Asbestos Part 1
(Chrysotile Asbestos);
Regulation of Certain Conditions of Use Under the Toxic Substances Control Act (TSCA)

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Virtual

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Chlorine, produced using asbestos diaphragms in the chlor-alkali condition of use, is critical to ensuring Americans have clean drinking water, a pillar of public health. In a tight market like chlorine, where there is **no excess supply**, it is imperative that companies have adequate transition time to stagger conversions.

Agenda

- Criticality of Chlorine
- Chlor-Alkali: Fifteen Years to Transition is Crucial
- ECELs: Implementation Concerns
- Allow Asbestos Gaskets to Complete Their Useful Service Lives

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Criticality of Chlorine

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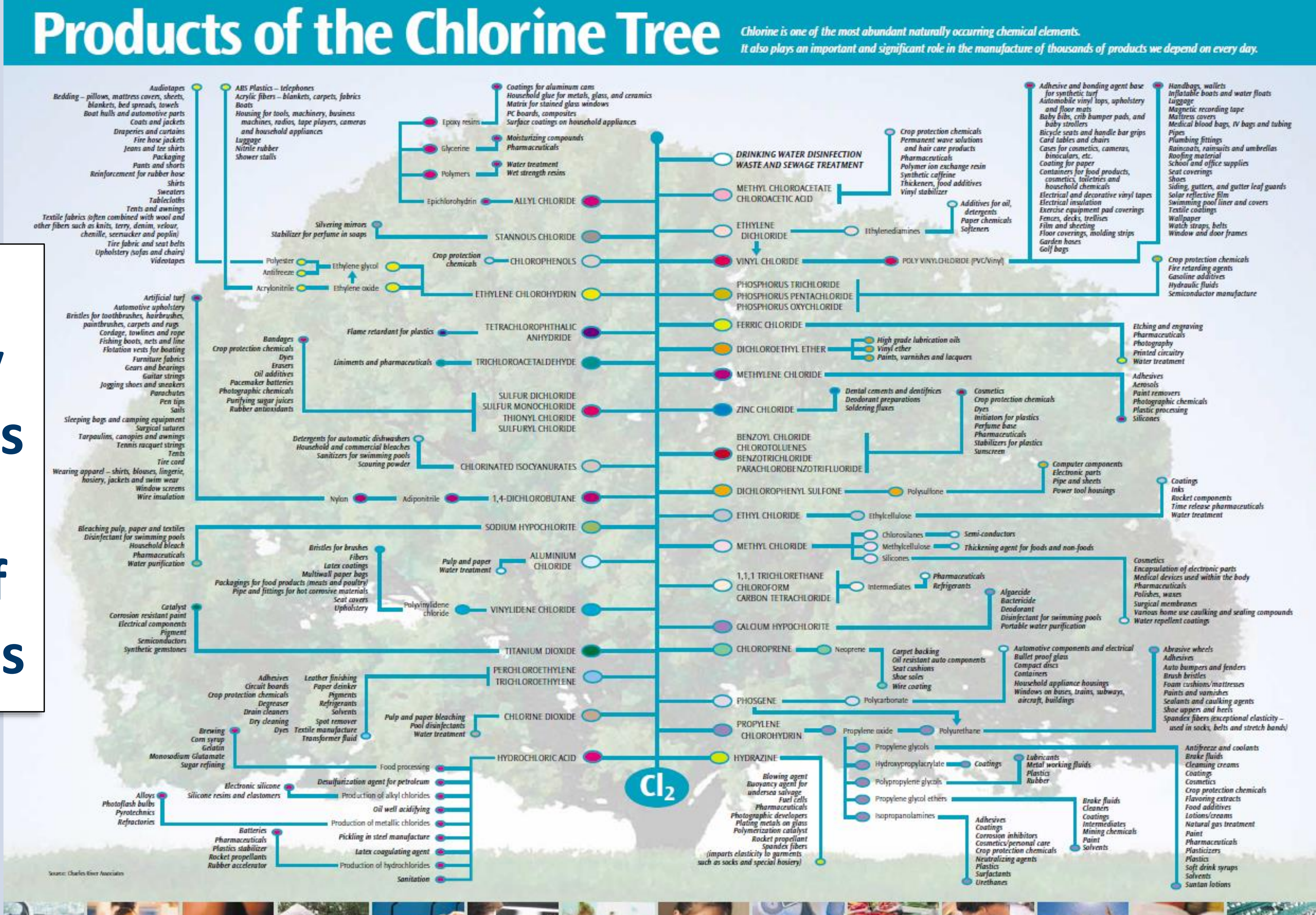
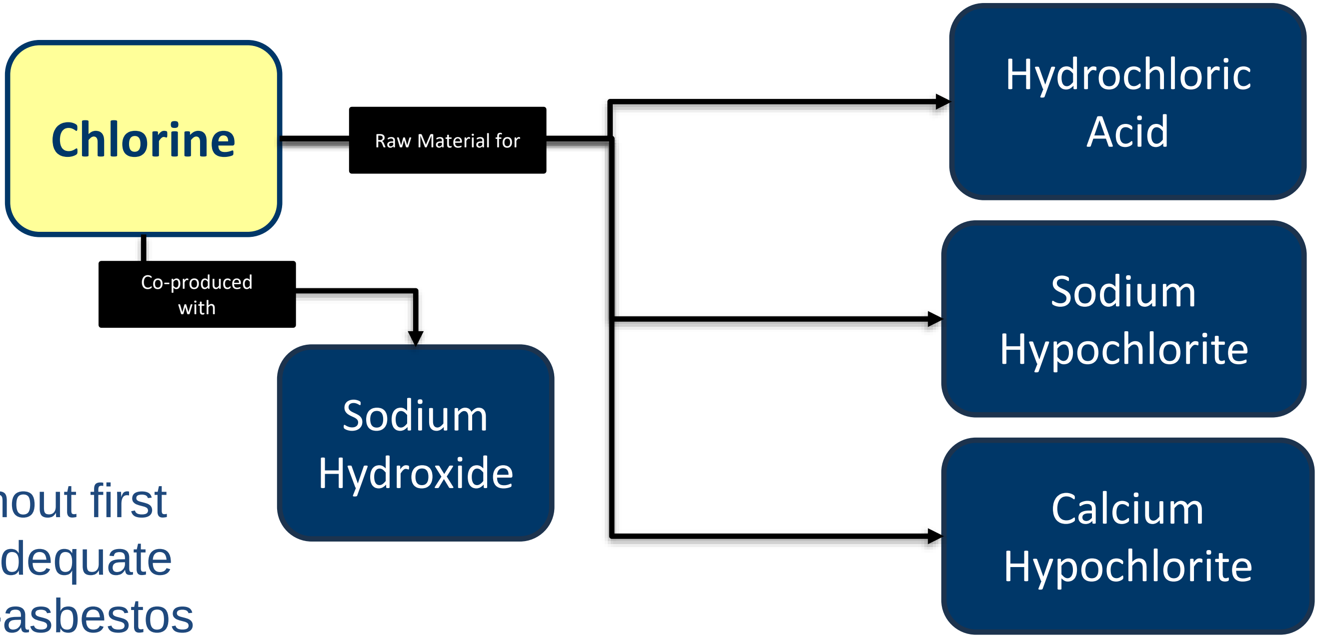
Chlorine Chemistry Contributes to a Myriad of Innovations



Focus on One Use: Water Treatment

Chlorine is a co-product or raw material for disinfectants and water treatment chemicals

- National Primary Drinking Water Regulations **require** residual chlorine.
- 40 CFR 141.72 Subpart H mandates that any public water system that relies on surface water or ground water under the influence of surface water must perform a two-step disinfection process. **The only acceptable disinfectants for the second step are free chlorine, chloramines, and chlorine dioxide.**
- Disinfection of drinking water cannot occur without first generating chlorine. Any final rule must allow adequate time for chlorine producers to transition to non-asbestos technologies so they can supply the chlorine necessary to support public water systems.



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Chlor-Alkali: Fifteen Years to Transition is Crucial

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Transition Challenges at Chlor-Alkali Facilities

Electrochemical Expertise

- Transitions necessitate design of chlorine production and auxiliary equipment at multiple facilities
- Design activities are very detailed and require specialized electrochemical skills
- Specialized expertise must be assigned carefully to support both design work and ongoing operations

Permitting

- Detailed information required in the application
- Can take a year or longer
- Construction cannot begin before permits are secured

Supply, Manufacturing, and Construction

- Metal supply for electrolyzers for membrane conversions remains tight
- Global manufacturing capacity for membranes and non-asbestos diaphragms is limited
- Construction requires specialized labor, for example:
  - Welders
  - Pipefitters
  - Schedulers
  - Engineers

Start Up

- New construction and converted plants require significant time to start up safely
- Operations personnel must be trained on new equipment

Transition Challenges for the Nation

- There is currently limited-to-no spare chlorine production capacity in the United States, Canada or Mexico. Lack of excess chlorine supply make it impossible to compensate for a decrease in production as a result of an expedited asbestos phase out.

- Both available technologies for transition present unique challenges:
  - Membrane:
    - No “drop in” replacement, minimum 5-year capital project for conversion from asbestos diaphragm technology to membrane technology
    - Competition for membrane technology from growing water electrolysis demand
  - Non-Asbestos Diaphragm:
    - Only two suppliers of non-asbestos diaphragm material supply all non-asbestos diaphragm chlorine production facilities

- Companies with multiple facilities must stagger conversions sequentially to ensure an uninterrupted supply of chlorine.

ECELs: Implementation Concerns

ECEL Concerns and Implementation

- Proposed existing chemical exposure limit (ECEL) is significantly lower than the OSHA permissible limit of 0.1 fibers/centimeter^3.
- Achieving such a low ECEL presents feasibility challenges; current technology cannot measure down to 10% of the ECEL or the action limit, which is the minimum range recommended by NIOSH for sample reliability.
- The ECEL should be calculated based on time spent completing tasks with potential exposure.
- At least two years should be allowed to implement the ECEL to allow for measurement methods that may need to be validated by labs or reassessed to measure ECEL, particularly for short term tasks.
- **For tasks where there is a risk of exposure and respiratory protection is required in the Exposure Control Plan, the assigned protection factors (APFs) for respiratory protection used during short-term tasks should be considered when evaluating compliance with the ECEL.**

Allow Asbestos Gaskets to Complete Their Useful Service Lives

Allow Gaskets to Complete Their Useful Service Lives

- Asbestos gaskets currently in use can be used for decades. When in use, there is little to no exposure to workers nor the environment. Asbestos gaskets have a plethora of applications beyond chlorine production.

- Gaskets are placed in transition spaces. In these closed systems, one example application of asbestos gaskets is in between the flanged edge of portions of piping.

- Asbestos gasket replacement necessitates purging contents prior to removal. Depending on the process, this can be done by rerouting materials in a bypass line or, as often is the case in older facilities without bypass mechanisms, shutting the entire plant down.

- It can cost approximately $30,000 per gasket replacement when accounting for the maintenance costs and lost chemical production. Sites may have thousands of asbestos gaskets in place.

- **EPA should allow the continued use of currently in service chrysotile-containing gaskets at chemical facilities until they reach the end of their usable life.**

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Summary

Chlorine is vital. Chlorine producers are a key contributor to critical infrastructure. The final rule for Asbestos Part 1 should:

- Allow for a fifteen-year transition time for the chlor-alkali condition of use
- Allow use of APFs for compliance and adequate time for ECEL implementation
- Allow asbestos gaskets to stay in service through their usable life

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