



Chemicals – essentials

**The benefits, the hazards
- the regulation to control the risk**

The Danish Environmental Economic
Conference 2022

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Clean Water and Safe Chemicals

PREVENTION – critical for protection of humans and the environment



Hundredvis spiste giftigt – nu går myndighederne ind i sagen

36848

Federal Register / Vol. 87, No. 118 / Tuesday, June 21, 2022 / Notices

11. apr. 2021, 13:46



Foreningen har gennem de seneste 15 år haft køer græssende på en eng ned mod et vandløb, hvor også et afløb fra den lokale brandskole munder ud. Foto: TV 2 ØST



Her ses de fem kvier på marken ved den forurenede grøft, hvor et ophold på blot to en halv måneds i sommeren 2020 gjorde deres kød så giftigt, at det er farligt at spise. Privatfoto

predecessors

26 October 2021

Chronic RfD significantly lower than

United States

Risk assessment

PFAS

The US EPA has published a final human toxicity assessment for GenX chemicals assigning the substances a more protective toxicity value than the three other per- and polyfluoroalkyl substances (PFASs) the agency has so far reviewed.

ENVIRONMENTAL PROTECTION AGENCY

[FRL 9855-01-OW]

Lifetime Drinking Water Health Advisories for Four Perfluoroalkyl Substances

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability.

SUMMARY: The Environmental Protection Agency (EPA) announces the release of health advisories for four perfluoroalkyl substances (PFAS), including interim updated lifetime drinking water health advisories for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), and final health advisories for hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt (together referred to as “GenX chemicals”) and perfluorobutane sulfonic acid and its related compound potassium perfluorobutane sulfonate (together referred to as “PFBS”). EPA’s health advisories, which identify the concentration of chemicals in drinking water at or below which adverse health effects are not anticipated to occur, are: 0.004 parts per trillion (ppt) for PFOA, 0.02 ppt for PFOS, 10 ppt for GenX chemicals, and 2,000 ppt for PFBS.

0.004 ppt for PFOA,
0.02 for PFOS,
10 ppt for GenX



PREVENTION – critical for protection of humans and the environment

Hundredvis spiste giftigt kød i flere år – nu går myndighederne ind i sagen

11. apr. 2021, 13:46



Foreningen har gennem de seneste 15 år undersøgt og aflagt fra den lokale brand.



Her ses de fem kvier på marken ved den fjerde af de mere end 200 gjorde deres kød så giftigt, at

Source: 1) <https://nyheder.tv2.dk/samfund/2021/04/11/hundredvis-spiste-giftigt-koed-i-flere-ar-nu-gaar-myndighederne-ind-i-sagen> 2) P

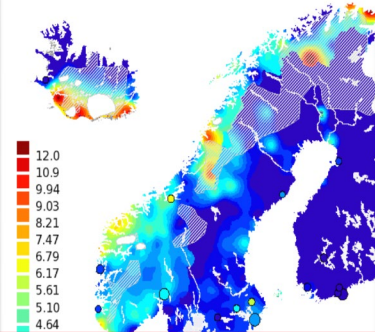
Bisphenol A: EFSA draft opinion proposes lowering the tolerable daily intake

Published: 15 December 2021

Draft TDI
0.04 ng/kg
BW/d



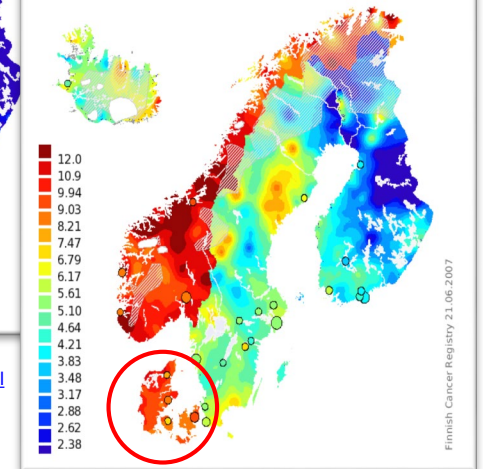
Testicular cancer, 1970-1976
Incidence / 100,000.



Testicular cancer, 1986-1991
Incidence / 100,000.



Testicular cancer, 1998-2003
Incidence / 100,000.



Where do we use chemicals?



Where do we use chemicals?



[Image Source: [Todd McLellan](#)]



Why do we use chemicals – and even very hazardous chemicals?

PFAS



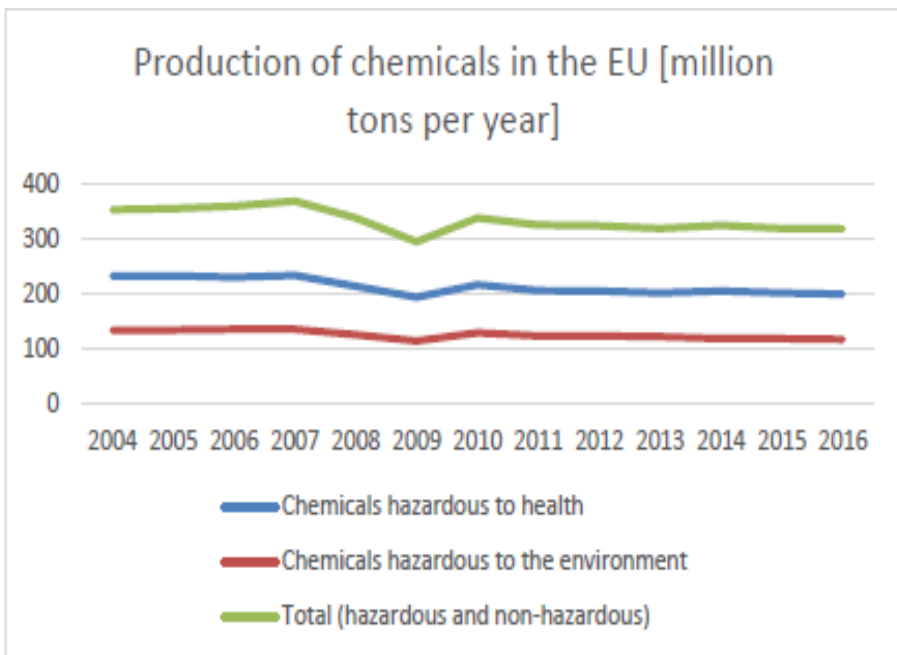
BPA



Nano SiO₂,
6PPD



Why do we need GETTING IT RIGHT?



EU chemicals production 2004-2016:

- **No move** towards **non-hazardous chemicals**

Sources: Commission staff working document to non-REACH fitness check, 2019 and Global Chemicals Outlook II, 2019

2000-2017: Global chemicals production capacity doubled

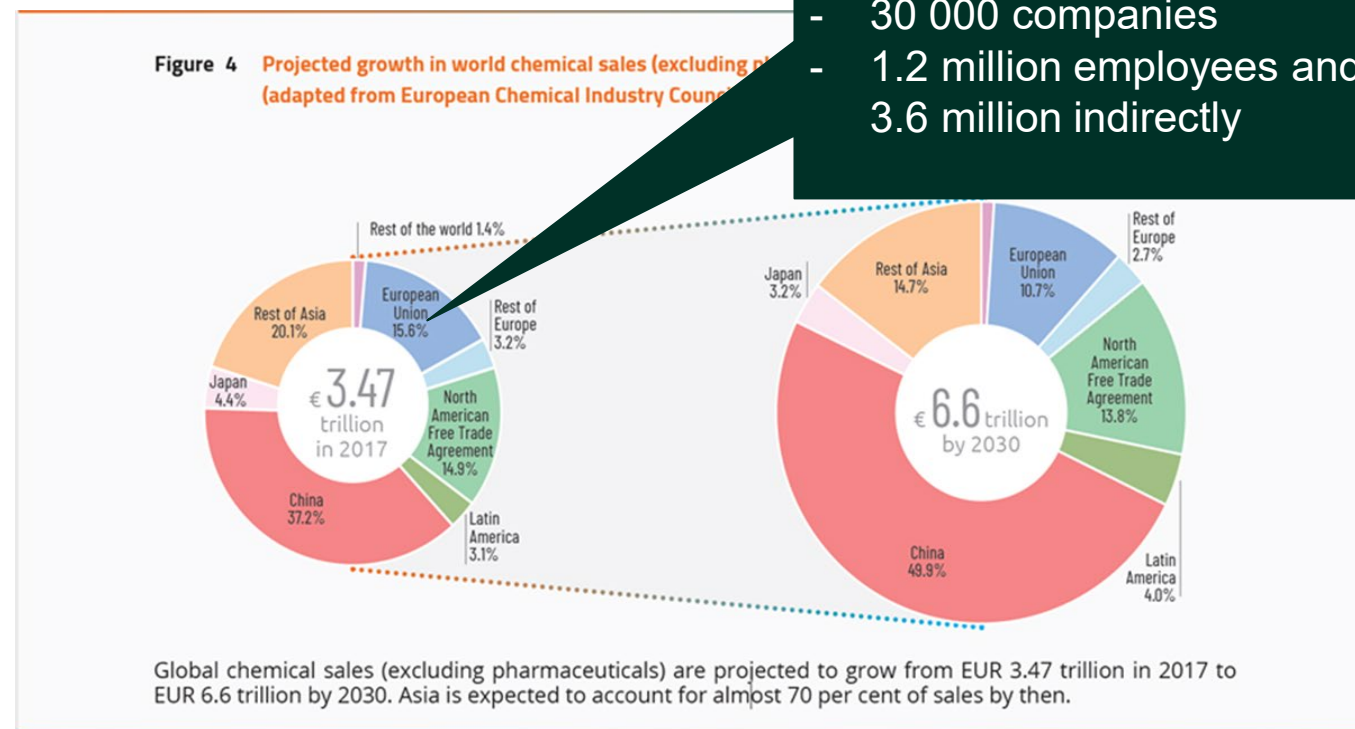
EU 2017 to 2030:

- Global market share: 15.6% to 10.7%

Asia: 70% of sales in 2030

Chemical manufacturing is:

- 4th largest industry in the EU
- 30 000 companies
- 1.2 million employees and 3.6 million indirectly



Costs of inaction

Endocrine disruptors:

- EU lost work capacity & health care costs **600 m€ /y** (NMR, 2014)
- Disease costs across life span associated with ED exposure in EU **157 bn € /y** (Trasande et al. 2015)

Carcinogenic substances:

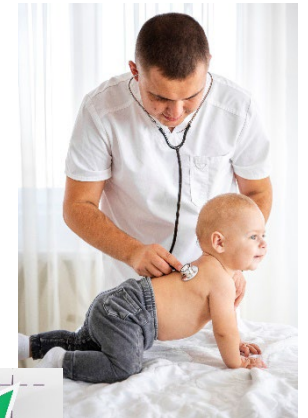
- Direct costs of work-related cancer **4-7 bn € /y**
- Indirect costs as much as **334 (242-444) bn € /y**

Fluorinated substances (PFAS) (NMR 2019)

- Health costs **2.8 – 4.6 bn € /y** for the Nordic countries and **52–84 bn € /y** for all EEA
- Non-health costs 46 million–11 bn € /y for the Nordic countries

EU Chromium VI restriction (SEAC 2013)

- Net benefit reach over **800 m€ /y** 20 years after adoption



How do we deal with risk posed by chemicals?

General EU legislation



- **CLP**: **C**lassification, **L**abelling and **P**ackaging of substances and mixtures
- **REACH**: **R**egistration, **E**valuation & **A**uthorisation of **C**hemicals + information & restrictions

EU Product legislation

- Product Safety, Cosmetics, Toys, Biocides, RoHS (electronics), F-gasses, Fertilisers



International agreements

- Stockholm, Montreal, Rotterdam , Minamata
 - most environmentally harmful chemicals og prior consent on export
- SAICM (Strategic collaboration) & OECD (test- og assessment methods)

National law

- Lead, phthalates, cadmium phosphorous fertiliser, microplastics in cosmetics m.fl.

Drinking water, Surface water, Industrial Emissions, Food, Air



Challenges for Chemicals Safety today – and in 2050?



- **Lack of harmonized criteria for “new” hazards**
- **Mismatch between available information and assessment needs**
- **>75% of all registered substances hazardous**
 - **If so, how to handle risk effectively and efficiently?**
 - **Bans/Restrictions time consuming & authorisations bureaucratic**
- **Lack of knowledge on end use and chemicals in products**
- **New exposure as materials enter circular economy**
- **Hazard and risk only one dimension of sustainability**
- **Global trade and competition**



From strategy to policy - GETTING IT RIGHT

- **Identify, communicate and handle chemicals of concern!**

Expand chemicals of concern: Endocrine disruptors, immunotoxic and neurotoxic substances
chemicals most harmful for the environment,



- **Improve data requirements!**

To eliminate knowledge gaps, avoid disputes and make requirements unambiguous

Match information requirements and hazard criteria



- **Make 'no data – no market' a reality!**



- **Communicate chemical content in products**

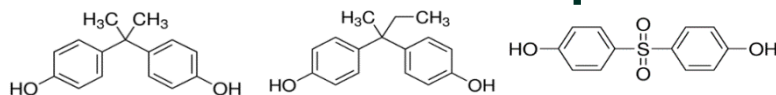


From strategy to policy - GETTING IT RIGHT

The Chemicals Strategy for Sustainability - a unique opportunity to get it right!

- **No chemicals of concern in consumer products!**

Group restrictions



- **limit the use of the most problematic substances to essential application**

- **Integrate restrictions and authorisations**



There is a need for GLOBAL FIRST MOVERS

Chemicals and products are traded globally



Urgent need for ambitious sound management of chemicals in EU and globally

EU chemicals policy drive change globally e.g. by

- New hazard classes first in the EU then globally
- Broad PFAS restriction supports current international activities
- Sustainability concept for chemicals will support circular economy & SDG implementation

EU chemicals policy is both a possibility and a challenge
for industry – and the rest of us!



EU fingerprint: high standards



Import / export



Take home message for a sustainable chemicals policy

- **Prevention for protection by:**
 - **Expand the concept of substances of concern & add new hazard classes**
 - **Get the data right that match hazard criteria & identify concern chemicals**
 - **Applying generic risk management as far as possible – ban the most harmful chemicals**
 - **No data – no market & equal standards no matter products origin**
 - **Define sustainability for chemicals – and show what you do**
 - **Set high standards for chemicals and products and profit on demands for safe and sustainable chemicals**
 - **Strive for ambitious global sound management of chemicals**





Miljøministeriet

Questions?

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