



January 27, 2023

Clerks' Office
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: California Air Resources Board (CARB) Proposed Amendments to
the Airborne Toxic Control Measure for Chromium Electroplating
and Chromic Acid Anodizing Operations

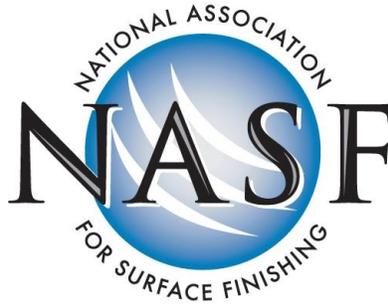
Dear Sir or Madam:

Enclosed please find comments submitted on behalf of the National Association
for Surface Finishing (NASF) regarding the California Air Resources Board (CARB)
Proposed Amendments to the Airborne Toxic Control Measure for Chromium
Electroplating and Chromic Acid Anodizing Operations

If you have any questions, would like additional information, or would like to discuss
these comments, please contact me by telephone at 202-257-3756 or by email at
jhannapel@thepolicygroup.com.

Respectfully submitted,

Jeffery S. Hannapel
The Policy Group
On Behalf of NASF



January 27, 2023

**Comments on the California Air Resources Board (CARB)
Proposed Amendments to the Airborne Toxic Control Measure
for Chromium Electroplating and Chromic Acid Anodizing
Operations**

These comments are submitted on behalf of the National Association for Surface Finishing (NASF) regarding the California Air Resources Board (CARB) Proposed Amendments to the Airborne Toxic Control Measure for Chromium Electroplating and Chromic Acid Anodizing Operations. NASF urges CARB to consider the comments below to eliminate the bans on hexavalent chromium plating and anodizing and to implement an emissions-based rule to reduce hexavalent chromium emissions from the surface finishing industry in California.

I. Summary of the Surface Finishing Industry

The NASF has approximately 1,000 members that include surface finishing companies, surface finishing suppliers, and individual and professional members, including our members in California. The NASF represents the business, management, technical, and educational programs, as well as the regulatory and legislative advocacy interests of the surface finishing industry to promote the advancement of the North American surface finishing industry globally.

The surface finishing industry plays a vital role in the lives of consumers and in the nation's economic future. The industry's role in corrosion protection alone provides an estimated \$200 billion annual economic benefit to the nation, including significant applications for national defense, and enhances our society's productivity, safety, and quality of life. The many industries that rely on metal finishing include: automotive, aerospace and defense, industrial equipment, computers and electronics, medical equipment, tools and dies, shipbuilding, agriculture, oil and gas, furniture, steel mill products, jewelry, plumbing fixtures, household appliances, and construction.

Approximately 90 percent of surface finishing companies employ fewer than 75 people, while nearly 70 percent employ 20 or fewer people.

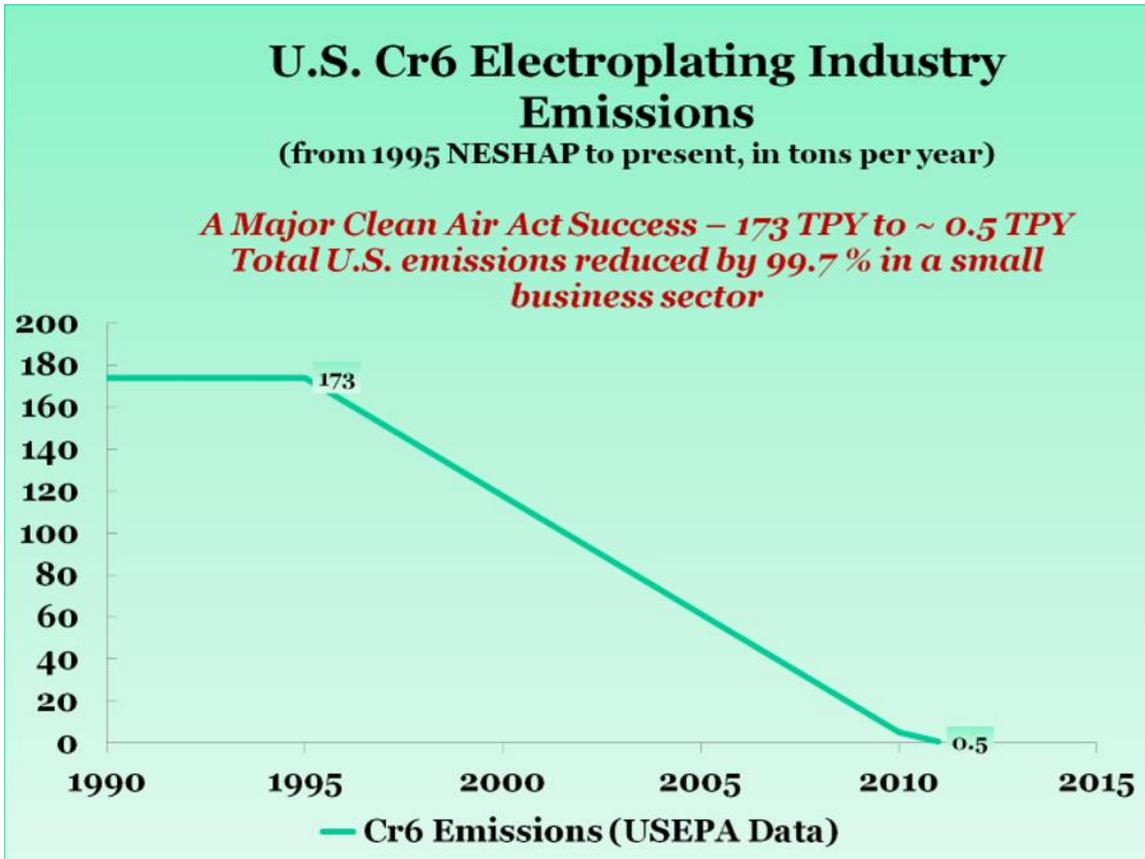
II. Specific Comments on CARB Rule

NASF urges CARB to reconsider the bans on decorative hexavalent chromium plating, hard hexavalent chromium plating, and chromic acid anodizing. The bans would provide little, if any, environmental benefits, will not decrease customer demands for hexavalent chromium plating and anodizing, will impose undue economic hardships on California plating shops, and will likely result in a net increase in hexavalent chromium emissions. For the reasons stated below, an emissions-based rule could continue the surface finishing industry's long-standing record to reduce hexavalent chromium emissions without imposing significant economic hardships on California plating companies and the communities that they serve with good paying jobs and financial contributions to local businesses.

Industry Has Significantly Reduced Hexavalent Chromium Emissions

Since 1995 the surface finishing has implemented effective emission control measures and has significantly reduced hexavalent chromium emissions. As part of its 2012 Hexavalent Chromium Electroplating and Anodizing National Emission Standards for

Hazardous Air Pollutants (NESHAP) rulemaking, the U.S. Environmental Protection Agency (EPA) estimated that the industry had reduced hexavalent chromium emissions by 99.7 percent. After revision of incomplete and inaccurate emissions data, the estimated reduction was corrected to over 99.9 percent.



Due in part to the stringent emissions requirements in California, the reductions of hexavalent chromium emissions for the surface finishing industry has been even greater in California. This risk reduction and management success for hexavalent chromium emissions should be extended with further reductions through an emissions-based rule supported by reasonable and appropriate control measures. Such successful risk reduction measures have not, and will not, result from bans on hexavalent chromium plating and anodizing in California.

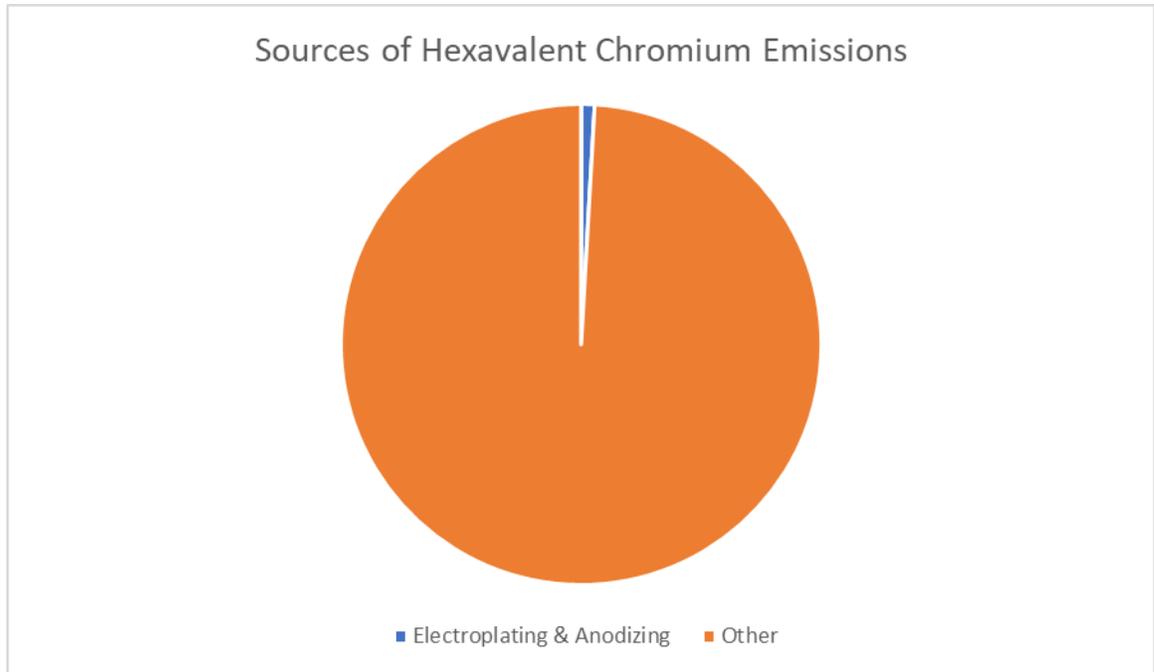
Less Than One Percent of Total Hexavalent Chromium Emissions

Given the industry’s success and commitment to significantly reducing hexavalent chromium emissions, it is curious why CARB has targeted the surface finishing industry with such a draconian rule that bans hexavalent chromium plating and anodizing. Particularly because hexavalent chromium emissions from the surface finishing operations represent such a small percentage of the overall hexavalent chromium emissions from all sources. Based on EPA’s National Emissions Inventory (NEI), hexavalent chromium emissions from the surface finishing industry represent less than one percent of the total hexavalent chromium emissions from all sources. Accordingly, to achieve meaningful reductions in hexavalent chromium emissions into the environment, CARB should focus on these larger sources, and not the one small industry that has already achieved dramatic reductions in hexavalent chromium emissions.

Plating Represents Less than 1% of Total Hexavalent Chromium Emissions

Sources of Hexavalent Chromium and Chromic Acid Emissions, from 2008 NEI

Category Name	Pollutant	SOURCE	Emissions (tpy)	Surface Finishing
Waste Disposal	Chromium (VI)	POINT	0.821654087	
Industry Process - Metals	Chromium (VI)	POINT	0.820627013	
Industry Process - NEC	Chromium (VI)	NONPOINT	0.677337907	
Fuel Comb - Commercial/Institutional	Chromium (VI)	POINT	0.180770229	
Industry Process - Pulp & Paper	Chromium (VI)	POINT	1.787444328	
Construction	Chromium (VI)	POINT	0.00000201	
Non-Road Equipment - Gasoline	Chromium (VI)	NONROAD	0.235950088	
Fuel Comb - Commercial/Institutional	Chromium (VI)	NONPOINT	0.016000025	
Planes, Trains, & Ships	Chromium (VI)	NONROAD	0.204385305	
On-Road Vehicles - Diesel	Chromium (VI)	NONROAD	0.857693448	
On-Road Vehicles - Gasoline	Chromium (VI)	NONROAD	2.408814623	
Solvent - NEC	Chromium (VI)	POINT	2.5493E-06	
Industry Process - Petroleum Refinement	Chromium (VI)	POINT	0.889302463	
Fuel Comb - Industrial Boilers, ICES	Chromium (VI)	NONPOINT	0.004856266	
Fuel Comb - Industrial Boilers, ICES	Chromium (VI)	POINT	0.638748795	
Gas Stations	Chromium (VI)	NONPOINT	0	
Industry Process - NEC	Chromium (VI)	POINT	2.88629552	
Fuel Comb - Residential Fireplaces	Chromium (VI)	NONPOINT	0	
Industry Process - Oil & Gas Production	Chromium (VI)	POINT	0.005434548	
Graphic Arts	Chromium (VI)	POINT	0.801116088	
Surface Coating - Industrial	Chromium (VI)	POINT	0.129376384	0.129376
Industry Process - Chemical Manufacturing	Chromium (VI)	POINT	0.832771438	
Fuel Comb - Residential Fuel	Chromium (VI)	NONPOINT	0.01554287	
Industry Process - Storage & Transfer	Chromium (VI)	POINT	0.010721679	
Non-Road Equipment - Diesel	Chromium (VI)	NONROAD	0.882444713	
Waste Disposal - Open Burning	Chromium (VI)	POINT	0.00201	
Waste Disposal - Open Burning	Chromium (VI)	POINT	0.80530365	
Fuel Comb - Electric Utility	Chromium (VI)	POINT	27.28954083	
Industry Process - Cement Manufacturing	Chromium (VI)	POINT	0.80777826	
Fuel Comb - Electric Utility	Chromium (VI)	NONPOINT	0.880134804	
Gas Stations	Chromium (VI)	POINT	1.0099E-06	
DNR Gasoline Terminals	Chromium (VI)	POINT	1.6001E-08	
Total for Cr (VI)			36.57806442	0.33%
Industry Process - Pulp & Paper	Chromic Acid (VI)	POINT	0.7559877	
Graphic Arts	Chromic Acid (VI)	POINT	0.0084	
Solvent - NEC	Chromic Acid (VI)	POINT	0.00001	
Industry Process - Storage & Transfer	Chromic Acid (VI)	POINT	0.886584777	
Decorations	Chromic Acid (VI)	POINT	0.8821202	
Fuel Comb - Commercial/Institutional	Chromic Acid (VI)	POINT	0.00358565	
Surface Coating - Industrial	Chromic Acid (VI)	POINT	0.010849123	0.010849
Fuel Comb - Industrial Boilers, ICES	Chromic Acid (VI)	POINT	0.078880885	
Industry Process - Chemical Manufacturing	Chromic Acid (VI)	POINT	0.8801381	
Industry Process - NEC	Chromic Acid (VI)	POINT	0.48396068	
Fuel Comb - Electric Utility	Chromic Acid (VI)	POINT	0.377214387	
Total for Chromic Acid (VI)			1.839983416	0.6%

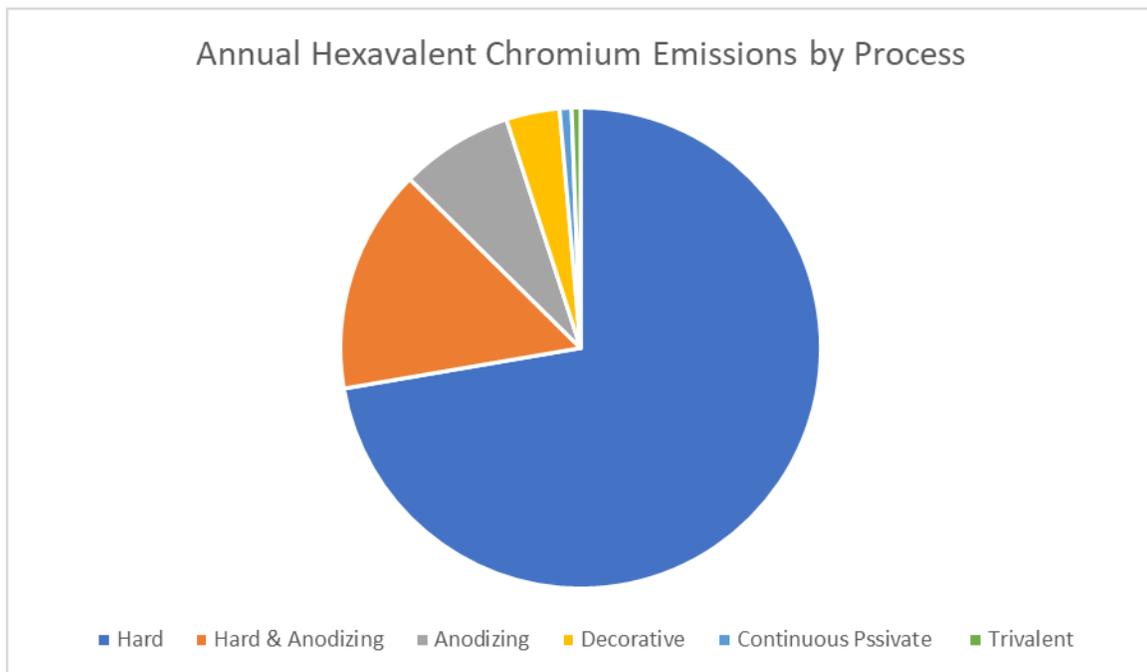


Just Over Two Pounds of Hexavalent Chromium Emissions in California

Due in large part to the more stringent regulatory requirements for surface finishing operations in California, the reduction of hexavalent chromium emissions have been even more successful in California. Based on CARB’s own data, only 2.348 pounds of hexavalent chromium are emitted annually from chromium plating and anodizing operations in California. This estimate is conservative because it is based on facility amp hours and the permissible emissions from each process. Actual emissions are lower because facilities must operate well below permissible emission limits to ensure ongoing compliance with the regulatory standard. Provided below is a table that summarizes the annual hexavalent chromium emissions in California based on amp hours and permissible emissions and a pie chart of those emissions.

**Annual Hexavalent Chromium Emissions in California
from Surface Finishing Operations
(Permissible Emissions Based on Amp Hours)**

Chromium Process	Pounds/Year	% of Total
Hard	1.697004465	72.3
Hard & Anodizing	0.355557774	15.1
Anodizing	0.178293855	7.6
Decorative	0.085612407	3.6
Continuous Passivate	0.018022805	0.8
Trivalent	0.013496204	0.6
TOTAL	2.347987510	

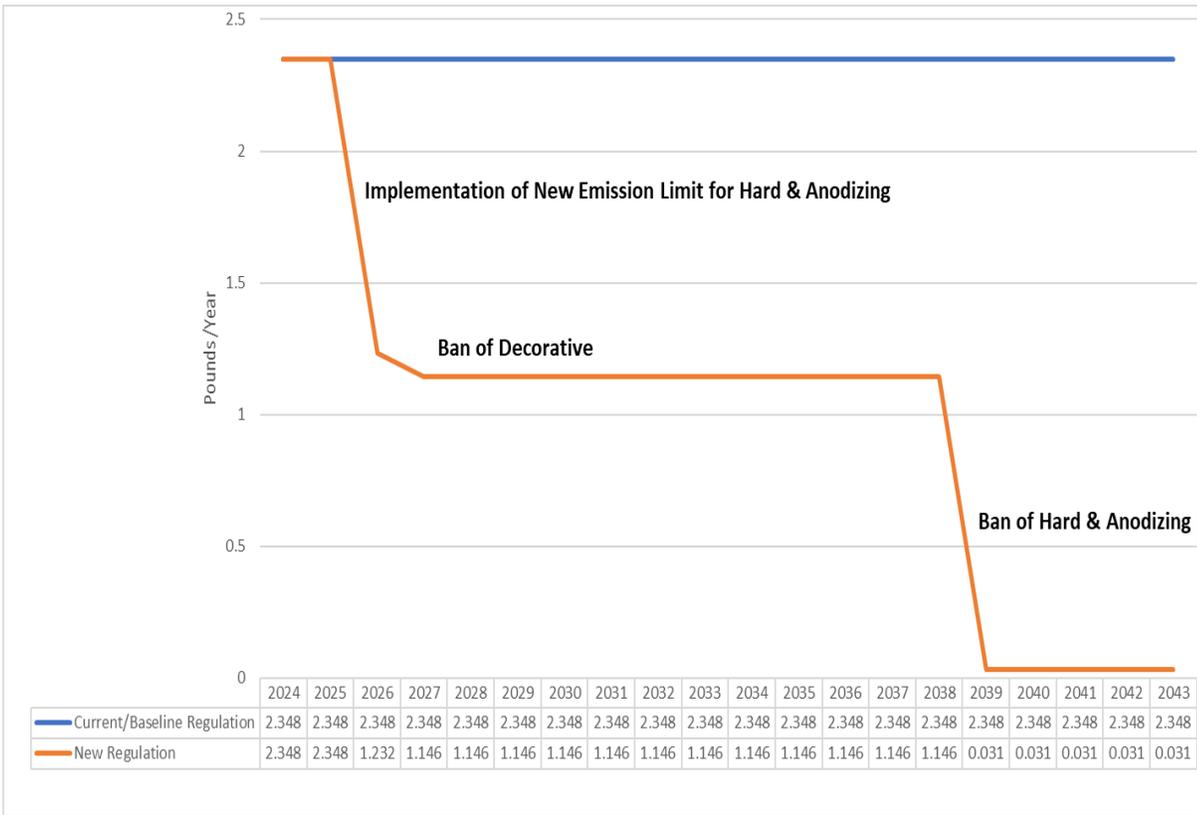


Projected Emissions with New CARB Rule

The new CARB rule that is being considered includes several requirements that are projected to reduce hexavalent chromium emissions from surface finishing operations. On January 1, 2026 hexavalent chromium emissions from hard chromium plating and chromic acid anodizing operations are expected to decrease, at least, by one half with the implementation of the new emission limit. This would be a reduction of over one-pound annual emissions of hexavalent chromium and would represent a reduction of 47.5 percent of the current annual emissions from all surface finishing operations in the state.

On January 1, 2027 the ban of decorative hexavalent chromium plating would result only in an annual reduction of less than one-tenth of a pound and would represent a reduction of only 3.6 percent of the current annual emissions from all surface finishing operations in the state. For the first fifteen years of the new CARB rule (and likely beyond), the vast majority of the annual reductions of hexavalent chromium emissions (over 93 percent) result from an emissions-based limit in the rule, and not a ban. The graph below illustrates the timing and degree of the projected emission reduction for the new CARB rule.

Projected Hexavalent Chromium Emissions with New CARB Rule



On January 1, 2039 the ban on hard hexavalent chromium plating and chromic acid anodizing operations is scheduled to take effect, assuming non-hexavalent chromium alternatives are available to replace all applications of these processes. Based on some of the critical applications for these processes such as defense, aerospace, hydraulics, and heavy equipment, viable non-hexavalent chromium alternatives to these processes may not be available by 2039 due military, aerospace and customer specifications to address critical safety and performance criteria. To project any hexavalent chromium emission reductions in fifteen years as a result of the ban is purely speculative at this point. Accordingly, the only significant reductions of hexavalent chromium emissions that can reasonably be counted upon would be based on an emissions-based rule requirement, not bans.

Ban May Cause More Harm Than Good

Decorative trivalent chromium plating processes are viable alternatives to many hexavalent chromium applications, but not all. Some customers still have specifications for appearance and functional performance that can only be met with hexavalent chromium processes. Accordingly, if decorative hexavalent chromium plating is banned in California, these customers will get decorative hexavalent chromium plating outside the State of California. The ban of decorative hexavalent chromium in California does not extinguish customer specifications and demands for the product's functional performance found only from hexavalent chromium processes. The ban only extinguishes small, family-owned businesses, good-paying jobs, and tax revenue in California.

The ban of decorative hexavalent chromium plating would result in the direct reduction of a very small amount of hexavalent chromium emissions (less than one-tenth of a pound). Because of the relatively short plating time for decorative processes, decorative plating shops generate the lowest amount of hexavalent chromium emissions, by far, compared to hard chromium and chromic acid anodizing processes. Based on CARB's own data, decorative plating accounts for only 0.086 pounds of hexavalent chromium

emissions annually in California. That is only 3.6 percent of the total hexavalent chromium emissions from the surface finishing industry in California, and only 0.036 percent of hexavalent chromium emissions from all sources. Banning decorative hexavalent chromium processes in California would result in such a small and insignificant amount of hexavalent chromium emissions that it would provide little, if any, benefit to human health and the environment.

The emissions-based regulations in California applicable to hexavalent chromium emissions from the surface finishing industry are the most stringent in the country. The surface finishing industry has continued to address these regulatory challenges and make the investments and efforts needed to meet the stringent emissions-based regulations. As noted above, the ban will not extinguish customer specifications and demands for hexavalent chromium plating, so plating will occur outside of California. Banning decorative hexavalent chromium plating in California will cause not only unnecessary facility closures and job losses, but it will also export hexavalent chromium emissions and environmental justice concerns to communities outside of California. This export will likely result in increased overall hexavalent chromium emissions from decorative hexavalent chromium processes in those jurisdictions with less stringent regulatory controls and increased truck and rail traffic to ship products in need of decorative hexavalent chromium plating to and from customers in California.

If California wants to continue to be the leader in protecting human health and the environment, then CARB needs to promulgate an emissions-based rule with no bans in order to reduce hexavalent chromium emissions overall, and, simply not export its hexavalent chromium emissions and environmental justice concerns to other jurisdictions. Accordingly, CARB should abandon the bans in this rule and promulgate emission-based limits that will result in meaningful hexavalent chromium emissions from the surface finishing industry.

Use of PFAS Fume Suppressants

One of the arguments expressed for banning hexavalent chromium plating is to eliminate the use of per- and polyfluoroalkyl substances (PFAS) in fume suppressants. The surface finishing industry, with the approval of EPA and CARB, had historically used a perfluorooctane sulfonate (PFOS) based fume suppressant to effectively reduce hexavalent chromium emissions from plating operations. As part of the 2012 revision to the Chromium Electroplating and Anodizing NESHAP, NASF worked with EPA to include a phase-out of PFOS-based fume suppressants. As of 2015, the surface finishing could no longer use PFOS-based fume suppressants. It is the only federal regulation to include a phase-out of a PFOS-based product.

As an alternative to PFOS, the industry switched to a fume suppressant that contained 6:2 fluorotelomer sulfonate (6:2 FTS) that was very effective in meeting the regulatory requirements of the NESHAP. While 6:2 FTS was a significant improvement over PFOS, it is still a PFAS. However, 6:2 FTS is not bio-accumulative, is not persistent in the environment, and is significantly less toxic than PFOS.

With the remaining concerns about the use of a PFAS-based fume suppressant, the surface finishing industry has identified several non-PFAS fume suppressants and is in the process of transitioning to the use of these non-PFAS alternatives to continue to reduce hexavalent chromium emissions. Accordingly, the primary PFAS issues facing the surface finishing industry stem from legacy uses. In addition, EPA is developing a revised effluent limitation guideline (ELG) for the surface finishing industry to address the discharge of PFAS in wastewater. Because of the surface finishing industry's proactive approach to transitioning to non-PFAS fume suppressants and the primary focus on addressing legacy uses of PFAS in fume suppressants, banning hexavalent chromium plating and anodizing processes is not an effective way to address PFAS issues for the surface finishing industry.

Voluntary, Cooperative Initiative to Transition to Trivalent Chromium

As noted above customer specifications for product performance will dictate the viability and timetable for transitioning to trivalent chromium plating and anodizing processes. With proper customer acceptance, transitioning to trivalent chromium processes can have many advantages for platers, customers, and communities. Recognizing this important concept and seizing on the critical opportunity that it presents, NASF, in cooperation with EPA, the State of Michigan, and automotive manufacturers, has embarked on a voluntary, cooperative initiative to explore opportunities to transition to decorative trivalent chromium plating for automotive applications. As NASF and its California members have continued to emphasize to CARB staff, even though decorative trivalent chromium processes are available, they do not work for all applications and for all customer specifications. The transition is complex and time-consuming, and requires significant testing and evaluation to guarantee product safety, performance and consumer acceptance.

The goal of this initiative is to identify those automotive applications that are ready for transition to decorative trivalent chromium processes and to conduct the appropriate testing, analysis, and evaluation on how best to implement the transition. Unlike the proposed bans in the CARB rule, the technology transition is not a one-size-fits-all approach and must be addressed application by application to ensure that customer specifications for product performance and safety are met.

The surface finishing industry welcomes the opportunity to work with CARB on a similar voluntary, cooperative initiative to transition to decorative trivalent chromium processes, rather than rely on a draconian, inappropriate, and ineffective ban on hexavalent chromium plating and anodizing. Such an approach with an emissions-based rule can lead to a productive regulatory approach that can achieve meaningful reductions of hexavalent chromium emissions for the surface finishing industry.

III. Conclusion

On behalf of the National Association for Surface Finishing (NASF), we appreciate the opportunity to submit these comments on the California Air Resources Board (CARB) Proposed Amendments to the Airborne Toxic Control Measure for Chromium Electroplating and Chromic Acid Anodizing Operations, and look forward to continue working with CARB and its staff on this rulemaking. If you have any questions, would like additional information, or would like to discuss these comments, please contact Jeff Hannapel (jhannapel@thepolicygroup.com) or Christian Richter (crichter@thepolicygroup.com) on behalf of the NASF.