

Regulatory landscape and critical needs for NAMs in the Hazard assessment of industrial chemicals

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- Brief introduction to ECHA
- EU chemicals legislation and current status under REACH
- The role of NAMs in an animal testing-free regulatory system
- NAMs at ECHA

We contribute to EU goals for chemical safety



Phase out most harmful chemicals in consumer products



Tackle cocktail effect



Consolidate and simplify chemical regulations



Promote alternatives to animal testing



Boost innovation and safe by design chemicals



Play a leading role globally

We implement EU chemicals laws



→ REACH -
registration of
chemicals



→ Classification,
labelling and
packaging



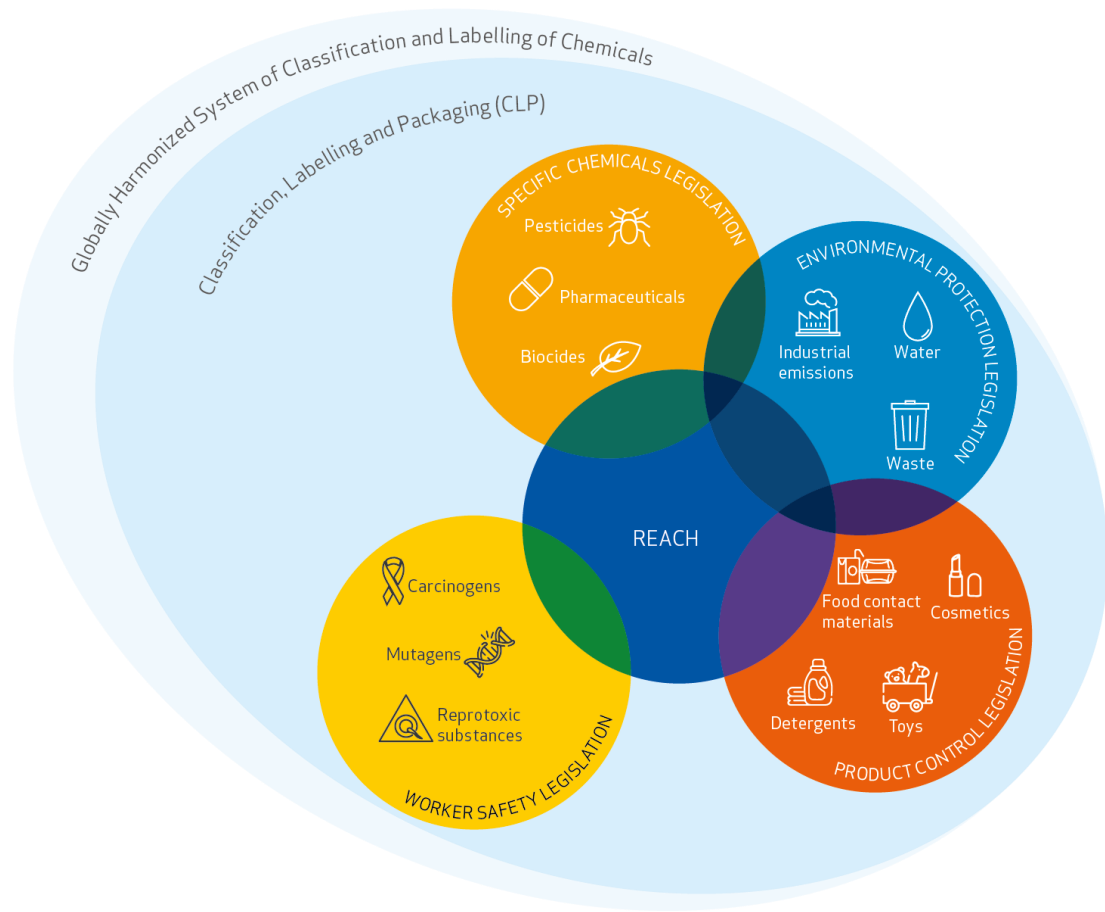
→ Biocides



→ PIC – import
and export

EU Chemicals legislation framework

The current regulatory system for industrial chemicals management relies on a horizontal generic approach based on the identification of hazardous properties of substances



Key elements of the current regulatory system

- **Horizontal generic approach** based on the identification of hazardous properties
- Classification, Labelling and Packaging
 - enables the **identification of hazardous properties** and classification based on adverse effects, **independently of exposure** by applying agreed criteria (e.g. GHS)
 - ensures, through **harmonised classification and labelling** that appropriate classification is consistently applied for most hazardous substances and can be enforced
 - provides a **framework for generic risk management**
- **REACH** feeds into CLP and ensures that industry provides adequate data
 - specifies **standard information requirements**
 - requires data generated using **standardised accepted testing methods** (OECD TG)
 - enables the **identification of adverse effects** and comparison with GHS criteria
 - enables the **derivation of safety levels** to be compared with external exposure
 - allows **mutual acceptance of data**

Key elements on the use of alternatives under REACH

- Status of implementation and use of non-animal test methods used to generate data in REACH registrations

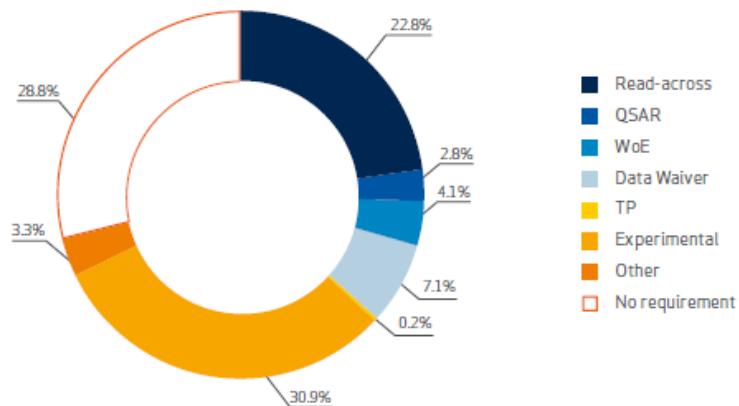
2023 edition includes

- Data analysis of current REACH database (as in previous editions)
- Additional analysis of newly registered substances (last 3 years)
- ECHA's activities to promote NAMs and our contribution to the on-going debate on transitioning towards full replacement of animal testing for industrial chemicals



Art 117.3 report on the use of alternatives under REACH

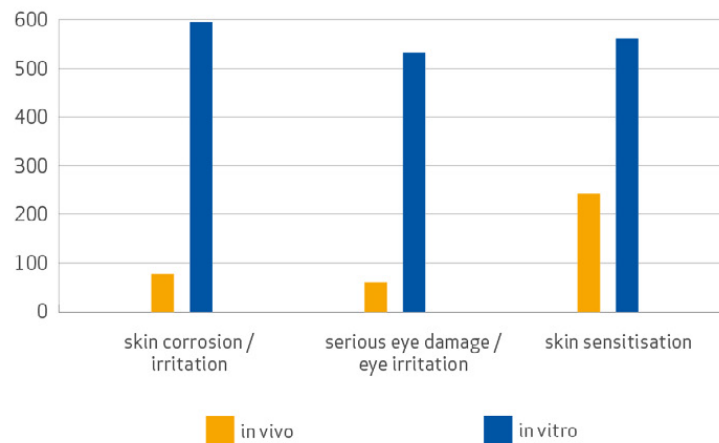
ADAPTATIONS USED MORE THAN EXPERIMENTAL STUDIES
READ-ACROSS IS THE MOST COMMONLY USED ADAPTATION



Options used to fulfil the information requirements in the REACH registration database (2009 – 2022)



ALTERNATIVE METHODS INTRODUCED RECENTLY ARE WIDELY USED



Occurrence of studies over the years 2019 - 2022 for the endpoints skin irritation/corrosion, serious eye damage/eye irritation and skin sensitisation

The current status

- Replacing animal testing “one to one” successful for “simple” endpoints
 - support through OECD work on defined approaches
 - takes time to develop robust and reliable predictions

- Replacing animal testing “one to one” not possible for “complex” endpoints under the current regulatory framework
 - Standard information requirements refer to specific animal tests
 - Currently alternatives need to assume **full equivalence** to animal test
 - The current system is regulated based **on observed adversities**
 - The majority of new approach methods **cannot directly predict adverse outcome** at systemic level
 - For many regulatory endpoints, comprehensive knowledge is still lacking

Outlook towards a full replacement of animal testing

- *A possible way forward* -

- 1) To close major gaps
- 2) To gain experience
- 3) To propose a NAMs fully compatible system



Define

Identify critical needs
transit to animal free system
to steer NAM development



Demonstrate

Apply already available
NAMs under the current
system



Re-design

Re-think the overall system to
enable NAMs & **Redefine** the main
elements of the horizontal approach

Time

10 Now

Short-term

Mid-term

Long-term

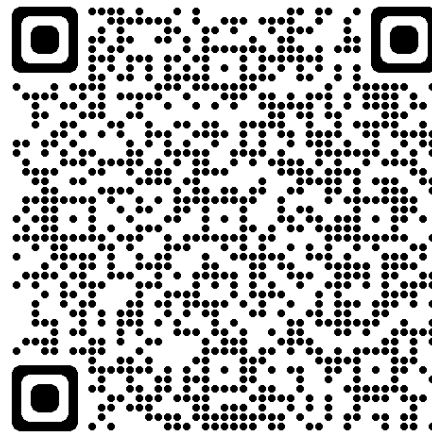
Outlook towards a full replacement of animal testing

- *Critical needs* -

Hazard identification: Ability to demonstrate that NAMs, (e.g. an integrated in vitro/in silico system) can be used to allow a conclusive outcome on the (lack of) hazardous properties for a given regulatory endpoint

Hazard characterisation: Ability to reliably identify hazard based on changes at the molecular/cellular level instead of observed adversity in an organism

Extrapolation: Ability to reliably convert nominal concentrations measured or predicted by NAMs into external doses used to set safety levels, to communicate the hazard and assess the risks.



[Detailed information](#)

[@ ECHA NAMs workshop
background document](#)



NEW APPROACH METHODOLOGIES
WORKSHOP

31 MAY - 1 JUNE

Towards an animal free regulatory system for industrial chemicals

Some key messages from the workshop

- Strong commitment from all stakeholders to move towards animal-free chemical safety assessment
- Important to have clear goals and milestones to measure progress
- Use of NAMs is advancing for some, but not all, toxicological endpoints (case studies useful to build confidence)
- Regulatory context defines the readiness to apply NAMs
- Targeted investment is required to facilitate NAMs regulatory acceptance (e.g. validation)
- Quality and accessibility of data important to support informed regulatory decisions making and help developing test methods
- Dialogue is required from all stakeholders across sectors and geographical regions

NAMs at ECHA

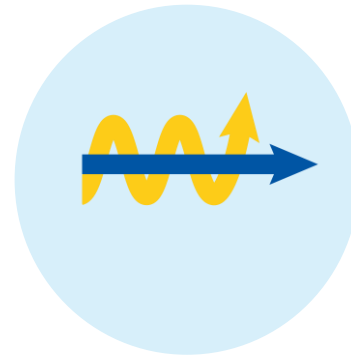
ECHA's work to promote NAMs and alternatives to animal testing



**Effective
implementation of
the IRS to identify
and address risks of
chemicals of concern**



**Investment in
international
activities promoting
alternatives**



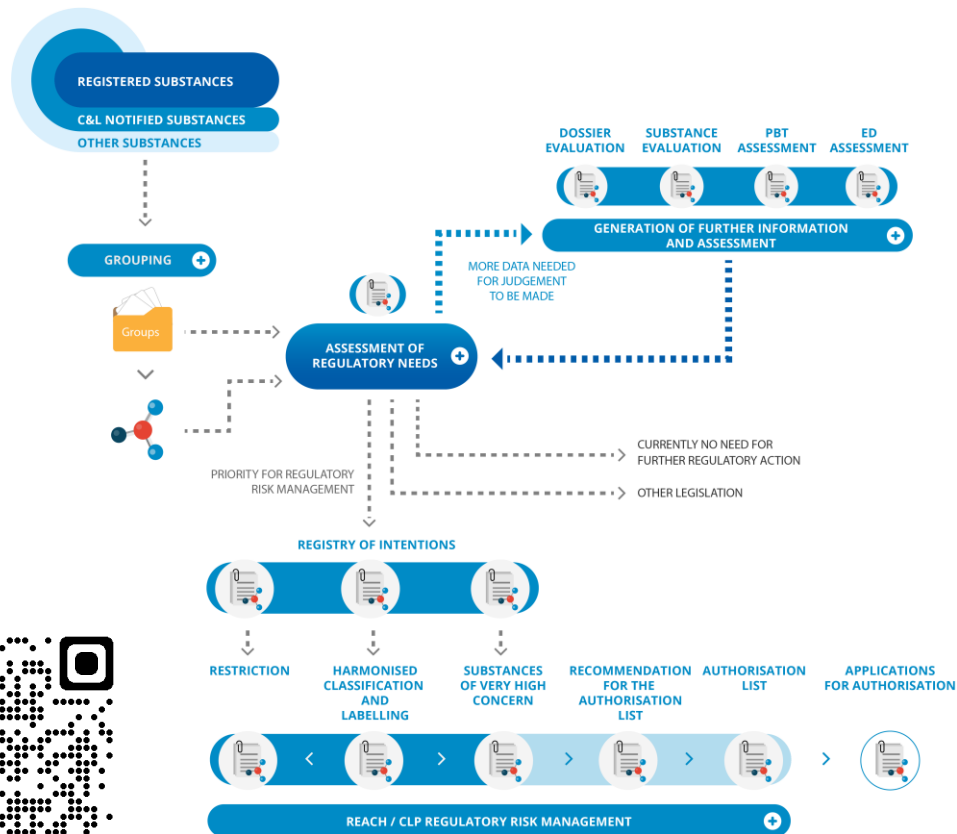
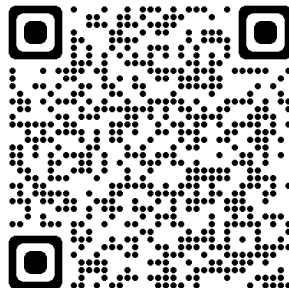
Making data available

Integrated Regulatory Strategy

- Strategy
 - Move from substance-by-substance to grouping approach
 - Connecting regulatory processes

- Central to finding substances needing action

- Transparent:
 - Annual IRS Report
 - Chemical Universe
 - ARNs published



Activities promoting alternatives



Research consortia ASPIS

PrecisionTox
ONTOX
RISK-HUNT3R



Targeted studies Cefic LRI

MetAbolomics ring-Trial
for Chemical groupING
(MATCHING)



Stake
holders

Regulators worldwide

Academia EU

Industry / Academia

Activities

Collaboration & dialogue for the
acceptance of NAMs

Research

Emerging technologies

Topics

Relevant case studies

Next-generation risk assessment (NGRA)

Level of maturity and standardisation

Main
partners



Our role

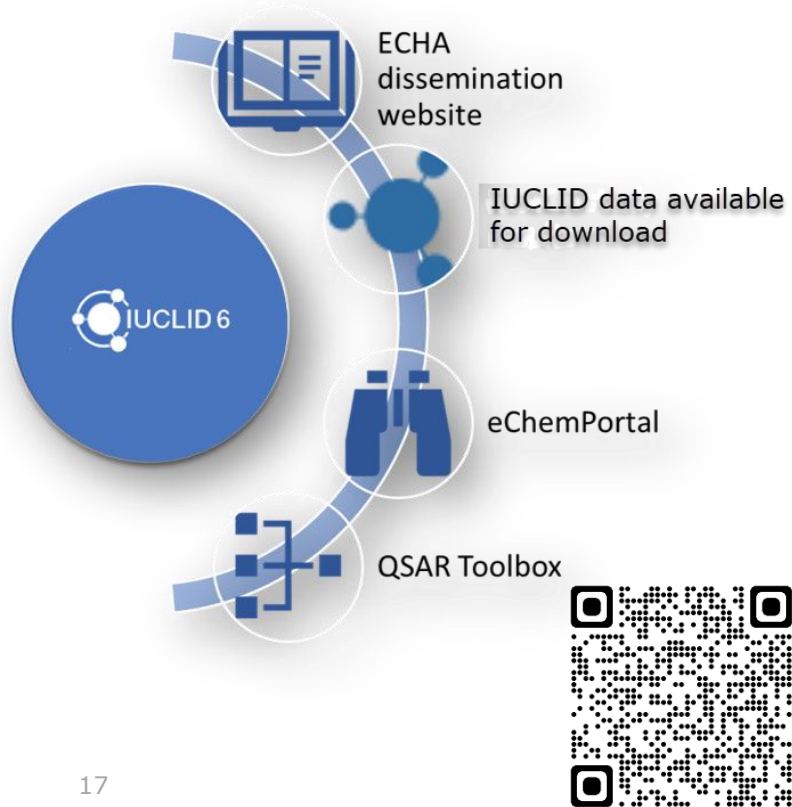
- Leading prospective case study
(value of using NAMs for RDT)

- Raising awareness on regulatory
needs within EU projects

- Advising on new technologies (omics)
requirements for wider acceptance



Making data available



ECHA facilitates access to non-confidential data in IUCLID format

Data available for download

REACH study results

Data submitted under REACH registrations for ~ 23 000 substances with studies related to physical-chemical properties, environmental fate and pathways, and ecotoxicology and toxicological information.

US FDA IUCLID dataset

Data on 348 approved pharmaceuticals. Pre-clinical animal data: repeat-dose, carcinogenicity, developmental and reproductive toxicity. And clinical human data. An ontology was also developed.

Industry data contribution project

Previously unpublished data on chemicals tested to develop medicines (94 substances and 517 studies). Project is led by the European Federation of Pharmaceutical Industries and Associations (EFPIA).

Final remarks

- ECHA is proactive to promote NAMs, and our activities in this respect are going beyond the regulatory implementation
- NAMs can be utilised to refine, reduce and replace animal testing under the current system
- Case studies and sharing data accelerate the transition
- Awareness of the regulatory context is critical for a transition to an animal-test free system
- It is a collective effort and requires buy-in by all stakeholders

Thank you

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