

REACH Revision: Solving Europe's chemicals and raw materials coherence

Europe is at a critical period in its twin transitions, needing to stimulate new investment into clean energy and digital value chains including raw materials supply and recycling. Without urgent action now, our continent will lose out to Asia in the 21st century technology race. According to EU Commissioner Thierry Breton: *“Above all, we need the capacity to separate, refine and recycle raw materials, which are too often concentrated in China”.*

It's crucial that the European Commission uses the REACH revision to give itself pre-emptive tools for alleviating the risk of uncoordinated chemicals policies impeding its Green Deal raw materials goals.

The problem to be solved

- Metals will make up most of the “critical chemicals” being newly defined under the European Commission’s forthcoming Chem4EU foresight analysis, due to their increased demand in the energy and digital transitions. A majority have direct or indirect hazardous properties. Batteries, solar PV, wind turbines, hydrogen fuel cells, power cables, digital technologies all contain metals with a defined hazard.
- The REACH Revision is an opportunity for the European Commission to take more early control of its chemicals regulatory processes and their links with other Green Deal priorities: including to ensure that metals in the EU raw materials agenda are not caught up in long unpredictable regulatory processes not fitted to their risk profile (in parallel to the EU’s stated objective of controlling harmful chemicals in consumer products).
- Companies making long-term investments into new European refining & recycling activities require regulatory certainty. The risk of unwarranted REACH bans or unpredictable extra compliance costs is proving a real disincentive to investors choosing the EU over competing markets. Recent examples impacting key green technologies have included on EV battery cobalt salts, the potential [lithium salts](#) classification, and decisions on lead impacting on aluminium, copper alloys and precious metals recycling (interdependent with lead). These examples will inevitably be followed by others as the regulatory process intensifies (see Annex 2).
- In the current REACH Regulation, the European Commission does not have effective oversight on the chemicals that get prioritized for risk management. There is no legal reference to a methodology that would allow it to identify up-front which specific risk management measures will be the most appropriate for each situation¹. This means that strategic metals get caught up in long regulatory processes which remove certainty for investors and threaten disproportionate bans or control measures not faced elsewhere in the world – while lacking a risk to human health or the environment.

Solution: The European Commission should use the REACH Review to strengthen the existing procedure for initiating risk management on targeted substances. It can increase its oversight by introducing a formal screening step, which allows it to agree in advance a proportionate direction for the materials that underpin the the green and digital transition or other strategic areas.

The Critical Raw Materials package should also confirm the need for coherent and effective chemicals legislation

¹ Most metals have a very low potential for substitution, and are refined and recycled in integrated processes linked to several other metals. The only way for Europe to achieve its raw materials and chemicals goals together is to focus on preventing harmful health and environmental exposure from metals - in circular loops that reduce the need for new primary extraction. Occupational Health and Exposure legislation, Industrial Emissions legislation and targeted restrictions can all be more effective than substitution-focussed authorization.



Our proposal – Giving the European Commission a new early strategic input

The REACH Review should introduce a pre-emptive screening step to the existing process for initiating risk management, which empowers the European Commission to define and agree a regular formal workplan for the substances proposed for taking forward¹

An advance workplan will give all DGs an overview of the substances being proposed for REACH risk management (and/or other environmental legislations) by Member States or the Commission. Through this, the Commission can prioritise which substances should be dealt with most urgently, and make early interventions when there are overlaps with other policy goals that should be solved in advance.

In the current system, the Commission has limited advance possibility to reflect collectively about the best direction for risk management before strategic materials are pushed down a specific route (i.e. authorization, restriction, occupational health, or separate substance or product legislations).

This has resulted in several proposals going forward that are incoherent with other objectives, which have then been delayed at the procedural level for multiple years. A screening step will lead to faster and more targeted risk management procedures, improving Europe's environmental protection without impeding other priorities.

As a part of the workplan, the Commission and its DGs should be able to:

- Screen the identified chemicals for strategic links to other policy priorities (e.g. raw materials for twin transition)
- Collectively agree an early recommendation for a strategic material's risk management option that achieves environmental protection in a joined-up way with wider EU goals (e.g. occupational health limits when exposure is limited to the workplace)
- Provide a quicker signal to investing companies on the framework that will eventually regulate their materials (increasing predictability without trade-off on environmental protection)

Without this necessary screening step being built into the existing framework, Commission will not have sufficient tools to prevent strategic raw materials investments being delayed by long and uncertain processes with an open risk of disproportionate outcome.

Case study of Cobalt Salts - Five cobalt salts used in electric vehicle batteries were evaluated and then under consideration first for authorisation under REACH and then for a REACH restriction procedure, before the European Commission eventually stopped it after six years in favour of setting binding occupational exposure limits (OELs).

Because the Commission had no formal route for selecting this direction in advance, its decision was ad-hoc. It will be unsustainable and too slow to make similar ad-hoc decisions for all other strategic chemicals falling under the REACH process.

NB. Changes to REACH will not fix the other big perceived issue of overly precautionary hazard classifications, as experienced now with lithium salts. This requires complementary changes in the CLP Regulation, for example adding a formal appeal process to ECHA's Risk Assessment Committee, or better ensuring international coherence.

The European Commission could also explore options for referencing its strategic and critical raw materials directly in the REACH text (other examples exist, like the defence sector exemption open to Member States).

¹ Substance submissions should currently be publicized on the [PACT list](#) and then reviewed by the [Risk Management & Evaluation Platform](#) (RIME). Our proposal can be built into this framework, e.g. through a strengthening of the PACT list and addition of the screening step there.



Annex 1: Examples of strategic raw materials investments delayed by today's EU Chemicals policy

- Lithium refining:** The EU's proposal to classify lithium compounds used in electric vehicle batteries as a Category 1A hazard is contributing to major uncertainty for new lithium refining investments, with companies raising [public concerns](#) about the scientific basis and other countries (Australia, US, Chile) openly questioning the approach taken. If a lithium classification does ever go forward, then investing companies will be in limbo for several years while the REACH process is carried out to define control measures.

Europe requires new lithium refining capacity as part of its battery supply chain, to process both primary and secondary raw material.

- Aluminium recycling:** European companies are [delaying investments](#) into new aluminium recycling plants and processes due to ongoing discussions on a potential strict classification/authorization of lead metal in its solid form. Aluminium alloys, like many others in the metals industry, contain lead at low impurity levels that would be targeted by the new rules, despite their being no evidence of harm.

Europe needs to grow its aluminium recycling capacity as scrap volumes increase, to supply low-carbon material to electric vehicles, grid infrastructure, and solar panels, and to help in diversifying away from today's primary aluminium imports from Russia (which comprise 20% of supply).

This will be made much more difficult if aluminium alloys are defined as hazardous mixtures despite having no environmental impact, and will encourage that Europe's valuable scrap is exported to other regions for recycling.

- Precious metals recycling:** Recycling processes to recover critical raw materials from electronics waste also rely on lead, which acts like a magnet to bring out low volumes of metals like silver, platinum, and various critical raw materials like indium and germanium.

New EU investments into electronics waste recycling will require a guarantee of future market for lead in this necessary Circular Economy application (opposite to the Chemicals Strategy for Sustainability's ambition to minimize and substitute hazardous substances in recycling streams).

Annex 2: List of metals with a level of hazard classification relevant under REACH

Over 80% of metals used industrially in Europe either have a classifiable hazard in some form or are commonly alloyed with other classified materials. This includes a majority of metals needed in the energy and digital transitions.

The first table lists the 21 metals that are/can be considered as Substances of Very High Concern under the REACH Regulation, according to their classification as CMR 1A, 1B but also respiratory sensitisers.

The second table lists a further 16 metals substances that would be categorised as a Substances of Concern under the Chemicals Strategy for Sustainability's definition, due to their chronic toxicity for human health (middle column) or the environment (right column).

The last table list 8 (out of 45 assessed) metals that would not fall under any SVHC or Substances of Concern definition: aluminium, boron, gold, iridium, iron, tin, tungsten. We highlight that several of these metals have potential issues from their common alloying materials or impurities (notably including iron/steel with several alloying elements and aluminium with lead impurities).

Some critical raw materials – such as rare earths – are not listed in the table below, as work is still ongoing to collect information and evaluate their hazard profile.



Substances of Very High Concern + ongoing proposals (e.g. CMR 1A, 1B, respiratory sensitisers)

SVHCs and potential SVHCs are subject to risk management measures under the REACH Regulation, which is in place to control their risks to human health and the environment.

Name of material / chemical	Examples of strategic uses	Current classification in Annex VI as CMR 1A, 1B, respiratory sensitisers (fitting SVHC definition)	Current classification in Annex VI as chronic toxicity human health (STOT-RE), skin sensitisers	Current classification in Annex VI as chronic toxicity environment (chronic 1 and 2) and self-classified as chronic
Beryllium	Aviation, Defence, Space	X	X	X
Beryllium oxide	Aviation, Defence, Space	X	X	-
Beryllium compounds	Aviation, Defence, Space	X	X	-
Cadmium sulphide, chloride, carbonate, hydroxide, oxide	Solar panels, batteries	X	X	X
Chromium VI compounds		X	X	X
Cobalt	Batteries, Catalysts	X	-	(X)
Cobalt compounds	Batteries, Catalysts	X (some are not classified)	-	X
Gallium arsenide	Solar panels	X	X	-
Indium phosphide	Semiconductors	X	X	-
Lead metal	Batteries, wind cables, solar, recycling	X	-	<i>proposal DK to classify as Cat 1</i>
Lead compounds	Batteries, wind, solar, recycling	X	X	X
<i>Lithium compounds (TBC)</i>	<i>Batteries, wind turbine greases</i>	<i>Proposal France to classify as CMR cat 1</i>	-	-
Nickel compounds	Batteries	X	X	X
Palladium compounds*	Catalytic converters	-	X	X
Platinum salts*	Catalytic converters, hydrogen	X	X	X
<i>Silver metal (TBC)</i>	Solar panels	<i>proposal Sweden to classify as CMR cat 1</i>	-	
Tellurium, tellurium dioxide	Solar panels	X	-	X
Titanium dioxide	Catalysts, defence	X	-	-

Additional potential Substances of Concern (e.g. with chronic toxicity for human health/environment)

A new category under public consideration, which would notably include the base metals copper, nickel, zinc, plus some critical raw materials (e.g. PGM derivatives). Almost all metals are included in this category for their toxicity for the environment.

Name	Current classification in Annex VI as CMR 1A, 1B, respiratory sensitisers (fitting SVHC definition)	Current classification in Annex VI as chronic toxicity human health (STOT-RE), skin sensitisers	Current classification in Annex VI as chronic toxicity environment (chronic 1 and 2) and self-classified as chronic
Antimony compounds			X
Arsenic	-	-	X
Other As compounds	-	-	X
Cadmium compounds	-	-	X
Copper	-	-	X (powder)
Copper compounds	-	-	X
Manganese (sulphate)	-	-	X
Nickel metal	-	X	X (powder)
Precious metals cyanides*	-	-	X
Rhodium compounds*	-	-	X
Ruthenium compounds*	-	-	X
Selenium	-	X (STOT-RE2)	(X)
Selenium compounds	-	X (STOT-RE2)	X
Silver compounds	-	-	X
Zinc	-	-	X (powder)
Zinc compounds	-	-	X

Metals not covered by SVHC or Substances of Concern definition

Name	Current classification in Annex VI as CMR 1A, 1B, respiratory sensitisers (fitting SVHC definition)	Current classification in Annex VI as chronic toxicity human health (STOT-RE), skin sensitisers	Current classification in Annex VI as chronic toxicity environment (chronic 1 and 2)	Additional challenges in common alloy forms?
Aluminium metal	-	-	-	Yes, due to impurities of lead (an SVHC) in aluminium alloys



Boron metal	-	-	-	
Gold	-	-	-	
Iridium metal and compounds	-	-	-	
Iron metal	-	-	-	Yes, due to the presence of hazardous alloying elements and /or impurities e.g. nickel, cobalt (SVHC)
Rhenium compounds	-	-	-	
Tin metal	-	-	-	
Tungsten	-	-	-	

