

REACH Update: U.S. Perspective

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5 December 2019

REACH Update: U.S. Perspective

- *Course overview:*
 - An update on progression of the REACH regulation and potential impact on and actions for DoD
- *Instructor:* Erin Yaeger
 - REACH Technical lead for Pratt & Whitney
 - International Aerospace Environmental Group's (IAEG) REACH Authorisation Risk Assessment WG Chair
 - Ethoxylates in Aerospace Authorisation (EAAC) Consortium Chair
 - Global Chromates Consortium for Aerospace (GCCA) Deputy Chair
- *Course Objectives:*
 - To provide updates to REACH regulation
 - Status of Authorisations relevant to Aerospace & Defense
 - *Role of Substitution in REACH*
 - Potential risks to DoD

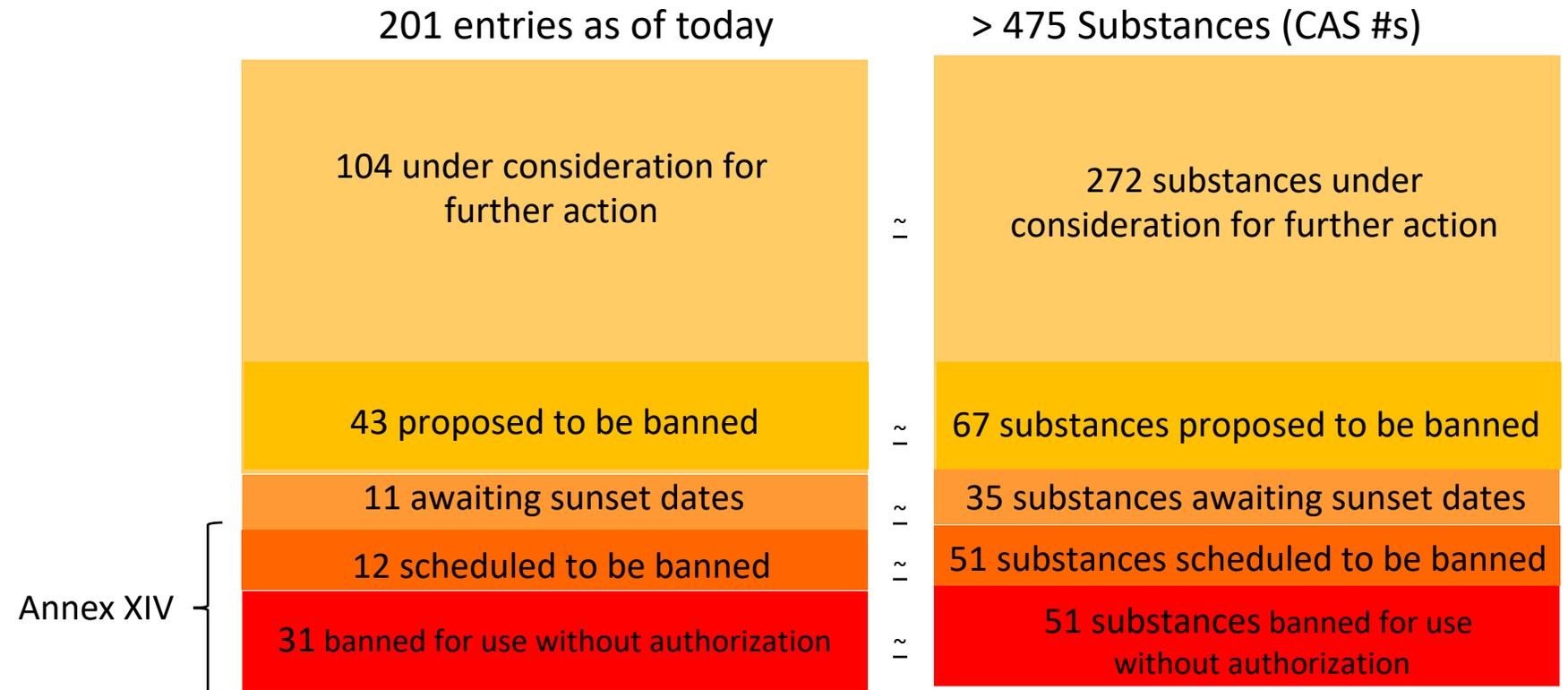
REACH Update: U.S. Perspective Agenda

- Current status of Candidate List and Annex XIV
- Aerospace & Defense (A&D) related Authorisations
- Supply Continuity risks

REACH SVHCs (Substances of Very High Concern) - A Moving Target

Candidate List Status

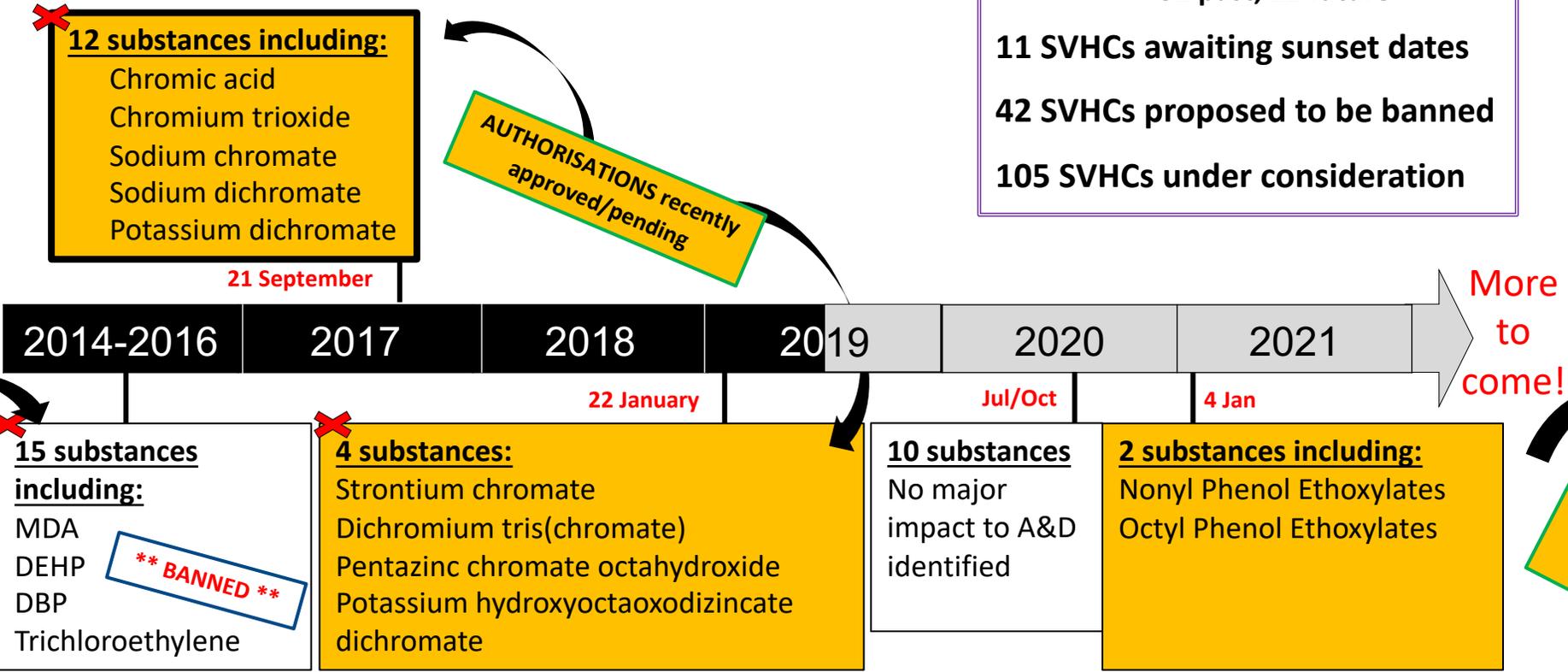
201 Entries equates to > 475 discrete substances



* CAS number count from IAEG's AD-DSL

Annex XIV SVHC Sunset Date Pipeline

43 SVHCs with sunset dates
 31 past, 12 future
 11 SVHCs awaiting sunset dates
 42 SVHCs proposed to be banned
 105 SVHCs under consideration

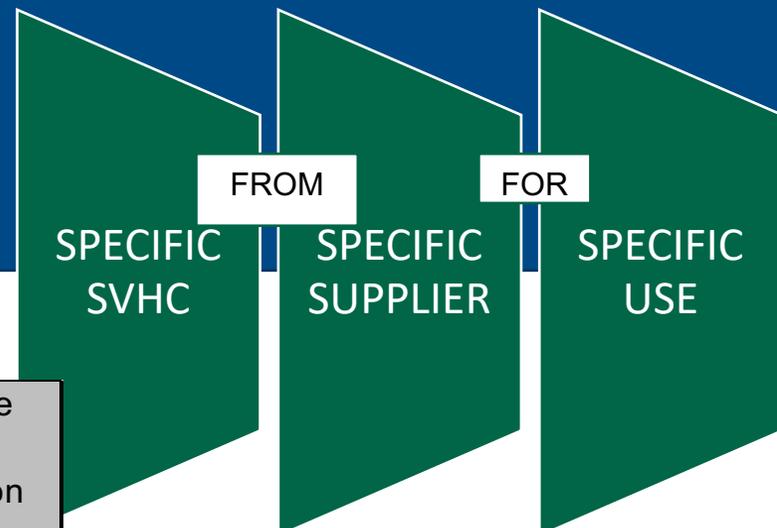


2 AUTHORISATIONS submitted; awaiting review

Upstream Authorisations Related to Aerospace & Defense Submitted by Three Consortia

AfA	Chromium Trioxide Authorization Consortium (CTAC)	Chromium VI Compounds for Surface Treatment (CCST) Consortium	Global Chromates Consortium for Aerospace (GCCA)	Individual Applications by Downstream Users
Date of Formation	2012	2013	2015	Various
Type of Application	Upstream	Upstream	Upstream	Downstream
Applicants	EU chromium trioxide importers, formulators and distributors	EU aerospace formulators and distributors	EU A&D distributors	Individual Downstream Users (E.g. Indestructible Paint)
Necessity	A&D companies / suppliers rely on this AfA for formulation and majority of uses of chromium trioxide	Aerospace companies rely on these AfAs for formulation and majority of uses of dichromium (tris)chromate, sodium dichromate, potassium dichromate, strontium chromate, pentazinc chromate octahydroxide and potassium hydroxyoctaoxo-dizincatedichromate	A&D companies rely on these AfAs for use of certain proprietary mixtures formulated outside the EU as supply chain not covered by CTAC or CCST. Also covers sodium chromate not covered elsewhere for aerospace use.	Individual A&D companies need downstream uses in unique circumstances (e.g. use of a product containing potassium hydroxyoctaoxo-dizincatedichromate following failure of a promising alternative)
Expected Date of Authorisation	Not known	Late 2019	October 2019	Various

AUTHORISATION IS GRANTED FOR:



SVHC	Substance / Formulation used	Your Direct Supplier	Formulator's or Importer's Name	Manufacturing Process	How is the SVHC / Formulation used?
Chromium trioxide	Chromium trioxide	Distributor A	Importer	Chromium plating (hard chrome)	Immersion bath
Chromium trioxide	Conversion Coating A	Formulator A	Formulator A	Chromic Conversion Coating	Immersion bath Brush Touch-up pen
Chromium trioxide	Slurry Coat A	Distributor A	Formulator B	Slurry coating	Gun Spray Brush
Potassium dichromate	Potassium dichromate	Distributor A	Unknown	Sealing after Chromic Acid Anodize	Immersion bath

First steps to determining requirements for using an authorised substance

1. Determine which SVHCs are in the chemicals / formulations used
2. Determine exactly how they are being used
3. Ask chemical provider / distributor under which Authorisation each chemical or formulation is being sold

Politics and Court Cases Impacting Authorisations

- EU Green groups taken majority
 - Focus on eliminating chemical use without business considerations
- EU Parliament twice voted on resolutions recommending the Commission to withdraw & modify Authorisation decisions.
 - Although non-binding, Commission must consider
- Brexit – UK is voice of reason in chemical prioritization debates
- Court rescinded an unrelated chromate authorisation
 - Introduces uncertainty for other Chromate Authorisations / applications
 - Resulting in increased requirements, scrutiny, (anticipated) legal challenges
- Threat of additional NGOs' law suits for Authorisations – potential unintended effects on aerospace application

Role of Substitution in Authorisation is Increasing

- Substitution plans will be required for future Authorisation applications
- Investment in alternatives' testing is critical to Authorisation approval, *but*
- Investment does not guarantee success
- Some challenges to Authorisation approvals are based on publically available information on “alternatives”

Authorisation was put in place for industries such as A&D

Substitution is end goal – *when technically feasible*

Safety & Mission readiness cannot be compromised

Caution Must be Taken Against Blanket Assumptions for Validation

- Each unique application must be considered & tested, even if ultimately validated as a “drop in replacement”
- Even apparently similar applications have unique properties and operating environments
- Alternatives presented as “validated for aero application”, but not tested for nor have met requirements for *all* aero uses
 - Chromated paint primer used differently on airframes than in engines or landing gear
 - Seldom, if ever, are “drop-in” replacements found for Cr⁺⁶ products
- **Risk of formulators / NGOs claiming existence of alternatives that do not apply to (all) aerospace hardware applications**



Obsolescence Risks are a Threat to Supply Continuity

- Formulator fatigue
 - Aerospace is small fraction of formulators' markets
 - Cost of REACH Authorisation and compliance is high
 - Authorisation list - moving target - requires continuous, expensive R&D and re-formulation
 - Business Case may not support continued supply
- Already examples of regrettable substitution (e.g. OPE in Cr-free primer)
- Increasing risk of multiple SVHCs in single formulation

Other Risks Associated with REACH

- Restrictions (Annex XVII)
 - Restrictions are continuously introduced into law under Annex XVII,
 - Contains both Restrictions and Bans on use and placing products on the market
 - Can include bans on substances in articles imported into EU
 - EEA sites using Annex XVII substances must abide by continuously growing list of restrictions
- New requirement for REACH-related info to be reported in public database developed for EU Waste Framework Directive (Substance of Concern In Products)
 - (Expanded) Article 33 data
 - Legal conflict with providing ITAR / EAR info
 - Possibility of Defense exemptions?
 - No allowance in WFD
 - Potentially via Treaty of Rome Article 296 (originally 223)?

EU Chemical Agency /REACH Reference Links

EU Chemical Agency (ECHA) website: <https://echa.europa.eu/>

REACH Candidate List: <https://echa.europa.eu/web/guest/candidate-list-table>

REACH Annex XIV SVHCs (Authorisation List): <https://echa.europa.eu/authorisation-list>

Authorisation Applications: https://echa.europa.eu/applications-for-authorisation-previous-consultations?p_p_id=viewsubstances_WAR_echarevsubstanceportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=2&p_p_col_count=3&viewsubstances_WAR_echarevsubstanceportlet_keywords=&viewsubstances_WAR_echarevsubstanceportlet_advancedSearch=false&viewsubstances_WAR_echarevsubstanceportlet_andOperator=true&viewsubstances_WAR_echarevsubstanceportlet_orderByCol=synonymDynamicField_302&viewsubstances_WAR_echarevsubstanceportlet_orderByType=asc&viewsubstances_WAR_echarevsubstanceportlet_resetCur=false&viewsubstances_WAR_echarevsubstanceportlet_delta=200

ECHA Q&A on REACH: https://echa.europa.eu/support/qas-support/qas?p_p_id=journalqasearch_WAR_journalqaportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=2&p_p_col_count=3

ECHA Q&A on Authorisation: https://echa.europa.eu/support/qas-support/browse/-/qa/70Qx/view/scope/REACH/Authorisation?journalqadisplay_WAR_journalqaportlet_INSTANCE_70Qx_backURL=https%3A%2F%2Fecha.europa.eu%2Fsupport%2Fqas-support%2Fbrowse%3Fp_p_id%3Djournalqadisplay_WAR_journalqaportlet_INSTANCE_70Qx%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_pos%3D2%26p_p_col_count%3D3

ECHA's instructional page on Notification Requirements for Use of Authorised SVHCs: <https://echa.europa.eu/support/dossier-submission-tools/reach-it/downstream-user-authorized-use>

REACH Authorisation Consortia & IAEG Websites

Chromium Trioxide Authorisation Consortium (CTAC) & Chromium VI Compounds for Surface Treatment (CCST) websites

Jones Day consortia launch page (Jones Day Consortia Manager): <https://jonesdayreach.com/substances/>

CTAC Q&A: <https://secureservercdn.net/166.62.113.120/a1r.52d.myftpupload.com/wp-content/uploads/Combined-2019-04-16-CTACSub-Consortium-combined-16-APRIL-2019-69-pages.pdf>

CCST Q&A: <https://secureservercdn.net/166.62.113.120/a1r.52d.myftpupload.com/wp-content/uploads/Relevant-information-for-purchasing-LoA-CCST-consolidated-4Sep17.pdf>

Global Chromates Consortium for Aerospace (GCCA) website: <https://ramboll.com/media/gcca>

Aerospace and Defence Chromates Reauthorisation: <https://www.adcr-consortium.eu/>

Ethoxylates Aerospace Authorisation Consortium (EAAC) website: <https://ramboll.com/media/eaac>

IAEG Authorisation Work Group (Work Group 5): <http://www.iaeg.com/workgroups/wg5/>