Universe of chemicals »?



Actions needed

- We need to put more effort in data collection for tens thousands of compounds:
  - NOT ONLY monitoring data BUT also:
    - Info on substance properties (physico-chemical properties, hazardous properties, ..)
    - Info to support identification of unknowns in HRMS spectra
    - PNEC values (experimental or predicted values)
    - Exposure indices: indicators derived from tonnage, use pattern, literature PEC, etc. to prioritise compounds for which NO monitoring data is available
    - Indicators derived from NTS data (frequency of appearance of signal, etc.)

From hundreds, to tens of thousands candidate substances



GO TO NORMAN TARGET PRIORITISATION

NT CATEGORY 1 - FoA* + EoE + FoE (0-3)

NT CATEGORY 2A - FoA* + EoE + FoE (semiquantitative info available)
NT CATEGORY 2B – FoA* (0-1; semiquantitative info NOT available)

NT CATEGORY 3 – FoA*

NT CATEGORY 4 – FoA*

Non-target screening **prioritisation**

* Cut-off: 4 countries, 100 sites detected

To discuss in this workshop

- Revision of the structure, new modules of the NORMAN database system to better support the new prioritisation vision
- Links with IPCHEM
- Links with other platforms, databases (US EPA Dashboard, FOR-IDENT, etc.): how to organise sustainable info sharing in the long-term
- Further development of the NTS tools / modules (NORMAN Massbank, SusDat, DSFP)

Thank you

Wishing you a fruitful workshop !