- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1026 App A
- **Title:** Chromium (VI)

Appendix A to § 1910.1026

In the United States Court of Appeals for the Third Circuit

Surface Finishing Industry Council et al., Petitioners, v. U.S. Occupational Safety and Health Administration, Respondent.

[Docket No. 06-2272 and consolidated cases]

Public Citizen Health Research Group et al., Petitioners, v. Occupational Safety and Health Administration, United States Department of Labor, Respondent.

[Docket No. 06-1818]

Settlement Agreement

The parties to this Settlement Agreement ("Agreement") are the Occupational Safety and Health Administration, United States Department of Labor ("OSHA"), the Surface Finishing Industry Council or its successors ("SFIC"), surface-finishing and metal-finishing facilities which have opted into this Agreement pursuant to paragraph 7 ("Company" or "Companies"), Public Citizen Health Research Group ("HRG"), and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union ("Steelworkers").

Whereas, On February 28, 2006, OSHA promulgated a revised hexavalent chromium standard for general industry ("the Standard") that includes a permissible exposure limit ("PEL") for hexavalent chromium of 5 micrograms per cubic meter ("μg/m^3") measured as an 8-hour time-weighted average ("TWA"), and a deadline of May 31, 2010, for employers to come into compliance with this PEL through the implementation of engineering controls. The deadline for compliance with the remaining provisions of the Standard, including those requiring the use of respiratory protection to comply with the PEL, is November 27, 2006, for employers with twenty (20) or more employees, and May 30, 2007, for employers with nineteen (19) or fewer employees. 29 CFR 1910.1026, 71 FR 10100 (Feb. 28, 2006);

Whereas, SFIC filed a Petition for Review of the Standard in the Eleventh Circuit that was consolidated with other Petitions in the Third Circuit (Case No. 06-2272);

Whereas, SFIC filed a Motion for Leave to Intervene in the matter of HRG's Petition for Review in the Third Circuit (Case No. 06-1818), which has been granted;

Now, therefore, the parties to this Agreement do hereby agree to the following terms:

1. Term of this Agreement. This Agreement will be effective upon execution and will expire on May 31, 2010.

2. Accelerated implementation of engineering controls. The Companies agree that in accordance with 29 CFR 1910.1026(f)(1) they will implement those feasible engineering controls necessary to reduce hexavalent chromium levels at their facilities by December 31, 2008, to or below the 5 μg/m^3 PEL. In fulfilling this obligation, the Companies may select from the engineering and work practice controls listed in Exhibit A to this Agreement or adopt any other controls.

3. Compliance plan and monitoring. In accordance with 29 CFR 1910.1026(d)(4)(ii), each Company will prepare, and update as required, a written plan setting forth the specific control steps being taken to reduce employee exposure to or below the PEL by December 31, 2008. In addition, Companies will make an initial exposure determination as required by 29 CFR 1910.1026(d)(1) using either the procedures for personal breathing zone air samples described in 29 CFR 1910.1026(d)(2) or the performance-oriented option described at 29 CFR 1910.1026(d)(3). Thereafter, Companies will conduct periodic monitoring in accordance with the "Scheduled Monitoring Option" provisions at 29 CFR 1910.1026(d)(2) and related provisions at 29 CFR 1910.1026(d)(4)-(6). The Companies agree that upon request compliance plans prepared in accordance with this paragraph, as well as all monitoring results obtained in compliance with this

paragraph, will be provided to OSHA, affected employees and employee representatives.

4. Respirator use. The respiratory protection provisions at 29 CFR 1910.1026(f) and (g) will apply to the Companies in accordance with the terms and dates set forth in the Standard, except that prior to December 31, 2008, for Companies that are in compliance with this Agreement, OSHA will enforce those respiratory protection provisions only with respect to employees who fall into one of the following six (6) categories: (1) Employees who are exposed to hexavalent chromium in excess of the PEL while performing tasks described in Exhibit B to this Agreement; (2) through November 30, 2007, employees whose exposures to hexavalent chromium exceed a "respirator threshold" of 20 $\mu g/m^3$ (measured as an 8-hour TWA); (3) beginning December 1, 2007, employees whose exposures to hexavalent chromium exceed a "respirator threshold" of 12.5 $\mu g/m^3$ (measured as an 8-hour TWA); (4) employees who are exposed to hexavalent chromium and request a respirator; (5) any other employees who are required by the Companies to wear a respirator; and (6) employees with exposures for which respirators were required under the previous hexavalent chromium standard (1910.1000) and any other employees covered by respirator programs in effect on May 30, 2006.

5. Employee information and training?. Company employees will be trained pursuant to the provisions of 29 CFR 1910.1026(l)(2). In addition, the Companies agree to train employees in the provisions of this Agreement within sixty (60) days of the Opt-In Date (defined in paragraph 7 of this Agreement). The training regarding this Agreement shall be provided in language the employees can understand.

6. Enforcement. Within thirty (30) days of the execution of this Agreement, OSHA will publish a notice in the **Federal Register** amending 29 CFR 1910.1026 as follows: (1) A copy of this Agreement will be attached to the Standard as Appendix A; (2) a new paragraph, 1910.1026(n)(4), will be added to the Standard, and will read: "In facilities that become parties to the settlement agreement included in Appendix A, engineering controls required by paragraph (f) of this section shall be implemented no later than December 31, 2008"; and (3) existing paragraph 1910.1026(n)(3) will be amended to read: "Except as provided in (n)(4), for all employers, engineering controls required by paragraph (f) of this section shall be implemented no later than May 31, 2010."

7. Opt-In Date for Companies to become parties to this Agreement. The **Federal Register** notice described in paragraph 6 of this Agreement will provide notice of the provisions of this Agreement, and of the revisions to the Standard described in paragraph 6, and will provide until November 30, 2006, for eligible facilities to become parties to this Agreement, and be subject to all of the duties, obligations, and rights herein. The last date for signing by facilities shall be referred to as the Opt-In Date. The opt in option will be available on a facility by facility basis and only to SFIC members and other surface-finishing and metal-finishing job shop facilities within the jurisdiction of Federal OSHA. (For purposes of this Agreement, a "job shop" is defined as a facility that sells plating or anodizing services to other companies.) Moreover, the terms of this Agreement apply only with respect to the performance of surface-finishing and metal-finishing operations in those facilities. Although this Agreement applies only to facilities within the jurisdiction of Federal OSHA, OSHA will encourage States with OSHA-approved State occupational safety and health plans to either honor and implement the terms of this Agreement, including the amendments to the standard described in paragraph 6, or to take an alternative position, which may include entering into separate arrangements with surface- and metal-finishing job shop facilities (or their representatives) in their jurisdiction.

8. Effect on third parties. Nothing in this Agreement constitutes an admission by SFIC or the Companies that a significant risk of material health impairment exists for hexavalent chromium justifying a reduction of the PEL to 5 $\mu g/m^3$. Nor does anything in this Agreement constitute any other admission by SFIC or the Companies for purposes of this litigation or future litigation or standards-setting. This Agreement is not intended to give any rights to any third party except as expressly provided herein.

9. OSHA inspections. OSHA may do monitoring inspections to assess compliance with and progress under this Agreement and the Standard, and nothing in this Agreement limits OSHA's right to conduct inspections at Companies" facilities in accordance with the Occupational Safety and Health Act.

10. Scope of Agreement. The terms of this Agreement apply only in the circumstances and to the Companies specified herein. In entering into this Agreement, OSHA is not making any representations regarding its enforcement policy with respect to either (1) The hexavalent chromium standard as applied to employers who are not parties to this Agreement or (2) any other occupational safety or health standards.

11. Effect of invalidation of the Standard. If the Standard is invalidated, nothing in this Agreement shall prevent the application to SFIC or the Companies of any PEL that is promulgated by OSHA on remand. This Agreement would not foreclose SFIC or the Companies from participating in rulemaking proceedings or otherwise challenging any new PEL promulgated by OSHA on remand.

12. Withdrawal of Petitions and Interventions. SFIC agrees to move to withdraw its Petition for Review in the above-captioned case, Case No. 06-2272, within five (5) working days of the execution of this Agreement. SFIC further will move to dismiss its motion to intervene in Case No. 06-1818 and all other challenges simultaneously with its motion to withdraw in Case No. 06-2272 as Petitioner.

13. Attorneys' fees. Each party agrees to bear its own attorneys' fees, costs, and other expenses that have been incurred in connection with SFIC's Petition for Review, SFIC's intervention in HRG's Petition for Review, and the negotiation of this Agreement up to and including filing of the motions to dismiss.

14. Support of Agreement. In the event that all or any portion of this Agreement is challenged in any forum, the signatories below agree to move to intervene in support of this Agreement.

Agreed to this 25th day of October, 2006.

Baruch A. Fellner,

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Counsel for HRG and the Steelworkers, Public Citizen Litigation Group, 1600 20th Street, NW., Washington, DC 20009, (202) 588-7724.

Exhibit A

Available Engineering and Work Practice Controls

The Companies agree that work towards the implementation of these available engineering and work practice controls should not be delayed to accommodate their completion by December 31, 2008. The Companies are encouraged to implement from among these controls as soon as practicable.

1. Parts Transfer Practices

- Minimize droplet formation. Instruments akin to garden hoses are used to rinse off parts coming out of chemical baths. This causes many small droplets to form, which are easily atomized or vaporized and contribute to airborne chromium concentration. The industry is currently developing ways to minimize the formation of small droplets, dripping, or splashing, possibly by reducing hose pressure.
- Minimize air current flow. Strong air currents across these droplets may contribute to their vaporization, and therefore minimizing air current flow across the droplets may reduce airborne hexavalent chromium levels.
- Slow part speeds as feasible. The speed at which parts are pulled out of a chemical tank causes splashing, which adds to chromium vaporization. By slowing the speed at which parts are taken out of tanks, splashing and vaporization can be minimized. The feasibility of this control must be evaluated in light of the negative effect on productivity.

2. Plating Bath Surface Tension Management and Fume Suppression

- Lower surface tension. Lower surface tension in chemical baths leads to fewer drops forming. Chromium baths currently have a surface tension of 35 dynes per centimeter. As a comparison, water has a surface tension of 72 dynes per centimeter. Lowering surface tension further would lead to reduced airborne hexavalent chromium levels.
- Fume suppressants. Fume suppressants create a physical barrier between the chemical bath and the air, which prevents vaporization. Some suppressants, however, may cause pitting or other metal damage, and therefore their use is not always possible.

3. Facility Air Disturbance Monitoring

- Improvement of local exhaust ventilation (LEV) capture efficiency. The majority of electroplating facilities are not air-conditioned. As a result, doors are kept open to let in cool air, but this causes air currents that prevent the LEVs from performing efficiently. The use of fans has a similar effect. Industry is researching how to minimize these air currents so that LEVs can perform as designed. Such methods may include the use of partitions to degrade air current flow, or checklists that may include location and positioning of cross drafts, fans, doors, windows, partitions and process equipment that Companies can use to audit their workplaces in order to improve their capture efficiency.

4. Technology Enhancements In Lieu of LEV Retrofitting

- Eductors. Many chemical baths are currently mixed via air agitation: Air pipes bubble air into the tank to keep the chemicals mixed and to prevent them from settling. An adverse effect of this agitation is that air bubbles escape at the surface of the tank, resulting in some chromium vaporization. By using eductors (horn-shaped nozzles) in tanks, the chemicals flow from a pump to create solution movement below the surface without the use of air bubbles, and the amount of chromium vaporization can be significantly reduced.

5. Different Means of Chromium Additions

- Liquid Chromium. Dry hexavalent chromium flakes are occasionally added to tanks, which can generate airborne particulates of hexavalent chromium. Adding liquid chromium at or near the surface of a tank would lower airborne chromium levels and reduce splashing from tanks.
- Hydration of flakes before addition. To add liquid chromium to tanks, the dry flakes must be hydrated. Whether this process is performed by chemical suppliers that provide plating solutions to metal finishing companies or by metal finishing companies that have the necessary experience and equipment, appropriate work practices such as mixing techniques must be implemented to minimize the potential airborne levels of hexavalent chromium.

6. Dust Control

- Better housekeeping. Chrome dust that comes off products that are polished or grinded is actually elemental chromium, not hexavalent chromium, so polishing and grinding contribute little to airborne hexavalent chromium levels. However, Companies should use good housekeeping practices, including wet mopping, and wet wipedowns, to reduce the amount of dust present.

7. Improvement and Maintenance of Existing LEVs

- Improvement and maintenance of existing LEVs. Companies may repair and maintain their current LEVs. Because the final rule indicates that at least 75 percent of the industry is in compliance with the PEL with LEVs working at 40% of capacity, increasing LEV function can materially affect compliance.

8. Other Controls

- Other methods. Companies are constantly determining best work practices and technological controls through laboratory research and practical experience. Companies will implement other engineering and work practice controls as necessary and as practicable to reduce potential hexavalent chromium workplace exposures.

Exhibit B

Workplace Tasks Requiring Respirators Where PEL Is Exceeded

Some well-known and relatively few, discrete tasks related to metal finishing activities result in potentially higher workplace exposures of hexavalent chromium. Where the applicable PEL for hexavalent chromium is exceeded, respirators shall be worn to conduct the following activities:

(1) Hexavalent chromium chemical additions. In order to have the metal deposited onto the part, hexavalent chromium must be added to the plating tank periodically. This is a discrete activity that involves the addition of either a dry flake of hexavalent chromium chemicals or a liquid solution of hexavalent chromium into the plating tank. Respirators shall be worn during the period it takes to add the hexavalent chromium chemical to the tank.

(2) Hexavalent chromium preparation and mixing. Different mixtures of hexavalent chromium chemicals are needed for different types of chromium plating processes. For example, hard chromium plating can require higher concentrations of hexavalent chromium because a thicker coating and longer plating process may be needed for the critical product quality and performance. Similarly, different types of decorative chromium plating processes may need different levels of hexavalent chromium and other chemicals such as catalysts. These mixtures can be in the form of dry flakes or liquid solutions. All of these different hexavalent chromium chemical mixtures are generally prepared by metal finishing suppliers and distributors. Some metal finishing companies may also prepare hexavalent chromium solutions from the dry flakes prior to addition to the plating tanks. Respirators shall be worn during the period it takes to prepare these hexavalent chromium mixtures and solutions whether the activity is conducted at a chemical supplier or a metal finishing company.

(3) Hexavalent chromium tank cleaning. Occasionally, the tanks used for chromium plating may need to be emptied and cleaned. This process would involve the draining of the solution and then the removal of any residues in the tank. Workers cleaning out these tanks may have to enter the tank or reach into it to remove the residues. Respirators (as well as other appropriate PPE) shall be worn during the period it takes to clean the tanks and prepare them for use again.

(4) Hexavalent chromium painting operations. Some metal finishing operations apply paints with higher concentrations of hexavalent chromium to a line of parts, particularly for aerospace applications when a high degree of corrosion protection is needed for critical product performance. Paints are generally applied in such operations with some type of spray mechanism or similar dispersion practice. In some instances, it may be difficult to keep workplace exposures below the PEL for such paint spraying activities. Respirators shall be worn during such spray painting operations.

[71 FR 63242, Oct. 30, 2006]

Next Standard (1910.1027)

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