



Workshop on implications of use of trivalent chromium in functional plating with decorative character

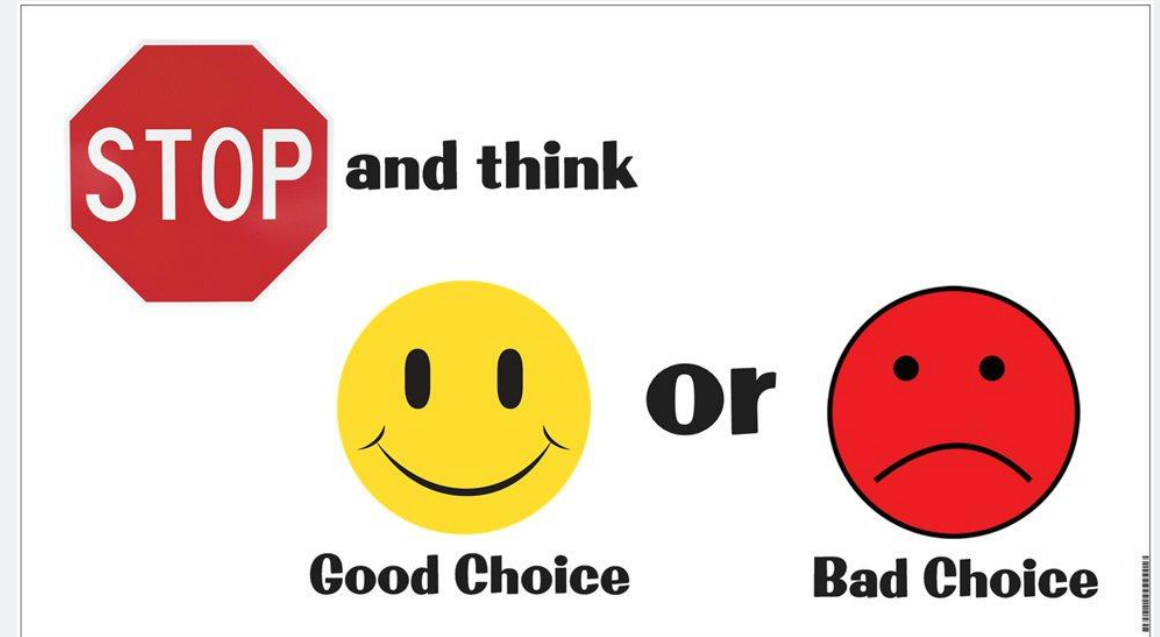
An introduction to the challenge of potential implications of the switch to Cr III

By Hugo Waeterschoot



The challenge

- Scoping
- Overall materials flow
- Potential concerns
- What do we want to understand better today
- An “overarching conclusion”



1. Scoping

- **IN:** The use of CrVI versus CrIII in functional plating with decorative character
- **OUT:** other uses (e.g. hard Chrome Plating)

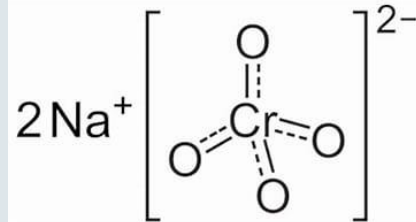


2. Overall materials flow

=> Cr VI

=> formulations

=> Plating



=> CrVI formulations

=> CrIII (formulations)

e.g. CrCl_3

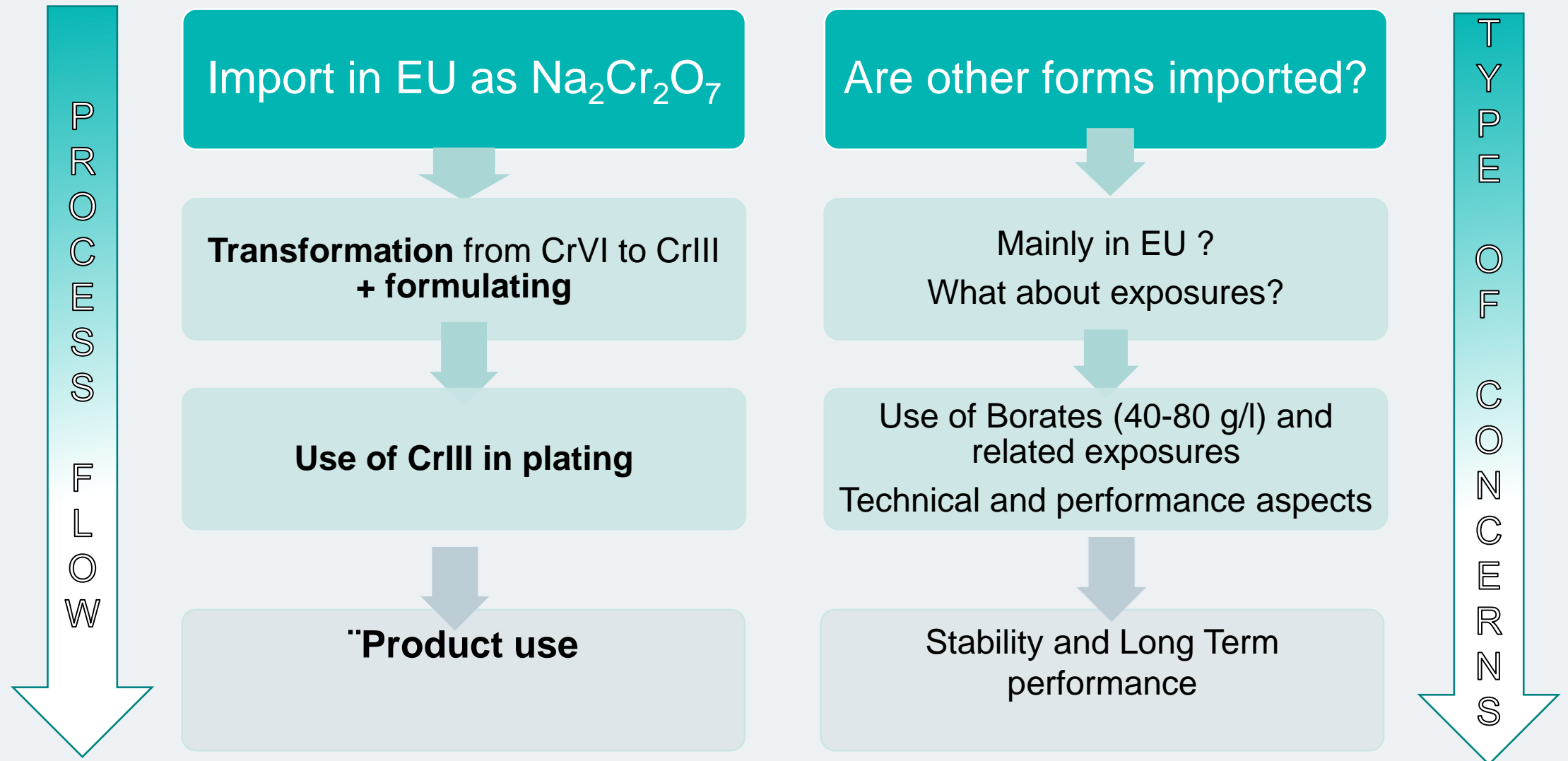
CrSO_4



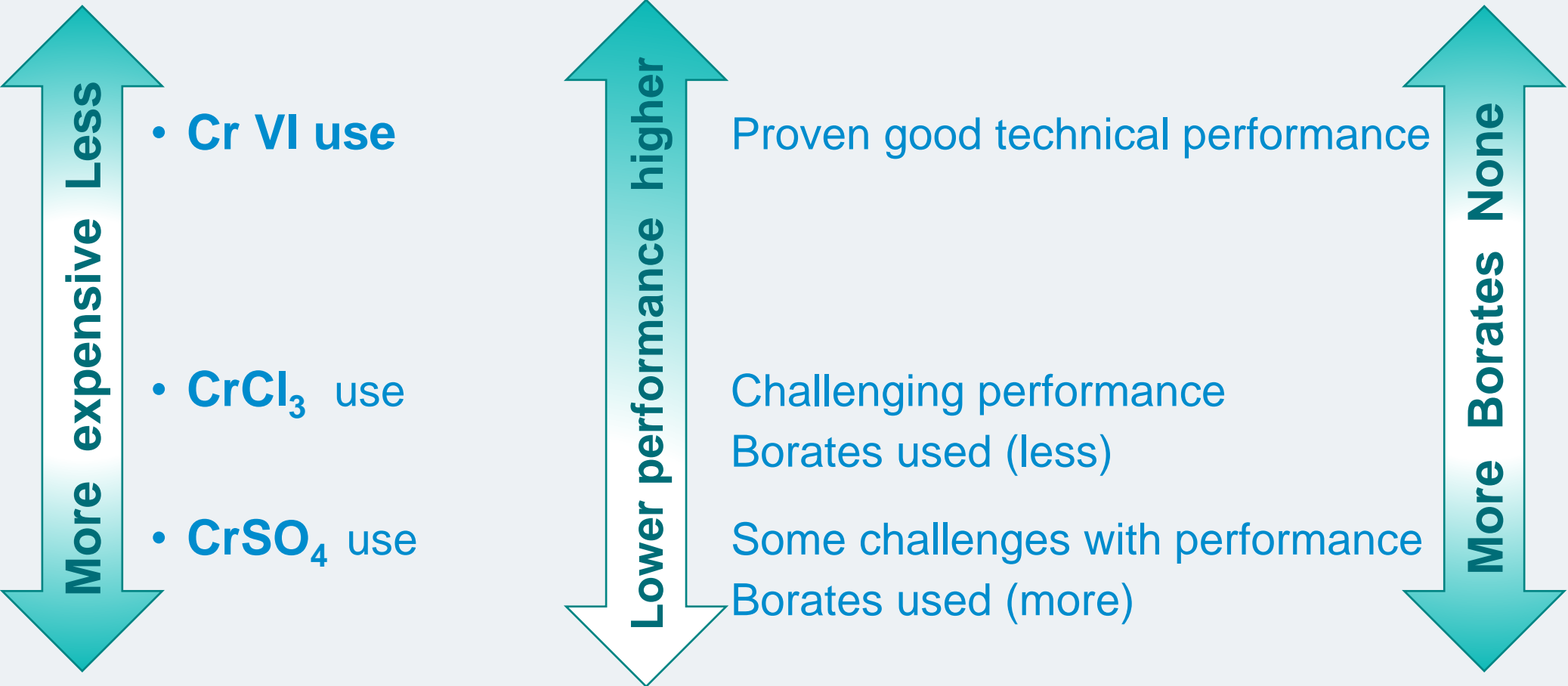
=> Plating

=> Plating

3. Potential concerns: Type of concerns



3. Potential concerns: competing challenges



4. What do we want to understand better today



- **Effects:**

- of Borates as a function of pathways
 - Workers inhalation and ENV release to water
- other toxicity endpoints of CrIII

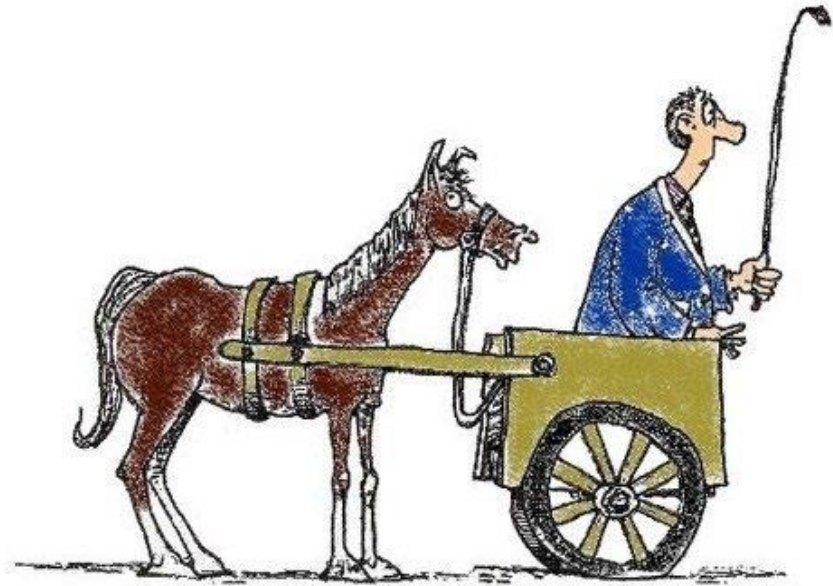
- **Exposure:**

- of Cr VI in different steps
- of Borates to workers and effluent waters

- **Materials flow:**

- CrVI to CrIII to Plating
- Function of Borates and are alternatives available/possible?

5. An “overarching conclusion”



Het paard achter de wagen spannen

Overall: “Safer” substitutes or substituting technologies should be carefully selected based on substance hazard and risks, as well as looking for upstream and downstream chemicals management challenges.

THANK YOU

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