

MPTB and REACH update for ESCCON 2021

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ESA REACH Officer and MPTB Chair

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- ❑ Introduction to MPTB
- ❑ MPTB composition, task forces and working groups



- ❑ REACH Status Summary
- ❑ REACH in Numbers
- ❑ Example: Lead Metal
- ❑ European Space Sector Activities (REACH Risk Assessment)
- ❑ Individual WGs in focus
- ❑ Current Challenges beyond REACH



MPTB OVERVIEW

Materials and Processes Technology Board of the European Space Components Coordination (ESCC MPTB). The ESCC MPTB is a partnership between the **European Space Agency (ESA)**, **national space agencies**, and the European space industry represented by **ASD-EUROSPACE**; it is chaired at present by ESA. The European Defence Agency (EDA) is an observer.

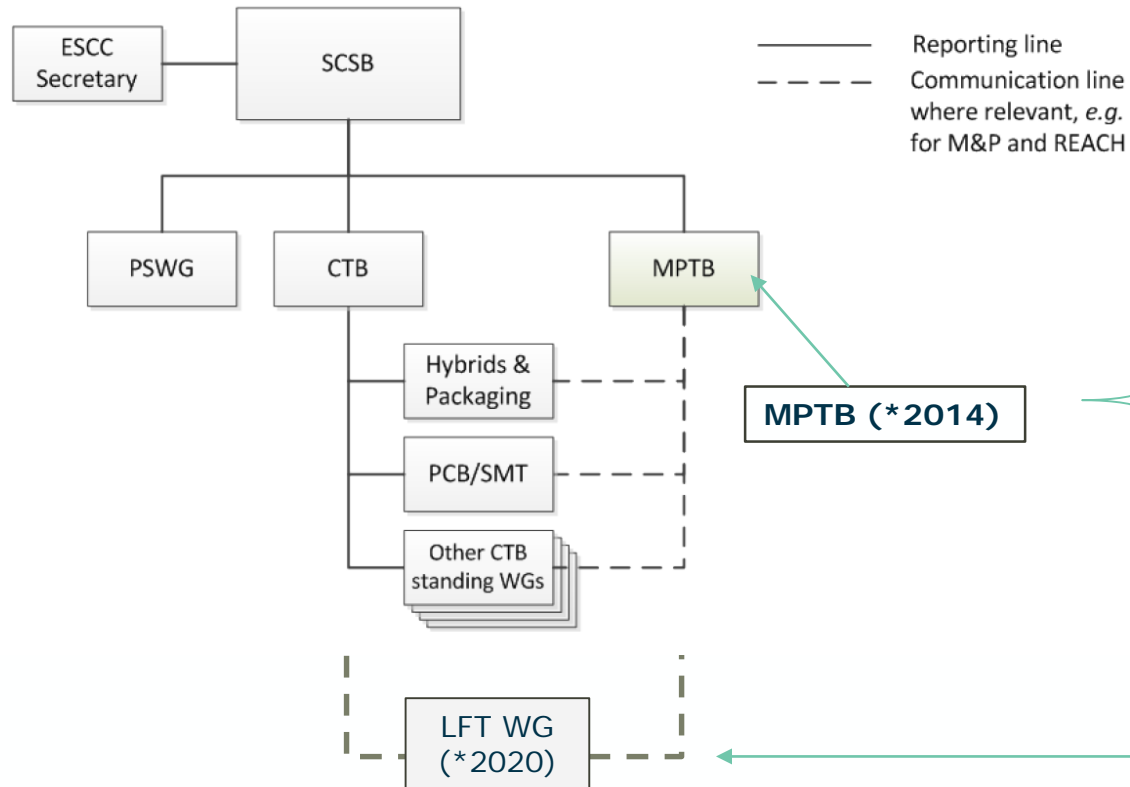
- ❑ **Exchange of information** on Materials and Processes.
- ❑ **Prepare roadmaps and work plans** for R&D activities aiming to secure the use of existing or new materials and processes in future space programs
- ❑ **Reduce dependence on non-European supplies** and promote the use of European technologies
- ❑ **Improve awareness** of the legislative processes (e.g. REACH) and of its consequences in order to coordinate preventive and corrective actions covering all space applications
- ❑ Monitor the **stability of supply chains** and mitigate obsolescence risks
- ❑ Promote **synergy** with other research or industrial groups
- ❑ Promote the **optimisation** of available resources, e.g. in the areas of standardisation, qualification and testing.

MPTB organisation and groups

MPTB Chair: P. Janik/ESA

MPTB Deputy Chair: C. Limacher/RUAG

Main distribution: 80+ members, 20+ entities



Working groups and Task Forces:

- ❑ **Hydrazine** TF (HTF), T. Becker/ReachLaw
- ❑ **Chromate** TF (STF), T. Becker/ReachLaw
- ❑ **Lead** TF (LTF), T. Becker/ReachLaw
- ❑ **Waste Framework Directive** (WFD TF), T. Becker/ReachLaw
- ❑ **ESMDB** Steering Board, A. Graham/ESA
- ❑ **Energetic materials** WG (EMWG), T. Becker/ReachLaw
- ❑ **Obsolescence** Splinter Group (OSG), V. Cocheteau/CNES
- ❑ **Long Term Storage** Splinter Group (LTS, Captain to be selected)
- ❑ Composite splinter (not active)

CTB/MPTB shared WGs:

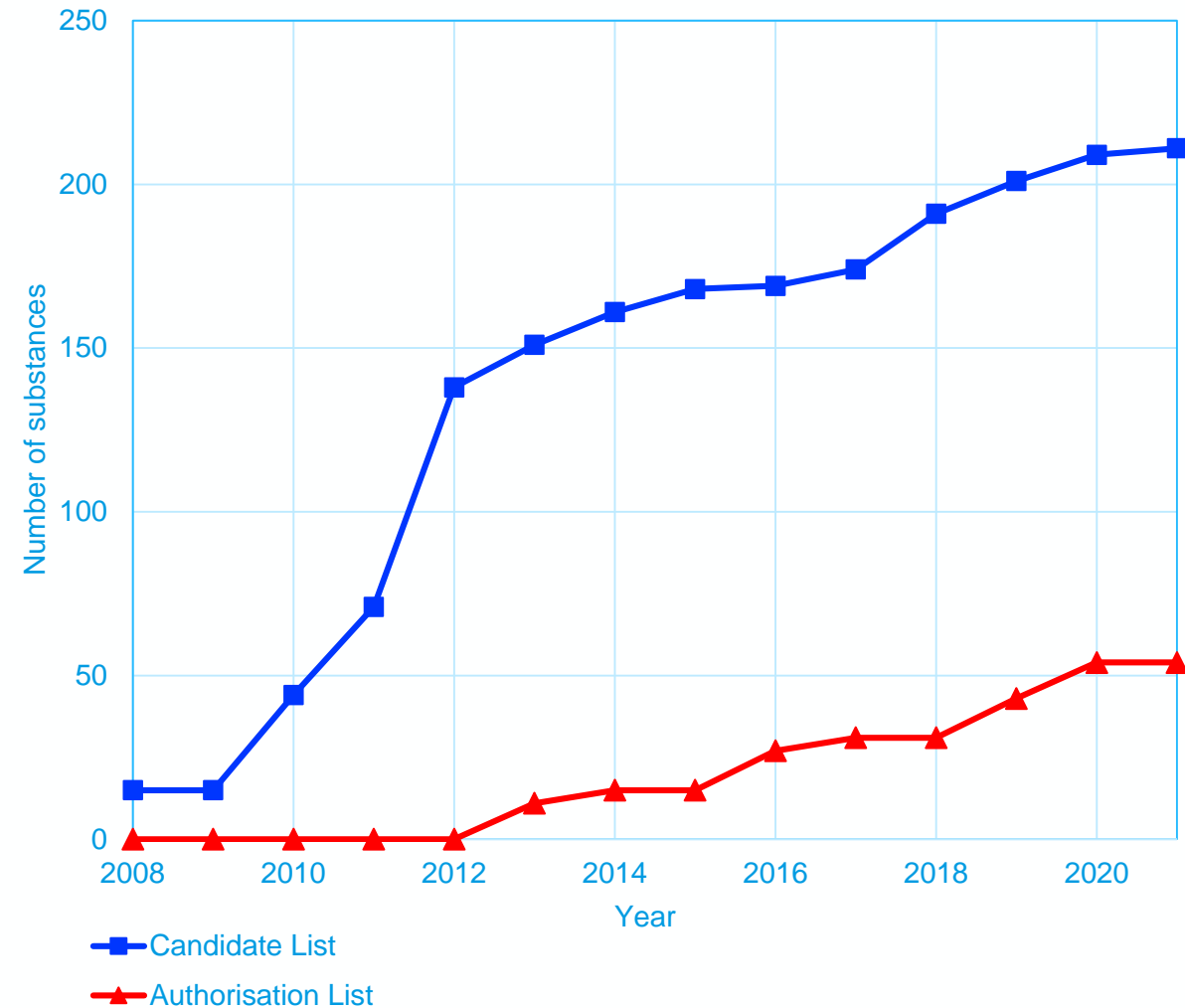
- ❑ **Lead-free transition** WG (LFT WG), G. Corocher/ESA

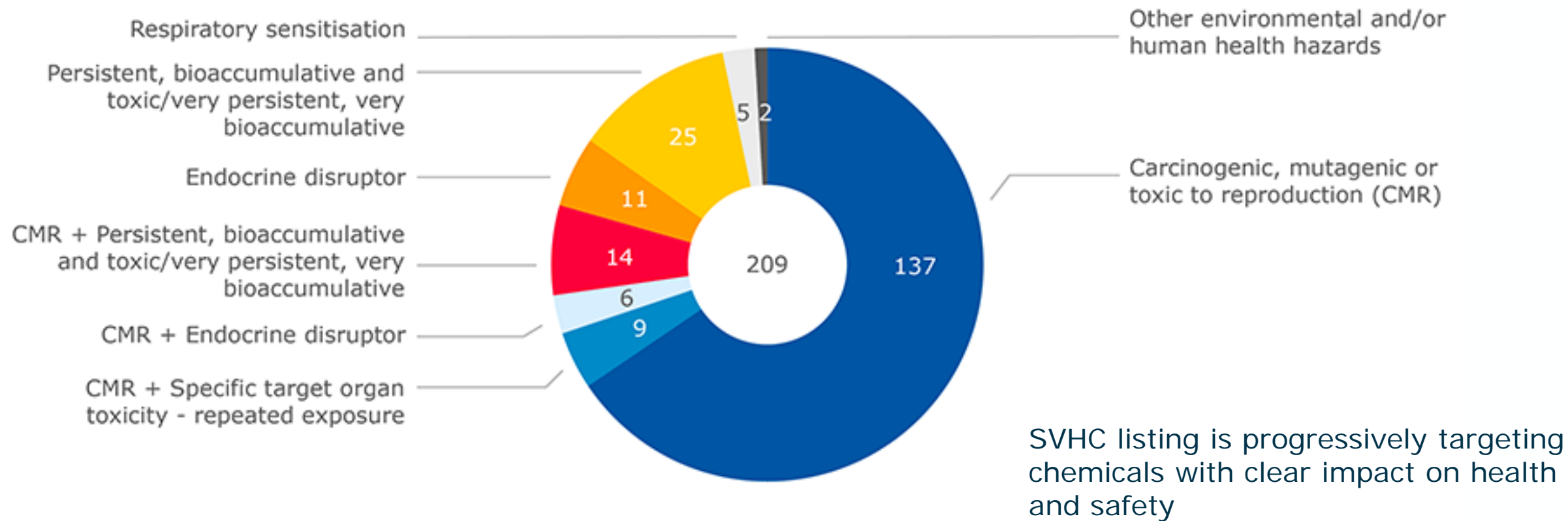
REACH STATUS SUMMARY

REACH Update by Numbers in 2021

Registration, Evaluation, Authorisation and Restriction of Chemicals

- EU REACH Registered substances: **>20,000**
- EU REACH registrations: **>100,000**
- ECHA's Cand. List -Substances of Very High Concern (SVHCs): **211**
- REACH Annex XIV –Authorization list: **54**
- REACH Annex XVII – chemical(s)-specific restrictions: **74**



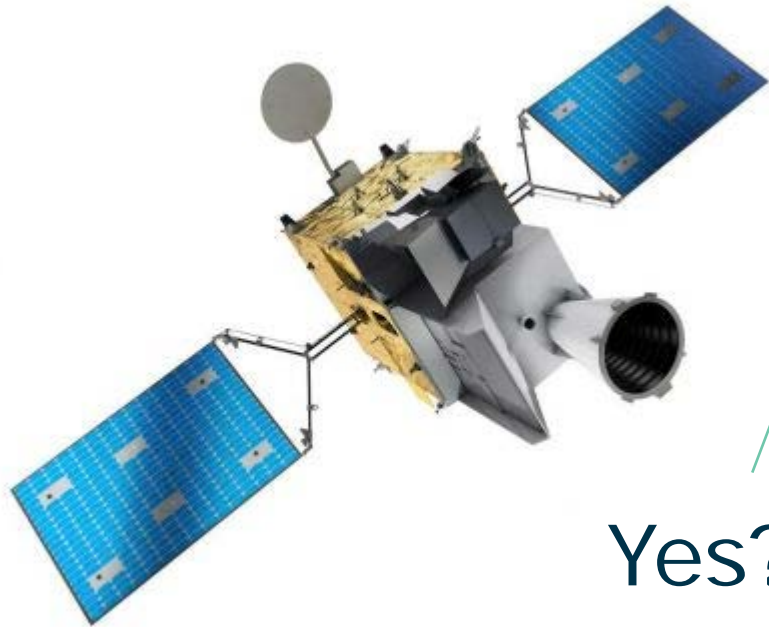


Source: <https://www.echa.europa.eu/-/candidate-list-update-four-new-hazardous-chemicals-to-be-phased-out>

EXAMPLE: LEAD METAL (Pb)

Example of REACH-affected Manufacturing Processes

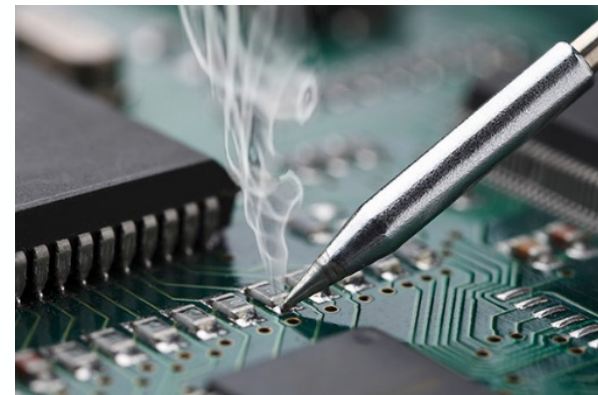
Are there any materials with SVHCs
 $c > 0.1\%w/w$?



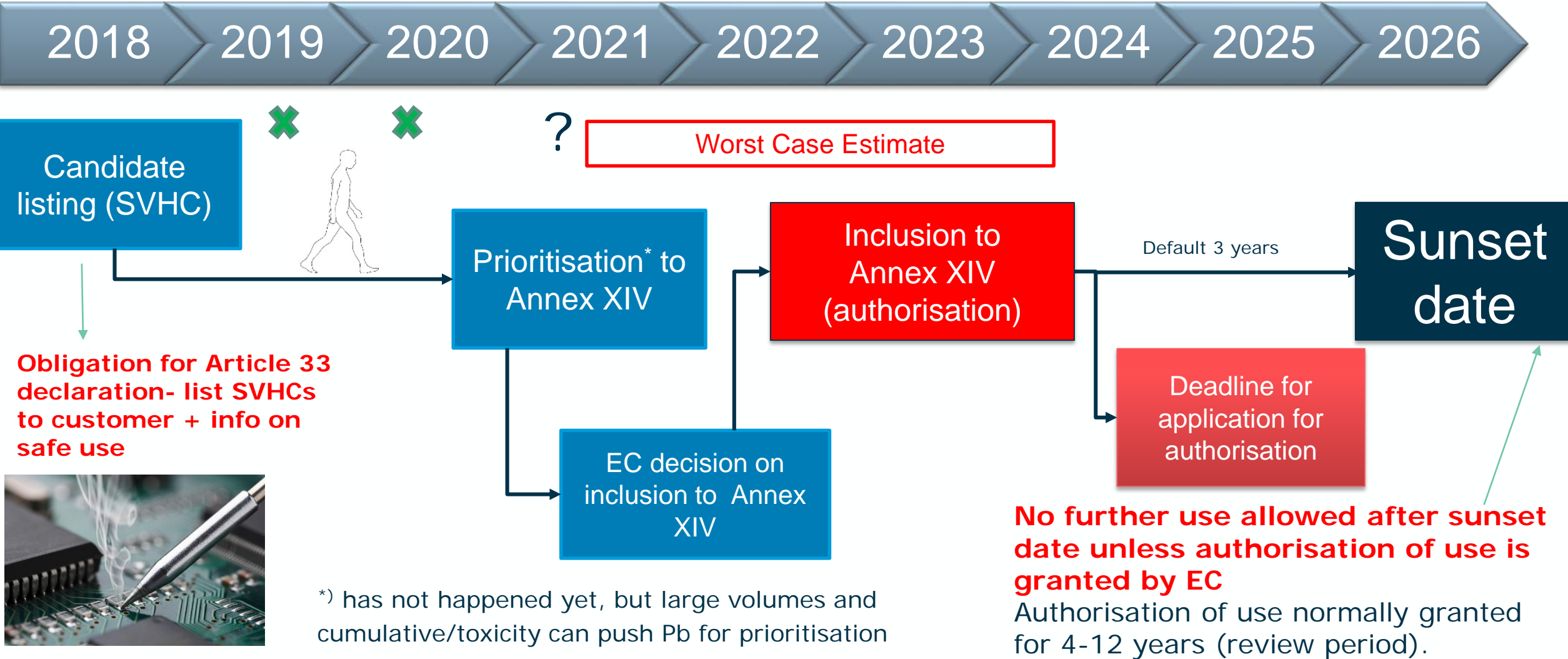
Yes?

Arbitrary examples (Art. 33 declaration):

- Solar arrays – Cr^{6+} based primers
- Pyro valves – phthalates
- PCDUs – B_2O_3 contained in insulators
- ...
- Electronic units – lead in solders

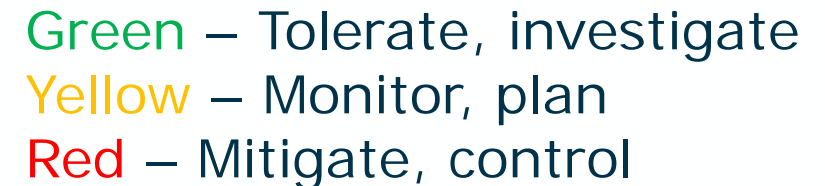


Example of Possible REACH Authorisation timeline for lead metal



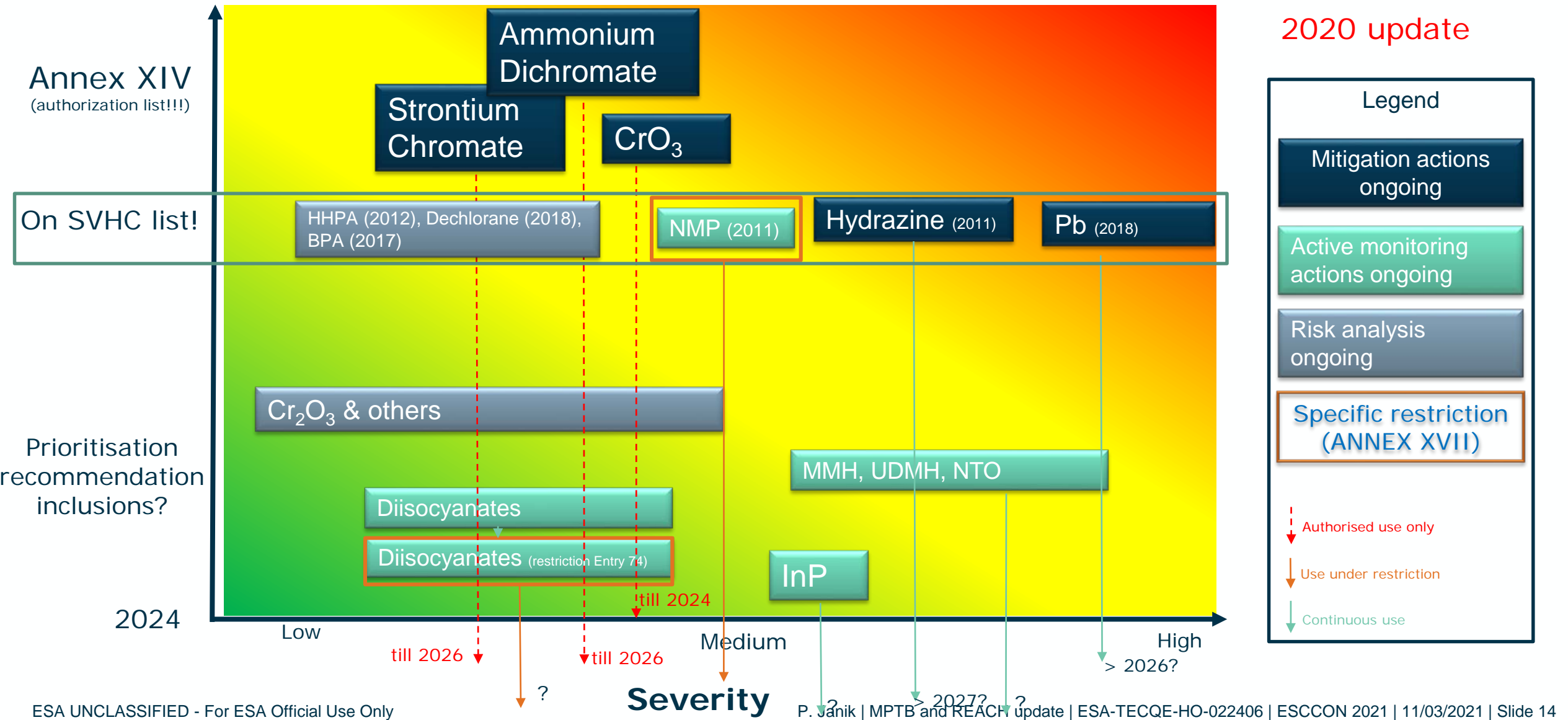
RESPONSE OF THE EUROPEAN SPACE SECTOR ON REGULATION

- Likelihood**
(worst case sunset date)



Risk Assessment for Selected Substances

2020 update



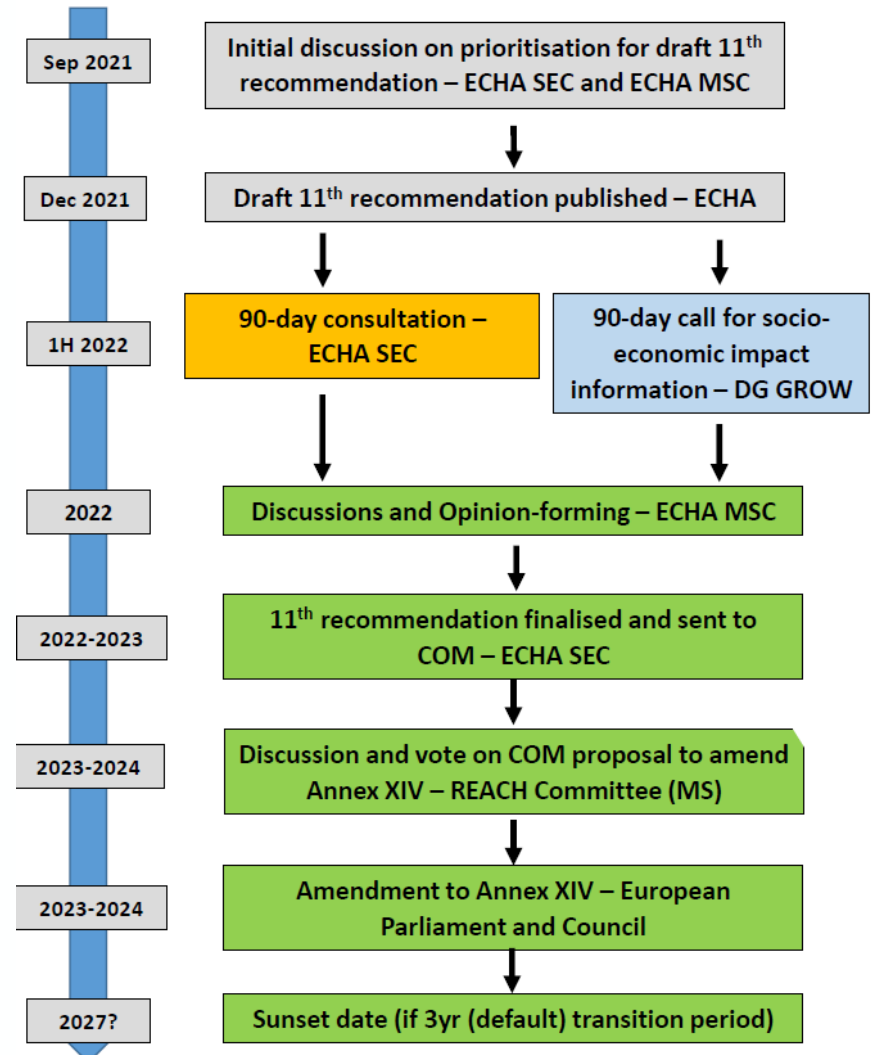
MPTB/Hydrazine Task Force

Main scope of the group is to monitor status of hydrazine with respect to REACH / Authorisation process

Hydrazine is still on the Candidate List and currently not proposed for Annex XIV

If proposed in the next round – expected to start in later 2021 – it could face a “worst case” sunset date in 2026/7 (see expected Annex XIV timeline on the right)

[ASD-Eurospace updated Exemption Position Paper](#) on Hydrazine, MMH, UDMH and NTO/MON-x was sent to the Commission in April 2020 for legal clarification.



Source: Lead REACH Consortium, 3.12.2020

- ❑ Group has been operational since 2020 as a response to the possible inclusion of the alternative propellants or explosives into SVHC/Authorisation list.
- ❑ The group has a large participation from manufacturers of propellants and explosives, as well as users among the European Space Sector ([ASD-Eurospace news](#))
- ❑ The scope of the group is to monitor REACH status and regulatory timeline for 53 substances, which are in current use or investigated for future use as propellants/explosives.
- ❑ Among them, some prospective alternatives for current chemicals may become obsolete due to REACH.
- ❑ Group regularly meets, updates the list and monitors the status.
- ❑ One of the latest changes impacting energetic materials is the REACH Restriction Entry 74 on the use of diisocyanate containing chemicals -> direct & indirect impacts on space industry are being analysed (not related exclusively to energetic materials, broader impact is anticipated).

- ❑ Group operational since 2020-> response to the possible inclusion of lead to the authorisation list.
- ❑ The formation of a dedicated working group for the lead-free transition was agreed **by MPTB and CTB** when the temporary Lead-Free Transition Task Force concluded.
- ❑ The goal is to drive the transition of the European Space Industry to the use of lead-free technologies for the manufacturing of electronics in the domain of EEE components, assembly technologies and PCB manufacturing.
- ❑ The group will monitor and report on the Roadmap implementation and promote the Roadmap actions with the funding bodies.
- ❑ Funding on research on lead-free alternatives is an essential element for the success of lead-free transition
- ❑ There are R&D activities ongoing to tackle lead-free issues, working group will monitor the progress, and share the data among the industrial partners as necessary.

Current challenges: REACH & Beyond



1. Waste Framework Directive – revised (SCIP notification)
 - EU aims to minimize waste and enable efficient recycling. This directive requires **article manufacturers** to provide SVHC information to the European Chemicals Agency's (ECHA) **database (SCIP) starting 5th January 2021**
2. UK Withdrawal from the European Union – UK REACH: **1st January 2021**
 - **Divergence of UK REACH from EU REACH expected**, e.g. equivalent for SCIP notification duty was NOT adopted, and more differences are to come
3. Non REACH related – EU regulation on conflict minerals
 - Legislation came into force **since 1st January 2021** (tin, tantalum, tungsten and gold)

Future challenges:

4. REACH Review: **Chemicals Strategy for Sustainability Towards a Toxic-Free Environment** ([link](#)), new categorization “Substance of Concern”, EC proposal expected in 2022

- ❑ From 1st January 2021 anyone making, selling or distributing chemicals in the UK and the EU needs to follow UK REACH and EU REACH rules
- ❑ In Northern Ireland EU REACH is due to apply also after 2020, subject to the “Protocol on Ireland / Northern Ireland”
- ❑ Direct info on REACH UK
<https://www.gov.uk/guidance/how-to-comply-with-reach-chemical-regulations#authorisations>

UK REACH Timeline



Source: REACHLaw, 14-2-2021

Link: [here](#)

Important Milestones and Support Papers in 2020/2021



- ❑ ASD-Eurospace: *Exemption Of Propellant-Related Use Of Hydrazine And Other Liquid Propellants From The Reach Authorisation Requirement*– [position paper HTF-ES-PO-2020-001 updated in 2020](#), paper addresses also other propellants on top of hydrazine,
- ❑ European Commission decision on Application for Authorisation for chromates granted (sodium dichromate and potassium dichromate, the review period ends 21 September 2024, for the other substances, the review period ends 22 January 2026),
- ❑ European Commission decision on Application for Authorisation for CrO₃ containing chemicals granted, ESA supports search for alternatives (e.g. Cr³⁺), paper (*Continued use of chromium trioxide in chemical conversion coatings for space hardware after the REACH authorisation sunset date on 21 September 2017*), updated in January 2021 -> [MPTB-ESA-MO-0067, currently published](#) by ASD-Eurospace.
- ❑ Waste Framework Directive -revised on submission of information on chemicals in articles to SCIP/ECHA came into force 5th January 2021 (request to European Commission on exemption for “articles send to space” without positive feedback), ESA supported generation of [Best-practice guidance \(MPTB-ES-GD-0047\)](#), paper has been updated as response to “ECHA SCIP requirements” from October 2020, published by ASD-Eurospace

- ❑ REACH and related regulations represent challenges for the European space sector
- ❑ New WFD and the submission additional information to the SCIP database of ECHA is beyond REACH Article 33 declaration requirements and in addition to REACH it may represent further constraints to the industry
- ❑ Nevertheless the European Space Sector stays up to date and is prepared for challenges associated with REACH, e.g. by coordinated the effort the with help of MPTB forum, with reparation of sectorial guidelines, position papers or guidelines for extended use under authorisation
- ❑ ESA REACH Office continuously monitors the evolution of REACH and associated regulations (e.g. the new UK REACH), as well as commercial obsolescence in Materials and Processes relevant to European Space Sector.

Thanks a lot for your attention

Any questions?

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