



November 5, 2015

U.S. Department of Labor
Room N-2625
200 Constitution Avenue, N.W.
Washington, D.C. 20210

RE: Occupational Safety and Health Administration; Occupational Exposure to Beryllium and Beryllium Compounds (OSHA-H005C-2006-0870)

To Whom It May Concern:

Following our February, 2012 document titled *Joint-Labor Management Model Beryllium Standard*, the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union (USW) and Materion Brush are submitting comments on the proposed occupational health standard for beryllium. Materion Brush is the world's only fully integrated supplier of beryllium and beryllium products, and accounts for all of the pure beryllium metal and the preponderance of the beryllium alloys produced in the United States. The USW represents the majority of unionized workers exposed to beryllium.

In our submission, OSHA received a template for the promulgation of a standard addressing worker exposure to beryllium. During the development of our proposal the USW and Materion worked to craft model language that would most importantly protect worker safety and health while addressing regulatory concerns of industry groups. Since the submission on model language, we have been advocates for swift promulgation of the standard. The USW and Materion urge OSHA promptly to adopt a final standard which protects workers exposed to beryllium.

As we stated in 2012, we believe the current OSHA permissible exposure limit for beryllium of $2 \mu\text{g}/\text{m}^3$ is too high and that our draft standard – including its provisions for exposure assessment, beryllium work areas and regulated areas, methods of compliance, personal protection and hygiene, housekeeping, medical surveillance,

medical removal protection, training, hazard communication and recordkeeping – is both necessary and sufficient to protect beryllium workers, and that it meets all the criteria established by Congress for rules promulgated under the Occupational Safety and Health Act. We continue to support our joint recommendations and are appreciative of the consideration given to them in this rulemaking.

It is in this spirit of cooperation between the USW and Materion that we offer our general support for what OSHA has proposed, with some suggestions for modifications as discussed below.

Both organizations are also submitting individual comments to the record. Those submissions may not always be consistent with each other. We agreed on the language of a proposed standard, but not necessarily on every aspect of beryllium science, or on issues not contained in our proposed regulatory text. However, these joint comments represent consensus between the USW and Materion; there should be no contradiction between them and our individual comments.

We offer the following in response to OSHA's request for comments.

Health Effects

1. Has OSHA adequately identified and documented all critical health impairments associated with occupational exposure to beryllium? If not, what other adverse health effects should be added? Are there additional studies or other data OSHA should consider in evaluating any of these health outcomes?

Although OSHA identified several health effects in its proposal, we believe the primary focus of the beryllium standard should be the prevention of chronic beryllium disease. Other health benefits will follow from such measures.

Scope

8. Has OSHA defined the scope of the proposed standard appropriately? Does it currently include employers who should not be covered, or exclude employers who should be covered by a comprehensive beryllium standard? Are you aware of employees in construction or maritime, or in general industry who deal with beryllium only as a trace contaminant, who may be at significant risk from occupational beryllium exposure? Please provide the basis for your response and any applicable supporting information.

The model standard submitted by Materion Brush and the USW suggested the following language with regard to scope: "This standard does not apply to work operations using materials or products containing 0.1% or less of Be by weight unless objective data or initial monitoring show that airborne concentrations generated can exceed the Action Level or the Short Term Exposure Limit under reasonably predictable conditions of

processing, use or handling.” (underlining added) We again encourage OSHA to incorporate this into the final standard.

Monitoring

11. Do you currently monitor for beryllium exposures in your workplace? If so, how often? Please provide the reasoning for the frequency of your monitoring. If periodic monitoring is performed at your workplace for exposures other than beryllium, with what frequency is it repeated?

Materion and the USW believe that exposure monitoring is an effective tool in helping to protect workers. The information gained through exposure monitoring has been used to determine the need for engineering and work practice controls. We ask OSHA to consider our suggested language “where an employer does representative sampling instead of sampling all employees in order to meet this requirement, the employer shall sample the employee(s) on the shift expected to have the highest exposure(s) to airborne beryllium.” Our experience has demonstrated that monitoring on all three shifts is not necessary if an appropriate industrial hygiene program is in place.

Discontinuation of Monitoring

12. Is it reasonable to allow discontinuation of monitoring based on one sample below the action level? Should more than one result below the action level be required to discontinue monitoring?

We believe the requirement should be to take sufficient personal breathing zone air samples to accurately characterize exposure on each work shift, for each job classification, in each work area; and sample those employee(s) who are expected to have the highest exposure. In our experience, one sample may be appropriate in certain circumstances, but in many situations, exposure characterization requires more than one sample. This response supports our request to not require sampling on all three shifts.

Engineering and Work Practice Controls

15. Do you usually use engineering or work practice controls (local exhaust ventilation, isolation, substitution) to reduce beryllium exposures? If so, which controls do you use?

Engineering or work practice controls are and should be used to keep beryllium at the source. This principle was incorporated into our model standard which stated that “the employer shall institute feasible engineering and/or work practice controls to minimize employee exposure in beryllium work areas where operations generate airborne beryllium particulate” should be made part of the standard. In practical terms, we believe that keeping beryllium at the source, to the extent feasible, is the first line of defense for protecting workers. If this is done, all of the other requirements become less costly and less burdensome.

16. Are the controls and processes listed in paragraph (f)(2)(i)(A) appropriate for controlling beryllium exposures? Are there additional controls or processes that should be added to paragraph (f)(2)(i)(A)?

We recommend that OSHA add the words **such as** following the words local exhaust ventilation:

- 1) Material and/or process substitution; (2) Ventilated partial or full enclosures;
- (3) Local exhaust ventilation **such as** at the points of operation, material handling, and transfer; or (4) Process control, such as wet methods and automation.

Not having the clarifier, as in (4), limits its applicability or requires it where it may not be needed.

18. Do you currently require specific PPE or respirators when employees are working with beryllium? If so, what type?

Materion has demonstrated that they require respirators where exposures exceed 0.2 $\mu\text{g}/\text{m}^3$. Selection and other provisions are governed by the OSHA respiratory protection standard.

Personal Protective Clothing and Equipment

19. The proposal requires PPE wherever work clothing or skin may become visibly contaminated with beryllium; where employees' skin can reasonably be expected to be exposed to soluble beryllium compounds; or where employee exposure exceeds or can reasonably be expected to exceed the TWA PEL or STEL. The requirement to use PPE where work clothing or skin may become "visibly contaminated" with beryllium differs from prior standards which do not require contamination to be visible in order for PPE to be required. Is "visibly contaminated" an appropriate trigger for PPE? Is there reason to require PPE where employees' skin can be exposed to insoluble beryllium compounds? Please provide the basis for your response and any applicable supporting information

In OSHA's question 19 pertaining to personal protective equipment, OSHA did not include the entire requirement from the USW-Materion 2012 submission (i) Where employee exposure exceeds or can reasonably be expected to exceed the TWA PEL or STEL; (ii) Where employees' clothing or skin may become visibly contaminated with beryllium including during maintenance and repair activities or during non-routine tasks; The USW and Materion made this part of our model standard to provide for employee safety and to ensure PPE is worn during maintenance tasks or non-routine tasks as it is unlikely that all tasks will have an exposure assessment or; such tasks would be of

short duration and could be below limits, but still result in beryllium contamination of clothing.

The term “where skin is exposed” is an undefined term as to what exposed means and to what skin means i.e., face, arms, scalp, eyes, ears, nostrils etc. We believe that standards should be clear and concise as to what is required.

Hygiene Areas and Practices

20. The proposal requires employers to provide showers in their facilities if (A) Exposure exceeds or can reasonably be expected to exceed the TWA PEL or STEL; and (B) Beryllium can reasonably be expected to contaminate employees' hair or body parts other than hands, face, and neck. Is this requirement reasonable and adequately protective of beryllium-exposed workers? Should OSHA amend the provision to require showers in facilities where exposures exceed the PEL or STEL, without regard to areas of bodily contamination?

OSHA's proposal is reasonable and should not be amended. It was clear during the SBREFA sessions that small businesses would have extreme difficulty, and in some situations it would be impossible to construct shower facilities due to the small footprint of some facilities. Our model standard recognized the burden on small business and therefore included this provision. To amend this provision would require the economic impact and review process to start again. We respectfully ask OSHA to avoid making changes that would delay the promulgation of this standard.

Housekeeping

21. The proposed rule prohibits dry sweeping or brushing for cleaning surfaces in beryllium work areas unless HEPA-filtered vacuuming or other methods that minimize the likelihood and level of exposure have been tried and were not effective. Please comment on this provision. What methods do you use to clean work surfaces at your facility? Are HEPA-filtered vacuuming or other methods to minimize beryllium exposure used to clean surfaces at your facility? Have they been effective? Are there any circumstances under which dry sweeping or brushing are necessary? Please explain your response.

We agree with the provision as detailed in the proposal referencing HEPA-filtered vacuums. Materion and the USW have both had experience with this issue and believe that HEPA vacuums should be used wherever feasible. OSHA has appropriately characterized this provision relative to exceptions.

22. The proposed rule requires that materials designated for recycling that are visibly contaminated with beryllium particulate shall be cleaned to remove visible particulate, or placed in sealed, impermeable enclosures. However, small particles (<10 μ) may not be visible to the naked eye, and there are studies suggesting that small particles may penetrate the skin, beyond which beryllium

sensitization can occur (Tinkle et al., 2003). OSHA requests feedback on this provision. Should OSHA require that all material to be recycled be decontaminated regardless of perceived surface cleanliness? Should OSHA require that all material disposed or discarded be in enclosures regardless of perceived surface cleanliness? Please provide explanation or data to support your comments.

We believe OSHA's proposed standard is sufficient with respect to surface cleanliness. OSHA should not require all materials to be decontaminated or sealed in an enclosure regardless of perceived surface cleanliness. However, OSHA should make it clear that this provision does not apply to beryllium-containing scrap metals being reused within facilities. Our initial intent was to ensure that materials leaving a facility and designated for recycling be containerized or visibly clean. One example is copper beryllium machine turnings being utilized within the same facility. In this example, it would not make sense to require cleaning or enclosing because they are either very clean to start with or have a thin coating of machining coolant. Requiring them to be cleaned before reuse in the facility might actually lead to greater worker exposures.

Medical Surveillance (Questions 23 -28)

We continue to support the provisions regarding medical surveillance as per our model standard and as proposed by OSHA. Our recommendations are based on the knowledge gained over the years relative to all types of medical surveillance programs. Our experience with medical examinations of workers have shown that such programs when administered properly are effective in not only identifying work related health concerns, but are of benefit to employees from non-work related health concerns. The frequencies, timelines and protocols in the USW-Materion Brush proposal were based on our collective experience with medical surveillance programs, including responding to worker concerns about problems in specific medical surveillance programs.

Appendix A

28. Appendix A to the proposed standard reviews procedures for conducting and interpreting the results of BeLPT testing for beryllium sensitization. Is there now, or should there be, a standard method for BeLPT laboratory procedure? If yes, please describe the existing or proposed method. Is there now, or should there be, a standard algorithm for interpreting BeLPT results to determine sensitization? Please describe the existing or proposed laboratory method or interpretation algorithm. Should OSHA require that BeLPTs performed to comply with the medical surveillance provisions of this rule adhere to the Department of Energy (DOE) analytical and interpretive specifications issued in 2001? Should interpretation of laboratory results be delegated to the employee's occupational physician or PLHCP?

We do not believe Appendix A is an effective communication tool for physicians, employers and employees. We recommend that Appendix A be rewritten as two

Appendices: One for physicians and one for employers/employees. The language should reflect what each audience needs to understand to help them comply with the requirements of the standard.

BeLPT

29. Should OSHA require the clinical laboratories performing the BeLPT to be accredited by the College of American Pathologists or another accreditation organization approved under the Clinical Laboratory Improvement Amendments (CLIA)? What other standards, if any, should be required for clinical laboratories providing the BeLPT?

We believe that there should be a standard laboratory procedure and a standard algorithm and that laboratories performing tests should be accredited. The BeLPT test should be approved by the FDA and laboratories administering it should be subjected to Clinical Laboratory Improvement Amendments (CLIA). However, these issues should not delay be allowed to delay the promulgation of a final standard. They can be addressed in the future.

Medical Removal Protection

33. OSHA has included requirements for medical removal protection (MRP) in the proposed rule, which includes provisions for medical removal for employees with beryllium sensitization or CBD, and an extension of removed employees' rights and benefits for six months. Are beryllium sensitization and CBD appropriate triggers for medical removal? Are there other medical conditions or findings that should trigger medical removal? For what amount of time should a removed employee's benefits be extended?

We believe OSHA appropriately addressed the provision regarding medical removal. We understand that this provision could be burdensome to some employers, but it is clearly in the interest of workers to have such a provision based on the natural history of chronic beryllium disease. Materion does offer removal protection to workers but it is not often accepted. Some employees choose to wear respiratory protection and continue to work in their current jobs.

34. Some OSHA health standards include appendices that address topics such as the hazards associated with the regulated substance, health screening considerations, occupational disease questionnaires, and PLHCP obligations. In this proposed rule, OSHA has included a non-mandatory appendix to describe and discuss the BeLPT (Appendix A), and a non-mandatory appendix presenting a non-exhaustive list of engineering controls employers may use to comply with paragraph (f) (Appendix B). What would be the advantages and disadvantages of including each appendix in the final rule? What would be the advantages and disadvantages of providing this information in guidance materials?

We recommend that Appendix A be broken into two Appendices: One for physicians and one for employers/employees. As written, we believe it is too complicated and needs to be simplified for readability.

We previously provided OSHA information in response to clarification questions pursuant to our model agreement. We also provided a draft appendix of controls for beryllium work areas with a listing of operations and associated hazard categorization (Attachment 1- Appendix Engineering Controls For Be Work Areas). OSHA could also incorporate this information into an Appendix.

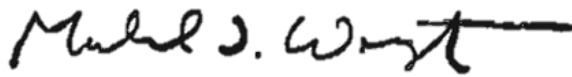
Within the same submission, it was stated that we agree with the ERG assessment on the job categories for which sufficient engineering controls have not been identified i.e. decontamination worker, maintenance worker (production equipment), maintenance worker (furnace and tools), alloy induction furnace workers, alloy arc furnace workers, vacuum casting workers, and beryllium oxide furnace workers. We also stated that occupations associated with furnace operations, casting related operations, powder operations, maintenance, mold and die cleaning, pelletizing, dross handling, atomization, chip/powder leaching, impact grinding, high beryllium machining, and the specific operations associated with beryllium oxide and beryllium oxide ceramic production also require special consideration. It would be helpful for employers to understand that controls still need to be installed to the extent feasible. We believe that the language proposed by OSHA is appropriate.

The USW and Materion urge OSHA to promptly adopt a final standard which protects workers exposed to beryllium. We stand ready to assist OSHA in this regard and hope that our novel approach has been helpful to OSHA.

Sincerely,



Terence Civic, Director
Materion Brush
Health, Safety &
Regulatory Affairs



Michael J. Wright, Director
United Steelworkers
Health, Safety &
Environment Department



Ashlee Fitch, Specialist
United Steelworkers
Health, Safety &
Environment Department