

Administrative Procedures – Proposed Rule Filing

Instructions:

In accordance with Title 3 Chapter 25 of the Vermont Statutes Annotated and the “Rule on Rulemaking” (CVR 04-000-001) adopted by the Office of the Secretary of State, this filing will be considered complete upon filing and acceptance of these forms with the Office of the Secretary of State, and the Legislative Committee on Administrative Rules.

All forms requiring a signature shall be original signatures of the appropriate adopting authority or authorized person, and all filings are to be submitted at the Office of the Secretary of State, no later than 3:30 pm on the last scheduled day of the work week.

The data provided in text areas of these forms will be used to generate a notice of rulemaking in the portal of “Proposed Rule Postings” online, and the newspapers of record if the rule is marked for publication. Publication of notices will be charged back to the promulgating agency.

PLEASE REMOVE ANY COVERSHEET OR FORM NOT REQUIRED WITH THE CURRENT FILING BEFORE DELIVERY!

Certification Statement: As the adopting Authority of this rule (see 3 V.S.A. § 801 (b) (11) for a definition), I approve the contents of this filing entitled:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

_____/s/ Michael Harrington_____, on 5/26/2021
(signature) (date)

Printed Name and Title:
Michael Harrington, Commissioner
Vermont Department of Labor

RECEIVED BY: _____

- Coversheet
- Adopting Page
- Economic Impact Analysis
- Environmental Impact Analysis
- Strategy for Maximizing Public Input
- Scientific Information Statement (if applicable)
- Incorporated by Reference Statement (if applicable)
- Clean text of the rule (Amended text without annotation)
- Annotated text (Clearly marking changes from previous rule)
- ICAR Filing Confirmed

Proposed Rule Coversheet

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. PRIMARY CONTACT PERSON:

(A PERSON WHO IS ABLE TO ANSWER QUESTIONS ABOUT THE CONTENT OF THE RULE).

Name: Daniel A. Whipple

Agency: Vermont Occupational Safety and Health Administration

Mailing Address: P.O. Box 488 Montpelier, VT 05601-0488

Telephone: 802 828 - 5084 Fax: 802 828 - 0408

E-Mail: dan.whipple@vermont.gov

Web URL *(WHERE THE RULE WILL BE POSTED)*:

<https://labor.vermont.gov/vosha>

4. SECONDARY CONTACT PERSON:

(A SPECIFIC PERSON FROM WHOM COPIES OF FILINGS MAY BE REQUESTED OR WHO MAY ANSWER QUESTIONS ABOUT FORMS SUBMITTED FOR FILING IF DIFFERENT FROM THE PRIMARY CONTACT PERSON).

Name: Bailey Thibault

Agency: Vermont Occupational Safety and Health Administration

Mailing Address: P.O. Box 488 Montpelier, VT 05601-0488

Telephone: 802 828 - 5085 Fax: 802 828 - 0408

E-Mail: bailey.thibault@vermont.gov

5. RECORDS EXEMPTION INCLUDED WITHIN RULE:

(DOES THE RULE CONTAIN ANY PROVISION DESIGNATING INFORMATION AS CONFIDENTIAL; LIMITING ITS PUBLIC RELEASE; OR OTHERWISE EXEMPTING IT FROM INSPECTION AND COPYING?) No

IF YES, CITE THE STATUTORY AUTHORITY FOR THE EXEMPTION:

PLEASE SUMMARIZE THE REASON FOR THE EXEMPTION:

6. LEGAL AUTHORITY / ENABLING LEGISLATION:

(THE SPECIFIC STATUTORY OR LEGAL CITATION FROM SESSION LAW INDICATING WHO THE ADOPTING ENTITY IS AND THUS WHO THE SIGNATORY SHOULD BE. THIS SHOULD BE A SPECIFIC CITATION NOT A CHAPTER CITATION).

Proposed Rule Coversheet

21 V.S.A. §§204, 224

7. EXPLANATION OF HOW THE RULE IS WITHIN THE AUTHORITY OF THE AGENCY:

As a State Plan Occupational Safety and Health regulatory agency, Vermont Occupational Safety and Health Administration (VOSHA) is charged with enforcing workplace safety and health rules. This rule is within that jurisdiction.

8. CONCISE SUMMARY (150 WORDS OR LESS):

Occupational exposure to respirable beryllium is highly toxic and has long been known to cause berylliosis, also known as chronic beryllium disease (CBD) and lung cancer. This rulemaking was prompted by Federal OSHA and incorporated standards were adopted as such. This current rulemaking is intended to address areas of the previous standard that are somewhat ambiguous and confusing to employers. OSHA is amending the existing general industry standard for occupational exposure to beryllium and beryllium compounds to clarify certain provisions and simplify or improve compliance. The revisions in this final rule are designed to maintain or enhance worker protections overall by ensuring that the rule is well understood and compliance is more straightforward. VOSHA as a State Plan of Federal OSHA is adopting this rule change as an extension of the previous OSHA adopted rule.

9. EXPLANATION OF WHY THE RULE IS NECESSARY:

This rule is necessary because it provides simplification and clarity to a rule of relatively high complexity. This rule does not lessen the employer's responsibility to protect workers nor the level of effectiveness of protections from exposure to beryllium and Beryllium Compounds.

10. EXPLANATION OF HOW THE RULE IS NOT ARBITRARY:

This rule change has been previously adopted by Federal OSHA. VOSHA is compelled to adopt these rules or rules at least as effective as them.

11. LIST OF PEOPLE, ENTERPRISES AND GOVERNMENT ENTITIES AFFECTED BY THIS RULE:

Compared to other OSHA health standards, the beryllium rule covers a relatively small worker population of approximately 62,000 workers (nationally). Workers and

Proposed Rule Coversheet

entities in Vermont likely affected by this rule include aerospace workers involved in precision machining and welding, dental offices that use beryllium alloy and some construction workers that use blasting agents of more than .1% beryllium.

12. BRIEF SUMMARY OF ECONOMIC IMPACT (150 WORDS OR LESS):

As this rule does not represent a significant change in requirements, the cost to employers is expected to be nonexistent. As OSHA has stated "After carefully reviewing the proposed clarifications and revisions, OSHA preliminarily determined that their net total effect would result in potential cost savings, mainly from improving employer understanding and facilitating application of the rule (83 FR at 63760-61)." VOSHA considers the effects of this rule change to be net zero for employers.

13. A HEARING IS SCHEDULED .

14. HEARING INFORMATION

(THE FIRST HEARING SHALL BE NO SOONER THAN 30 DAYS FOLLOWING THE POSTING OF NOTICES ONLINE).

IF THIS FORM IS INSUFFICIENT TO LIST THE INFORMATION FOR EACH HEARING PLEASE ATTACH A SEPARATE SHEET TO COMPLETE THE HEARING INFORMATION NEEDED FOR THE NOTICE OF RULEMAKING.

Date: 7/8/2021
Time: 01:00 PM
Street Address: 5 Green Mountain Drive, Montpelier VT
Zip Code: 05601

Date:
Time: AM
Street Address:
Zip Code:

Date:
Time: AM
Street Address:
Zip Code:

Date:
Time: AM

Proposed Rule Coversheet

Street Address:

Zip Code:

15. DEADLINE FOR COMMENT (NO EARLIER THAN 7 DAYS FOLLOWING LAST HEARING): 7/15/2021

16. KEYWORDS (PLEASE PROVIDE AT LEAST 3 KEYWORDS OR PHRASES TO AID IN THE SEARCHABILITY OF THE RULE NOTICE ONLINE).

OSHA Subpart Z

Beryllium and Beryllium Compounds

VOSHA Beryllium standard

1910.1024

Administrative Procedures – Adopting Page

Instructions:

This form must accompany each filing made during the rulemaking process:

Note: To satisfy the requirement for an annotated text, an agency must submit the entire rule in annotated form with proposed and final proposed filings. Filing an annotated paragraph or page of a larger rule is not sufficient. Annotation must clearly show the changes to the rule.

When possible, the agency shall file the annotated text, using the appropriate page or pages from the Code of Vermont Rules as a basis for the annotated version. New rules need not be accompanied by an annotated text.

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. TYPE OF FILING (*PLEASE CHOOSE THE TYPE OF FILING FROM THE DROPDOWN MENU BASED ON THE DEFINITIONS PROVIDED BELOW*):

- **AMENDMENT** - Any change to an already existing rule, even if it is a complete rewrite of the rule, it is considered an amendment as long as the rule is replaced with other text.
- **NEW RULE** - A rule that did not previously exist even under a different name.
- **REPEAL** - The removal of a rule in its entirety, without replacing it with other text.

This filing is **AN AMENDMENT OF AN EXISTING RULE** .

4. LAST ADOPTED (*PLEASE PROVIDE THE SOS LOG#, TITLE AND EFFECTIVE DATE OF THE LAST ADOPTION FOR THE EXISTING RULE*):

24 050 40. 29 CFR 1910.1024 OCCUPATIONAL EXPOSURE TO BERYLLIUM IN GENERAL INDUSTRY (INCORPORATED BY

Adopting Page

REFERENCE) November 28, 2018 Secretary of State Rule Log
#18-044

INTERAGENCY COMMITTEE ON ADMINISTRATIVE RULES (ICAR) MINUTES

Meeting Date/Location: May 10, 2021, Microsoft Teams Virtual Meeting

Members Present: Chair Kristin Clouser, Dirk Anderson, Diane Bothfeld, Jennifer Mojo, John Kessler, Matt Langham, Diane Sherman and Clare O'Shaughnessy

Members Absent: Ashley Berliner

Minutes By: Melissa Mazza-Paquette

-
- 2:00 p.m. meeting called to order, welcome and introductions.
 - Review and approval of minutes from the April 12, 2021 meeting.
 - Note: The following Emergency Rules were supported by ICAR Chair Clouser:
 1. 'PUC Emergency Rule 2.500 COVID-19 Emergency Procedures' by the Public Utility Commission on 4/13/21.
 2. 'Reportable and Communicable Diseases Emergency Rule' by the Agency of Human Services, Department of Health on 4/19/21.
 - No additions/deletions to agenda. Agenda approved as drafted.
 - No public comments made.
 - Presentation of Proposed Rules on pages 2-4 to follow.
 1. VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry, Department of Labor, page 2
 2. Biomass Renewable Energy Standard, Agency of Natural Resources, Department of Forests, Parks and Recreation, page 3
 3. Rule on Rulemaking, Office of the Secretary of State, page 4
 - a. Note: The Office of the Secretary of State will be invited to a future ICAR meeting to discuss potential changes to the ICAR forms, including a potential pre-filing with ICAR sheet.
 - Equity Impact on ICAR Rules: Executive Director of Racial Equity Xusana Davis
 - Director Davis plans to attend future ICAR meetings to provide her perspective on equity when needed.
 - There would be value in those proposing rules to do an equity analysis prior to filing and expand their outreach process to be all inclusive.
 - Next scheduled meeting is June 14, 2021 at 2:00 p.m.
 - 3:24 p.m. meeting adjourned.

1) **Proposed Rule:** VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry, Department of Labor

Presented By: Dan Whipple

Motion made to accept the rule by John Kessler, seconded by Matt Langham, and passed unanimously except for Dirk Anderson who abstained, with the following recommendations:

1. Proposed Rule Coversheet, #8: Clarify the participation of OSHA – federal vs. state.
2. Proposed Rule Coversheet, #12: Clarify the third and fifth sentences. Include the history of the \$73,860,230. Indicate that there wasn't any specific Vermont analysis done.
3. Proposed Rule Coversheet, #14 and #15: Include dates or TBD.
4. Adopting Page, #4: Include title.
5. Environmental Impact Analysis, #9: Expand upon 'negligible'.
6. Public Input, #3: Include the intent to host a public hearing and approximate time frame for which it will occur. Communicate to the public that the Vermont rule could be stricter than the Federal rule.

Administrative Procedures – Economic Impact Analysis

Instructions:

In completing the economic impact analysis, an agency analyzes and evaluates the anticipated costs and benefits to be expected from adoption of the rule; estimates the costs and benefits for each category of people enterprises and government entities affected by the rule; compares alternatives to adopting the rule; and explains their analysis concluding that rulemaking is the most appropriate method of achieving the regulatory purpose.

Rules affecting or regulating schools or school districts must include cost implications to local school districts and taxpayers in the impact statement, a clear statement of associated costs, and consideration of alternatives to the rule to reduce or ameliorate costs to local school districts while still achieving the objectives of the rule (see 3 V.S.A. § 832b for details).

Rules affecting small businesses (excluding impacts incidental to the purchase and payment of goods and services by the State or an agency thereof), must include ways that a business can reduce the cost or burden of compliance or an explanation of why the agency determines that such evaluation isn't appropriate, and an evaluation of creative, innovative or flexible methods of compliance that would not significantly impair the effectiveness of the rule or increase the risk to the health, safety, or welfare of the public or those affected by the rule.

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. CATEGORY OF AFFECTED PARTIES:

LIST CATEGORIES OF PEOPLE, ENTERPRISES, AND GOVERNMENTAL ENTITIES POTENTIALLY AFFECTED BY THE ADOPTION OF THIS RULE AND THE ESTIMATED COSTS AND BENEFITS ANTICIPATED:

The beryllium rule covers a relatively small worker population of approximately 62,000 workers (nationally). Workers and entities in Vermont likely affected by this rule include aerospace workers involved in precision machining and welding, dental offices that use beryllium alloy and some construction workers that use blasting agents containing more than

Economic Impact Analysis

.1% beryllium. This rule, by specifically updating the original rule, with the intent to clarify ambiguous language, will serve the purpose of allowing better understanding of expectations and will otherwise have a negligible impact on affected employers.

4. IMPACT ON SCHOOLS:

INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON PUBLIC EDUCATION, PUBLIC SCHOOLS, LOCAL SCHOOL DISTRICTS AND/OR TAXPAYERS CLEARLY STATING ANY ASSOCIATED COSTS:

No impacts anticipated

5. ALTERNATIVES: *CONSIDERATION OF ALTERNATIVES TO THE RULE TO REDUCE OR AMELIORATE COSTS TO LOCAL SCHOOL DISTRICTS WHILE STILL ACHIEVING THE OBJECTIVE OF THE RULE.*

Since this is an adoption of a previous federally adopted standard, no alternatives were considered.

6. IMPACT ON SMALL BUSINESSES:

INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON SMALL BUSINESSES (EXCLUDING IMPACTS INCIDENTAL TO THE PURCHASE AND PAYMENT OF GOODS AND SERVICES BY THE STATE OR AN AGENCY THEREOF):

Impacts on small business are expected to be negligible

7. SMALL BUSINESS COMPLIANCE: *EXPLAIN WAYS A BUSINESS CAN REDUCE THE COST/BURDEN OF COMPLIANCE OR AN EXPLANATION OF WHY THE AGENCY DETERMINES THAT SUCH EVALUATION ISN'T APPROPRIATE.*

This rule actually clarifies and simplifies compliance with portions of the existing rule.

8. COMPARISON:

COMPARE THE IMPACT OF THE RULE WITH THE ECONOMIC IMPACT OF OTHER ALTERNATIVES TO THE RULE, INCLUDING NO RULE ON THE SUBJECT OR A RULE HAVING SEPARATE REQUIREMENTS FOR SMALL BUSINESS:

No alternate rule was considered, as the amended rule is mandated by Federal OSHA

9. SUFFICIENCY: *EXPLAIN THE SUFFICIENCY OF THIS ECONOMIC IMPACT ANALYSIS.*

Deriving the information for this economic impact analysis, VOSHA used the Federal register Volume 85 No. 185, for which the impact of this rule was quantified at the federal level.

Administrative Procedures – Environmental Impact Analysis

Instructions:

In completing the environmental impact analysis, an agency analyzes and evaluates the anticipated environmental impacts (positive or negative) to be expected from adoption of the rule; compares alternatives to adopting the rule; explains the sufficiency of the environmental impact analysis.

Examples of Environmental Impacts include but are not limited to:

- Impacts on the emission of greenhouse gases
- Impacts on the discharge of pollutants to water
- Impacts on the arability of land
- Impacts on the climate
- Impacts on the flow of water
- Impacts on recreation
- Or other environmental impacts

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. GREENHOUSE GAS: *EXPLAIN HOW THE RULE IMPACTS THE EMISSION OF GREENHOUSE GASES (E.G. TRANSPORTATION OF PEOPLE OR GOODS; BUILDING INFRASTRUCTURE; LAND USE AND DEVELOPMENT, WASTE GENERATION, ETC.):*

No impact anticipated

4. WATER: *EXPLAIN HOW THE RULE IMPACTS WATER (E.G. DISCHARGE / ELIMINATION OF POLLUTION INTO VERMONT WATERS, THE FLOW OF WATER IN THE STATE, WATER QUALITY ETC.):*

No impact anticipated

5. LAND: *EXPLAIN HOW THE RULE IMPACTS LAND (E.G. IMPACTS ON FORESTRY, AGRICULTURE ETC.):*

No impact anticipated

6. RECREATION: *EXPLAIN HOW THE RULE IMPACT RECREATION IN THE STATE:*

No impact anticipated

Environmental Impact Analysis

7. CLIMATE: *EXPLAIN HOW THE RULE IMPACTS THE CLIMATE IN THE STATE:*

No impact anticipated

8. OTHER: *EXPLAIN HOW THE RULE IMPACT OTHER ASPECTS OF VERMONT'S ENVIRONMENT:*

No other impacts anticipated

9. SUFFICIENCY: *EXPLAIN THE SUFFICIENCY OF THIS ENVIRONMENTAL IMPACT ANALYSIS.*

As this rule affects airborne quantities of Beryllium and Beryllium compounds in such minute quantities, issues such as release into the environment would be non-existent. Therefore, VOSHA deems the afore provided information to be sufficient.

Administrative Procedures – Public Input

Instructions:

In completing the public input statement, an agency describes the strategy prescribed by ICAR to maximize public input, what it did do, or will do to comply with that plan to maximize the involvement of the public in the development of the rule.

This form must accompany each filing made during the rulemaking process:

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. PLEASE DESCRIBE THE STRATEGY PRESCRIBED BY ICAR TO MAXIMIZE PUBLIC INVOLVEMENT IN THE DEVELOPMENT OF THE PROPOSED RULE:

This rule was developed at the federal level. As part of the development, extensive public participation and comment is built in to the adoption process. As a recognized OSHA state plan, VOSHA could adopt a more strict rule, but is compelled to adopt a rule at least as effective as the existing rule. VOSHA intends to hold a public hearing on this rule.

4. PLEASE LIST THE STEPS THAT HAVE BEEN OR WILL BE TAKEN TO COMPLY WITH THAT STRATEGY:

This rule will be placed on the VOSHA website at <http://labor.vermont.gov/vosha/laws-regulations/>. In addition, notice will be sent through the Vermont Department of Labor Project Work SAFE listserv. Notice will also be sent to stakeholders such as Vermont Safety and Health Council, Vermont Buildings and General Services, and Associated Industries of Vermont, among others. Notice of this rule will be published in newspapers by the Secretary of State.

Public Input

5. BEYOND GENERAL ADVERTISEMENTS, PLEASE LIST THE PEOPLE AND ORGANIZATIONS THAT HAVE BEEN OR WILL BE INVOLVED IN THE DEVELOPMENT OF THE PROPOSED RULE:

This rulemaking originates with federal rulemaking completed in 2016. As such, stakeholders at the Federal OSHA level were involved. VOSHA will alert various industry groups and employers through the VOSHA list-serve as well as placing the rule on the VOSHA website.

Administrative Procedures – Scientific Information

THIS FORM IS ONLY REQUIRED WHEN INCORPORATING MATERIALS BY REFERENCE. PLEASE REMOVE PRIOR TO DELIVERY IF IT DOES NOT APPLY TO THIS RULE FILING:

Instructions:

In completing the Scientific Information Statement, an agency shall provide a brief summary of the scientific information including reference to any scientific studies upon which the proposed rule is based, for the purpose of validity.

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. BRIEF EXPLANATION OF SCIENTIFIC INFORMATION:

4. CITATION OF SOURCE DOCUMENTATION OF SCIENTIFIC INFORMATION:

5. INSTRUCTIONS ON HOW TO OBTAIN COPIES OF THE SOURCE DOCUMENTS OF THE SCIENTIFIC INFORMATION FROM THE AGENCY OR OTHER PUBLISHING ENTITY:

Administrative Procedures – Incorporation by Reference

THIS FORM IS ONLY REQUIRED WHEN INCORPORATING MATERIALS BY REFERENCE. PLEASE REMOVE PRIOR TO DELIVERY IF IT DOES NOT APPLY TO THIS RULE FILING:

Instructions:

In completing the incorporation by reference statement, an agency describes any materials that are incorporated into the rule by reference and how to obtain copies.

This form is only required when a rule incorporates materials by referencing another source without reproducing the text within the rule itself (e.g. federal or national standards, or regulations).

Incorporated materials will be maintained and available for inspection by the Agency.

1. TITLE OF RULE FILING:

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry

2. ADOPTING AGENCY:

Vermont Department of Labor

3. DESCRIPTION (*DESCRIBE THE MATERIALS INCORPORATED BY REFERENCE*):

This rule filing incorporates by reference all of 29 CFR 1910 – Occupational Safety and Health Standards for General Industry

4. FORMAL CITATION OF MATERIALS INCORPORATED BY REFERENCE:

29 CFR 1910

5. OBTAINING COPIES: (*EXPLAIN WHERE THE PUBLIC MAY OBTAIN THE MATERIAL(S) IN WRITTEN OR ELECTRONIC FORM, AND AT WHAT COST*):

Copies of this standard can be obtained by accessing the OSHA website at <https://www.osha.gov/laws-regs/regulations/standardnumber/1910>

6. MODIFICATIONS (*PLEASE EXPLAIN ANY MODIFICATION TO THE INCORPORATED MATERIALS E.G., WHETHER ONLY PART OF THE MATERIAL IS ADOPTED AND IF SO, WHICH PART(S) ARE MODIFIED*):

Incorporation By Reference

This rule filing deletes former language; 24 050 40. 29
CFR 1910.1024 OCCUPATIONAL EXPOSURE TO BERYLLIUM IN
GENERAL INDUSTRY

Run Spell Check

1910.1024 App A

* Title:

Appendix A to § 1910.1024 Control Strategies To Minimize Beryllium Exposure (Non-Mandatory)

Paragraph (f)(2)(i) of this standard requires employers to use one or more of the control methods listed in paragraph (f)(2)(i) to minimize worker exposure in each operation in a beryllium work area, unless the operation is exempt under paragraph (f)(2)(ii). This appendix sets forth a nonexhaustive list of control options that employers could use to comply with paragraph (f)(2)(i) for a number of specific beryllium operations.

TABLE A.1—EXPOSURE CONTROL RECOMMENDATIONS

Operation	Minimal control strategy *	Application group
Beryllium Oxide Forming (e.g., pressing, extruding).	<p>For pressing operations:</p> <hr/> <ol style="list-style-type: none"> 1. Install local exhaust ventilation (LEV) on oxide press tables, oxide feed drum breaks, press tumblers, powder rollers, and die set disassembly stations; 2. Enclose the oxide presses; and 3. Install mechanical ventilation (make-up air) in processing areas <p>For extruding operations:</p> <ol style="list-style-type: none"> 1. Install LEV on extruder powder loading hoods, oxide supply bottles, rod breaking operations, centerless grinders, rod laydown tables, dicing operations, surface grinders, discharge end-of-extrusion presses; 2. Enclose the centerless grinders; and 3. Install mechanical ventilation (make-up air) in processing areas. 	Primary Beryllium Production; Beryllium Oxide Ceramics and Composites.
Chemical Processing Operations (e.g., leaching, pickling, degreasing, etching, plating).	<p>For medium and high gassing operations:</p> <hr/> <ol style="list-style-type: none"> 1. Perform operation with a hood having a maximum of one open side; and 	Primary Beryllium Production; Beryllium Oxide Ceramics and

	Minimal control strategy*	Application group
Finishing (e.g., grinding, sanding, polishing, deburring):	<ol style="list-style-type: none"> 2. Design process so as to minimize spills; if accidental spills occur, perform immediate cleanup. 	Composites; Copper Rolling; Drawing and Extruding.
Finishing (e.g., grinding, sanding, polishing, deburring):	<ol style="list-style-type: none"> 1. Perform portable finishing operations in a ventilated hood. The hood should include both downdraft and backdraft ventilation, and have at least two sides and a top. 2. Perform stationary finishing operations using a ventilated and enclosed hood at the point of operation. The grinding wheel of the stationary unit should be enclosed and ventilated. 	Secondary Smelting; Fabrication of Beryllium Alloy Products; Dental Labs.
Furnace Operations (e.g., Melting and Casting):	<ol style="list-style-type: none"> 1. Use LEV on furnaces, pelletizer, are furnace ingot machine discharge; pellet sampling, are furnace bins and conveyors; beryllium hydroxide drum dumper and dryer; furnace rebuilding; furnace tool holders; are furnace tundish and tundish skimming, tundish preheat hood, and tundish cleaning hoods; dress handling equipment and drums; dress recycling, and tool repair station, charge make-up station, oxide screener, product sampling locations, drum changing stations, and drum cleaning stations 2. Use mechanical ventilation (make up air) in furnace building 	Primary Beryllium Production; Beryllium Oxide Ceramics and Composites; Nonferrous Foundries; Secondary Smelting.
Machining	<p>Use</p> <ol style="list-style-type: none"> 1. LEV consistent with ACGIH® ventilation guidelines on deburring hoods, wet surface grinder enclosures, belt sanding hoods, and electrical discharge machines (for operations such as polishing, tapping, and buffing); 2. high velocity low volume hoods or ventilated enclosures on lathes, vertical mills, CNC mills, and tool grinding operations; 	Primary Beryllium Production; Beryllium Oxide Ceramics and Composites; Copper Rolling; Drawing, and Extruding;

[REDACTED]	[REDACTED]	[REDACTED]
	<ol style="list-style-type: none"> 3. for beryllium oxide ceramics, LEV on lapping, dicing, and laser cutting; and 4. wet methods (e.g., coolants). 	Precision Turned Products
Mechanical Processing (e.g., material handling (including scrap), sorting, crushing, screening, pulverizing, shredding, pouring, mixing, blending).	<ol style="list-style-type: none"> 1. Enclose and ventilate sources of emission; 2. Prohibit open handling of materials; and 3. Use mechanical ventilation (make-up air) in processing areas 	Primary Beryllium Production; Beryllium Oxide Ceramics and Composites; Aluminum and Copper Foundries; Secondary Smelting.
Metal Forming (e.g., rolling, drawing, straightening, annealing, extruding).	<ol style="list-style-type: none"> 1. For rolling operations, install LEV on mill stands and reels such that a hood extends the length of the mill; 2. For point and chamfer operations, install LEV hoods at both ends of the rod; 3. For annealing operations, provide an inert atmosphere for annealing furnaces, and LEV hoods at entry and exit points; 4. For swaging operations, install LEV on the cutting head; 5. For drawing, straightening, and extruding operations, install LEV at entry and exit points; and 6. For all metal forming operations, install mechanical ventilation (make-up air) for processing areas. 	Primary Beryllium Production; Copper Rolling, Drawing, and Extruding; Fabrication of Beryllium Alloy Products.
Welding	<p>For fixed welding operations:</p> <ol style="list-style-type: none"> 1. Enclose work locations around the source of fume generation and use local exhaust ventilation; and 	Primary Beryllium Production; Fabrication of Beryllium Alloy

Operation	Minimal control strategy *	Application group
	2. Install close capture hood enclosure designed so as to minimize fume emission from the enclosure welding operation.	Products; Welding.
	For manual operations:	
	1. Use portable local exhaust and general ventilation	

* All LEV specifications should be in accordance with the ACGIH® Publication No. 2094, "Industrial Ventilation—A Manual of Recommended Practice" wherever applicable.

Appendix A to § 1910.1024—Operations for Establishing Beryllium Work Areas

Paragraph (b) of this standard defines a beryllium work area as any work area where materials that contain at least 0.1 percent beryllium by weight are processed (1) during any of the operations listed in Appendix A of this standard, or (2) where employees are, or can reasonably be expected to be, exposed to airborne beryllium at or above the action level. Table A.1 in this appendix sets forth the operations that, where performed under the circumstances described in the column heading above the particular operations, trigger the requirement for a beryllium work area.

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

<u>Beryllium metal alloy operations (generally <10% beryllium by weight)</u>	<u>Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations</u>	<u>Beryllium oxide operations</u>
<u>Abrasive Blasting.</u>	<u>Abrasive Blasting.</u>	<u>Abrasive Blasting.</u>
<u>Abrasive Processing.</u>	<u>Abrasive Processing.</u>	<u>Abrasive Processing.</u>
<u>Abrasive Sawing.</u>	<u>Abrasive Sawing.</u>	<u>Abrasive Sawing.</u>
<u>Annealing.</u>	<u>Annealing.</u>	<u>Boring.</u>
<u>Bright Cleaning.</u>	<u>Atomizing.</u>	<u>Brazing (>1,100 °C).</u>
<u>Brushing.</u>	<u>Attritioning.</u>	<u>Broaching with green ceramic.</u>
<u>Buffing.</u>	<u>Blanking.</u>	<u>Brushing.</u>
<u>Burnishing.</u>	<u>Bonding.</u>	<u>Buffing.</u>

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

<u>Beryllium metal alloy operations (generally <10% beryllium by weight)</u>	<u>Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations</u>	<u>Beryllium oxide operations</u>
<u>Casting.</u>	<u>Boring.</u>	<u>Centerless grinding.</u>
<u>Centerless Grinding.</u>	<u>Breaking.</u>	<u>Chemical Cleaning.</u>
<u>Chemical Cleaning.</u>	<u>Bright Cleaning.</u>	<u>Chemical Etching.</u>
<u>Chemical Etching.</u>	<u>Broaching.</u>	<u>CNC Machining.</u>
<u>Chemical Milling.</u>	<u>Brushing.</u>	<u>Cold Isostatic Pressing (CIP).</u>
<u>Dross Handling.</u>	<u>Buffing.</u>	<u>Crushing.</u>
<u>Deburring (grinding).</u>	<u>Burnishing.</u>	<u>Cutting.</u>
<u>Electrical Chemical Machining (ECM).</u>	<u>Casting.</u>	<u>Deburring (grinding).</u>
<u>Electrical Discharge Machining (EDM).</u>	<u>Centerless Grinding.</u>	<u>Deburring (non-grinding).</u>
<u>Extrusion.</u>	<u>Chemical Cleaning.</u>	<u>Destructive Testing.</u>
<u>Forging.</u>	<u>Chemical Etching</u>	<u>Dicing.</u>
<u>Grinding.</u>	<u>Chemical Milling.</u>	<u>Drilling.</u>
<u>Heat Treating (in air).</u>	<u>CNC Machining</u>	<u>Dry/wet Tumbling.</u>
<u>High Speed Machining (>10,000 rpm).</u>	<u>Cold Isostatic Pressing.</u>	<u>Extrusion.</u>
<u>Hot Rolling.</u>	<u>Cold Pilger.</u>	<u>Filing by Hand.</u>
<u>Lapping.</u>	<u>Crushing.</u>	<u>Firing of Green Ceramic.</u>
<u>Laser Cutting.</u>	<u>Cutting.</u>	<u>Firing of Refractory Metallization (>1,100 °C).</u>
<u>Laser Machining.</u>	<u>Deburring.</u>	<u>Grinding.</u>
<u>Laser Scribing.</u>	<u>Dicing.</u>	<u>Honing.</u>

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

<u>Beryllium metal alloy operations (generally <10% beryllium by weight)</u>	<u>Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations</u>	<u>Beryllium oxide operations</u>
<u>Laser Marking.</u>	<u>Drawing.</u>	<u>Hot Isostatic Pressing (HIP).</u>
<u>Melting.</u>	<u>Drilling.</u>	<u>Lapping.</u>
<u>Photo-Etching.</u>	<u>Dross Handling.</u>	<u>Laser Cutting.</u>
<u>Pickling.</u>	<u>Electrical Chemical Machining (ECM).</u>	<u>Laser Machining.</u>
<u>Point and Chamfer.</u>	<u>Electrical Discharge Machining (EDM).</u>	<u>Laser Scribing.</u>
<u>Polishing.</u>	<u>Extrusion.</u>	<u>Laser Marking.</u>
<u>Torch Cutting (i.e., oxy-acetylene).</u>	<u>Filing by Hand.</u>	<u>Machining.</u>
<u>Tumbling.</u>	<u>Forging.</u>	<u>Milling.</u>
<u>Water-jet Cutting.</u>	<u>Grinding.</u>	<u>Piercing.</u>
<u>Welding.</u>	<u>Heading.</u>	<u>Mixing.</u>
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<u>Sanding.</u>	<u>Heat Treating.</u>	<u>Plasma Spray.</u>
<u>Slab Milling.</u>	<u>Honing.</u>	<u>Polishing.</u>
	<u>Hot Isostatic Pressing (HIP).</u>	<u>Powder Handling.</u>
	<u>Lapping.</u>	<u>Powder Pressing.</u>
	<u>Laser Cutting.</u>	<u>Reaming.</u>
	<u>Laser Machining.</u>	<u>Sanding.</u>
	<u>Laser Scribing.</u>	<u>Sectioning.</u>
	<u>Laser Marking.</u>	<u>Shearing.</u>
	<u>Machining.</u>	<u>Sintering of Green Ceramic.</u>

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

<u>Beryllium metal alloy operations (generally <10% beryllium by weight)</u>	<u>Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations</u>	<u>Beryllium oxide operations</u>
	<u>Melting.</u>	<u>Sintering of Refractory Metallization (>1,100 °C).</u>
	<u>Milling.</u>	<u>Snapping.</u>
	<u>Mixing.</u>	<u>Spray Drying.</u>
	<u>Photo-Etching.</u>	<u>Tape Casting.</u>
	<u>Pickling.</u>	<u>Turning.</u>
	<u>Piercing.</u>	<u>Water Jet Cutting.</u>
	<u>Pilger.</u>	
	<u>Plasma Spray.</u>	
	<u>Point and Chamfer.</u>	
	<u>Polishing.</u>	
	<u>Powder Handling.</u>	
	<u>Powder Pressing.</u>	
	<u>Pressing.</u>	
	<u>Reaming.</u>	
	<u>Roll Bonding.</u>	
	<u>Rolling.</u>	
	<u>Sanding.</u>	
	<u>Sawing (tooth blade).</u>	
	<u>Shearing.</u>	
	<u>Sizing.</u>	
	<u>Skiving.</u>	
	<u>Slitting.</u>	

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

<u>Beryllium metal alloy operations (generally <10% beryllium by weight)</u>	<u>Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations</u>	<u>Beryllium oxide operations</u>
	<u>Snapping.</u>	
	<u>Sputtering.</u>	
	<u>Stamping.</u>	
	<u>Spray Drying.</u>	
	<u>Tapping.</u>	
	<u>Tensile Testing.</u>	
	<u>Torch Cutting (i.e., oxy acetylene).</u>	
	<u>Trepanning.</u>	
	<u>Tumbling</u>	
	<u>Turning.</u>	
	<u>Vapor Deposition.</u>	
	<u>Water-Jet Cutting.</u>	
	<u>Welding.</u>	

End Supplemental Information

Footnotes

1. In the 2017 final rule, OSHA issued three separate beryllium standards—general industry, shipyards, and construction. This final rule amends only the general industry standard. Therefore, neither this Events Leading to the Final Rule section nor the remainder of the preamble will include information about the other two standards

2. OSHA stated in the NPRM that the agency believed that the standard as modified by the proposal would provide equivalent protection to the existing standard; and OSHA would therefore accept compliance with the standard, as modified by the proposal, as compliance with the standard while the rulemaking was pending.

3. Assuming that this initial analysis does not result in a confirmed positive diagnosis, that employee would not be confirmed positive until a second test two years later under the current rule.

4. As discussed in Section XI, Summary and Explanation of the Final Rule, OSHA also redesignated previous paragraphs (k)(7)(ii), (iii), (iv), and (v) as paragraphs (k)(7)(iii), (iv), (v), and (vi), respectively. This redesignation in paragraph (k) also affects a reference in paragraph (l)(1)(ii). These changes are merely administrative and do not have any substantive or monetary effect.

5. As discussed in the Summary and Explanation for paragraph (k), Medical Surveillance, OSHA never intended to limit the required tests to the three tests listed in the previous definition of the term CBD diagnostic center.

6. Document ID OSHA-H005C-2006-0870-0637 provides some information from the NJH website, which provides an overview of the types of tests performed.

7. OSHA also notes that it has always intended for employers to make available any additional tests deemed appropriate by the examining physician (see the discussion of paragraph (k), Medical Surveillance, in Section XI, Summary and Explanation of the Final Rule, of this preamble). The economic analysis of the 2017 final rule did not explicitly account for these rare cases where a test recommended by the examining physician of the CBD diagnostic center was not available at the same center. Hence, there would be a de minimis cost adjustment increase of the total cost of the 2017 final rule due to this consideration. This is not a change in people's behavior, simply a methodological change. The current final rule could affect people's behavior and be a true change (decrease) in costs. This change merely provides employers with a more flexible, potentially less expensive, manner to provide those tests in the rare situation where they are not available at the original CBD diagnostic center.

8. Although the agency did not receive any comments questioning the economic or technological feasibility of the proposed changes, at least one stakeholder argued that the previous standard was not economically or technologically feasible and that the proposed provisions remedied some of that stakeholder's concerns with feasibility (Document ID 0038, pp. 13, 21-22, 43). Because the feasibility of the January 2017 final rule as a whole is not at issue in this rulemaking, OSHA considers these comments indicating that these changes provide both economic and technological feasibility relief as support for the economic and technological feasibility of the proposed revisions.

9. OSHA notes that Materion also argued that the State Plans that have already adopted the original OSHA standard should be required to adopt the changes OSHA previously adopted in the 2018 direct final rule, as well as the changes that result from the current rulemaking (Document ID 0038-A5, p. 1). Whether OSHA should require State Plans to adopt the changes made in the 2018 direct final rule is out of the scope of this rulemaking and, thus, will not be considered here.

10. Table A.1 is divided into three categories: (1) Beryllium Metal Alloy Operations (generally <10% beryllium by weight); (2) Beryllium Composite Operations (generally >10% beryllium by weight) and Beryllium Metal Operations; and (3) Beryllium Oxide Operations.

11. The agency notes that DOD's comment suggests there might be some confusion as to whether beryllium alloys and beryllium composites are analogous. In fact, these materials have different structures and should be treated differently from a control strategy point of view. A metal alloy is a metal which is a homogeneous mixture of two or more metals or of a metal and another element to provide unique characteristics or properties (see <https://www.thefreedictionary.com/Metal+alloy>). A

“beryllium composite,” on the other hand, is a metal matrix composite or (MMC) which typically contain at least two distinct constituent parts (see <https://www.azom.com/article.aspx?ArticleID=9843>).

12. In the preamble to the 2017 final rule, OSHA found that three borderline BeLPT results recognize a change in a person's immune system with respect to beryllium exposure based on Middleton et al.'s 2011 finding that three borderline BeLPT results have a positive predictive value (PPV) of over 90 percent (82 FR at 2501), and therefore the agency included three borderline results in the criteria for confirmed positive (82 FR at 2646).

13. The ATS also asserted that the removal of the phrase “beryllium sensitization” would reduce workers' right to file for worker's compensation (Document ID 0021, p. 3). The ATS did not explain how the definition of confirmed positive in the beryllium standard could affect worker's compensation claims and at least one other commenter questioned the ATS's assertion (see Document ID 0038, p. 19). Regardless, OSHA intends the definition of confirmed positive to serve only as a trigger for certain provisions of the beryllium standard. How OSHA defines this phrase for purposes of the beryllium standard in no way limits healthcare professionals' ability or incentive to diagnose beryllium sensitization.

14. Bronchoalveolar lavage is a method of “washing” the lungs with fluid inserted via a flexible fiberoptic instrument known as a bronchoscope, removing the fluid and analyzing the content for the inclusion of immune cells reactive to beryllium exposure (82 FR at 2497).

15. NJH also asserted that “[a]ll workers in a beryllium using industry should receive beryllium education with programs tailored to specific jobs and processes” (Document ID 0022, p. 7). Mount Sinai Selikoff Centers for Occupational Health similarly advocated for “intensive training and protective gear for all workers who may be at risk of beryllium exposure” (Document ID 0032, p. 3). OSHA notes that the beryllium standard has never required all workers in a beryllium-using industry to receive training. Rather, the standard has always required training for those workers who have or are reasonably expected to have airborne exposure to beryllium regardless of the size fraction. The standard continues to require training for all such workers.

16. Materion also asserted that the evidence in the record is insufficient to conclude that “dermal contact alone is sufficient to create a significant risk of CBD or even beryllium sensitization” (Document ID 0038, pp. 14-15). However, in the 2017 final rule, OSHA specifically found that that dermal exposure can result in sensitization (see 82 FR at 2489). The 2018 NPRM did not propose revisiting this finding.

17. Subsequent to the 2017 final rule, the 2018 direct final rule clarified that the requirements of paragraph (j)(3) do not apply to materials containing only trace amounts of beryllium (less than 0.1 percent by weight).

18. As OSHA noted in the 2018 NPRM, employees who may be exposed to these materials during intra-plant transfers will not go unprotected. On the contrary, other provisions of the beryllium standard require employers to communicate possible hazards to these employees and protect them during such transfers (see, e.g., paragraph (f), Methods of compliance; paragraph (g), Respiratory protection; paragraph (h), Personal protective clothing and equipment; paragraph (m), Communication of hazards).

19. DOD's suggestion regarding DOE's cleanliness standards is addressed below in this section of this final rule as part of the discussion of the seventh and final proposed change to paragraph (j)(3) relating to the cleaning of materials designated for disposal, recycling, or reuse.

20. OSHA notes that the standard would require additional training for workers who were exposed during an emergency who had already been trained if the employer realized that those workers were not knowledgeable about topics such as the potential medical conditions which may result from exposure to beryllium or symptoms that may trigger a medical examination (see paragraph (m)(4)(ii)(A); see also additional training requirements under paragraph (m)(4)(iii)).

21. Under paragraph (k)(6)(i)(D), the employer is to ensure that the PLHCP explains the results of the medical examination to the employee, including results of tests conducted and medical conditions related to airborne beryllium exposure that require further evaluation or treatment.

22. Document ID OSHA-H005C-2006-0870-0637 provides information from the NJH website, which provides an overview of the types of tests performed.

23. The beryllium standard for general industry, which was not published until 2017, was not listed in the SIP-IV NPRM and, therefore, the SIP-IV final rule did not affect the 2017 final rule's requirement to include employee SSNs in records.

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1910.1024 App A

Appendix A to § 1910.1024—Operations for Establishing Beryllium Work Areas

Paragraph (b) of this standard defines a beryllium work area as any work area where materials that contain at least 0.1 percent beryllium by weight are processed (1) during any of the operations listed in Appendix A of this standard, or (2) where employees are, or can reasonably be expected to be, exposed to airborne beryllium at or above the action level. Table A.1 in this appendix sets forth the operations that, where performed under the circumstances described in the column heading above the particular operations, trigger the requirement for a beryllium work area.

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

Beryllium metal alloy operations (generally <10% beryllium by weight)	Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations	Beryllium oxide operations
Abrasive Blasting.	Abrasive Blasting.	Abrasive Blasting.
Abrasive Processing.	Abrasive Processing.	Abrasive Processing.
Abrasive Sawing.	Abrasive Sawing.	Abrasive Sawing.
Annealing.	Annealing.	Boring.
Bright Cleaning.	Atomizing.	Brazing (>1,100 °C).
Brushing.	Attritioning.	Broaching with green ceramic.
Buffing.	Blanking.	Brushing.
Burnishing.	Bonding.	Buffing.
Casting.	Boring.	Centerless grinding.
Centerless Grinding.	Breaking.	Chemical Cleaning.
Chemical Cleaning.	Bright Cleaning.	Chemical Etching.
Chemical Etching.	Broaching.	CNC Machining.
Chemical Milling.	Brushing.	Cold Isostatic Pressing (CIP).
Dross Handling.	Buffing.	Crushing.
Deburring (grinding).	Burnishing.	Cutting.

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

Beryllium metal alloy operations (generally <10% beryllium by weight)	Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations	Beryllium oxide operations
Electrical Chemical Machining (ECM).	Casting.	Deburring (grinding).
Electrical Discharge Machining (EDM).	Centerless Grinding.	Deburring (non-grinding).
Extrusion.	Chemical Cleaning.	Destructive Testing.
Forging.	Chemical Etching	Dicing.
Grinding.	Chemical Milling.	Drilling.
Heat Treating (in air).	CNC Machining	Dry/wet Tumbling.
High Speed Machining (>10,000 rpm).	Cold Isostatic Pressing.	Extrusion.
Hot Rolling.	Cold Pilger.	Filing by Hand.
Lapping.	Crushing.	Firing of Green Ceramic.
Laser Cutting.	Cutting.	Firing of Refractory Metallization (>1,100 °C).
Laser Machining.	Deburring.	Grinding.
Laser Scribing.	Dicing.	Honing.
Laser Marking.	Drawing.	Hot Isostatic Pressing (HIP).
Melting.	Drilling.	Lapping.
Photo-Etching.	Dross Handling.	Laser Cutting.
Pickling.	Electrical Chemical Machining (ECM).	Laser Machining.
Point and Chamfer.	Electrical Discharge Machining (EDM).	Laser Scribing.
Polishing.	Extrusion.	Laser Marking.
Torch Cutting (i.e., oxy-acetylene).	Filing by Hand.	Machining.

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

Beryllium metal alloy operations (generally <10% beryllium by weight)	Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations	Beryllium oxide operations
Tumbling.	Forging.	Milling.
Water-jet Cutting.	Grinding.	Piercing.
Welding.	Heading.	Mixing.
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Sanding.	Heat Treating.	Plasma Spray.
Slab Milling.	Honing.	Polishing.
	Hot Isostatic Pressing (HIP).	Powder Handling.
	Lapping.	Powder Pressing.
	Laser Cutting.	Reaming.
	Laser Machining.	Sanding.
	Laser Scribing.	Sectioning.
	Laser Marking.	Shearing.
	Machining.	Sintering of Green Ceramic.
	Melting.	Sintering of Refractory Metallization (>1,100 °C).
	Milling.	Snapping.
	Mixing.	Spray Drying.
	Photo-Etching.	Tape Casting.
	Pickling.	Turning.
	Piercing.	Water Jet Cutting.
	Pilger.	
	Plasma Spray.	

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

Beryllium metal alloy operations (generally <10% beryllium by weight)	Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations	Beryllium oxide operations
	Point and Chamfer.	
	Polishing.	
	Powder Handling.	
	Powder Pressing.	
	Pressing.	
	Reaming.	
	Roll Bonding.	
	Rolling.	
	Sanding.	
	Sawing (tooth blade).	
	Shearing.	
	Sizing.	
	Skiving.	
	Slitting.	
	Snapping.	
	Sputtering.	
	Stamping.	
	Spray Drying.	
	Tapping.	
	Tensile Testing.	
	Torch Cutting (i.e., oxy acetylene).	
	Trepanning.	
	Tumbling	

Table A.1—Operations for Establishing Beryllium Work Areas Where Processing Materials Containing at Least 0.1 Percent Beryllium by Weight

Beryllium metal alloy operations (generally <10% beryllium by weight)	Beryllium composite operations (generally >10% beryllium by weight) and beryllium metal operations	Beryllium oxide operations
	Turning.	
	Vapor Deposition.	
	Water-Jet Cutting.	
	Welding.	

End Supplemental Information

Footnotes

1. In the 2017 final rule, OSHA issued three separate beryllium standards—general industry, shipyards, and construction. This final rule amends only the general industry standard. Therefore, neither this Events Leading to the Final Rule section nor the remainder of the preamble will include information about the other two standards
2. OSHA stated in the NPRM that the agency believed that the standard as modified by the proposal would provide equivalent protection to the existing standard; and OSHA would therefore accept compliance with the standard, as modified by the proposal, as compliance with the standard while the rulemaking was pending.
3. Assuming that this initial analysis does not result in a confirmed positive diagnosis, that employee would not be confirmed positive until a second test two years later under the current rule.
4. As discussed in Section XI, Summary and Explanation of the Final Rule, OSHA also redesignated previous paragraphs (k)(7)(ii), (iii), (iv), and (v) as paragraphs (k)(7)(iii), (iv), (v), and (vi), respectively. This redesignation in paragraph (k) also affects a reference in paragraph (l)(1)(ii). These changes are merely administrative and do not have any substantive or monetary effect.
5. As discussed in the Summary and Explanation for paragraph (k), Medical Surveillance, OSHA never intended to limit the required tests to the three tests listed in the previous definition of the term CBD diagnostic center.
6. Document ID OSHA-H005C-2006-0870-0637 provides some information from the NJH website, which provides an overview of the types of tests performed.
7. OSHA also notes that it has always intended for employers to make available any additional tests deemed appropriate by the examining physician (see the discussion of paragraph (k), Medical Surveillance, in Section XI, Summary and Explanation of the Final Rule, of this preamble). The economic analysis of the 2017 final rule did not explicitly account for these rare cases where a test recommended

by the examining physician of the CBD diagnostic center was not available at the same center. Hence, there would be a de minimis cost adjustment increase of the total cost of the 2017 final rule due to this consideration. This is not a change in people's behavior, simply a methodological change. The current final rule could affect people's behavior and be a true change (decrease) in costs. This change merely provides employers with a more flexible, potentially less expensive, manner to provide those tests in the rare situation where they are not available at the original CBD diagnostic center.

8. Although the agency did not receive any comments questioning the economic or technological feasibility of the proposed changes, at least one stakeholder argued that the previous standard was not economically or technologically feasible and that the proposed provisions remedied some of that stakeholder's concerns with feasibility (Document ID 0038, pp. 13, 21-22, 43). Because the feasibility of the January 2017 final rule as a whole is not at issue in this rulemaking, OSHA considers these comments indicating that these changes provide both economic and technological feasibility relief as support for the economic and technological feasibility of the proposed revisions.

9. OSHA notes that Materion also argued that the State Plans that have already adopted the original OSHA standard should be required to adopt the changes OSHA previously adopted in the 2018 direct final rule, as well as the changes that result from the current rulemaking (Document ID 0038-A5, p. 1). Whether OSHA should require State Plans to adopt the changes made in the 2018 direct final rule is out of the scope of this rulemaking and, thus, will not be considered here.

10. Table A.1 is divided into three categories: (1) Beryllium Metal Alloy Operations (generally <10% beryllium by weight); (2) Beryllium Composite Operations (generally >10% beryllium by weight) and Beryllium Metal Operations; and (3) Beryllium Oxide Operations.

11. The agency notes that DOD's comment suggests there might be some confusion as to whether beryllium alloys and beryllium composites are analogous. In fact, these materials have different structures and should be treated differently from a control strategy point of view. A metal alloy is a metal which is a homogeneous mixture of two or more metals or of a metal and another element to provide unique characteristics or properties (see <https://www.thefreedictionary.com/Metal+alloy>). A "beryllium composite," on the other hand, is a metal matrix composite or (MMC) which typically contain at least two distinct constituent parts (see <https://www.azom.com/article.aspx?ArticleID=9843>).

12. In the preamble to the 2017 final rule, OSHA found that three borderline BeLPT results recognize a change in a person's immune system with respect to beryllium exposure based on Middleton et al.'s 2011 finding that three borderline BeLPT results have a positive predictive value (PPV) of over 90 percent (82 FR at 2501), and therefore the agency included three borderline results in the criteria for confirmed positive (82 FR at 2646).

13. The ATS also asserted that the removal of the phrase "beryllium sensitization" would reduce workers' right to file for worker's compensation (Document ID 0021, p. 3). The ATS did not explain how the definition of confirmed positive in the beryllium standard could affect worker's compensation claims and at least one other commenter questioned the ATS's assertion (see Document ID 0038, p. 19). Regardless, OSHA intends the definition of confirmed positive to serve only as a trigger for certain provisions of the beryllium standard. How OSHA defines this phrase for purposes of the beryllium standard in no way limits healthcare professionals' ability or incentive to diagnose beryllium sensitization.

14. Bronchoalveolar lavage is a method of “washing” the lungs with fluid inserted via a flexible fiberoptic instrument known as a bronchoscope, removing the fluid and analyzing the content for the inclusion of immune cells reactive to beryllium exposure (82 FR at 2497).

15. NJH also asserted that “[a]ll workers in a beryllium using industry should receive beryllium education with programs tailored to specific jobs and processes” (Document ID 0022, p. 7). Mount Sinai Selikoff Centers for Occupational Health similarly advocated for “intensive training and protective gear for all workers who may be at risk of beryllium exposure” (Document ID 0032, p. 3). OSHA notes that the beryllium standard has never required all workers in a beryllium-using industry to receive training. Rather, the standard has always required training for those workers who have or are reasonably expected to have airborne exposure to beryllium regardless of the size fraction. The standard continues to require training for all such workers.

16. Materion also asserted that the evidence in the record is insufficient to conclude that “dermal contact alone is sufficient to create a significant risk of CBD or even beryllium sensitization” (Document ID 0038, pp. 14-15). However, in the 2017 final rule, OSHA specifically found that that dermal exposure can result in sensitization (see 82 FR at 2489). The 2018 NPRM did not propose revisiting this finding.

17. Subsequent to the 2017 final rule, the 2018 direct final rule clarified that the requirements of paragraph (j)(3) do not apply to materials containing only trace amounts of beryllium (less than 0.1 percent by weight).

18. As OSHA noted in the 2018 NPRM, employees who may be exposed to these materials during intra-plant transfers will not go unprotected. On the contrary, other provisions of the beryllium standard require employers to communicate possible hazards to these employees and protect them during such transfers (see, e.g., paragraph (f), Methods of compliance; paragraph (g), Respiratory protection; paragraph (h), Personal protective clothing and equipment; paragraph (m), Communication of hazards).

19. DOD's suggestion regarding DOE's cleanliness standards is addressed below in this section of this final rule as part of the discussion of the seventh and final proposed change to paragraph (j)(3) relating to the cleaning of materials designated for disposal, recycling, or reuse.

20. OSHA notes that the standard would require additional training for workers who were exposed during an emergency who had already been trained if the employer realized that those workers were not knowledgeable about topics such as the potential medical conditions which may result from exposure to beryllium or symptoms that may trigger a medical examination (see paragraph (m)(4)(ii)(A); see also additional training requirements under paragraph (m)(4)(iii)).

21. Under paragraph (k)(6)(i)(D), the employer is to ensure that the PLHCP explains the results of the medical examination to the employee, including results of tests conducted and medical conditions related to airborne beryllium exposure that require further evaluation or treatment.

22. Document ID OSHA-H005C-2006-0870-0637 provides information from the NJH website, which provides an overview of the types of tests performed.

23. The beryllium standard for general industry, which was not published until 2017, was not listed in the SIP-IV NPRM and, therefore, the SIP-IV final rule did not affect the 2017 final rule's requirement to include employee SSNs in records.

VERMONT **GENERAL ASSEMBLY**

The Vermont Statutes Online

Title 21 : Labor**Chapter 003 : Safety****Subchapter 004 : General Provisions**

(Cite as: 21 V.S.A. § 204)

§ 204. Rules and procedure

(a) 3 V.S.A. chapter 25, relating to administrative procedure, shall apply to this chapter and the VOSHA Code.

(b) All or part of a printed publication of standards or rules, including standards promulgated under the Act, may be made a rule or part of a rule under this chapter or the VOSHA Code, by reference in the rule to the printed publication by its title and where it may be procured at the time the rule is promulgated under this chapter. (Added 1971, No. 205 (Adj. Sess.), § 1.)

VERMONT **GENERAL ASSEMBLY**

The Vermont Statutes Online

Title 21 : Labor

Chapter 003 : Safety

Subchapter 005 : Occupational Safety And Health

(Cite as: 21 V.S.A. § 224)

§ 224. Rules and standards

(a) The Commissioner shall adopt rules and standards necessary to implement the purposes and duties set forth in this subchapter insofar as they relate to safety and to enforcement of the VOSHA Code.

(b) The Commissioner, in consultation with the Secretary of Human Services, shall adopt rules and standards necessary to implement the purposes of the VOSHA Code and duties thereunder, insofar as they relate to health.

(c) Any standard adopted under this section shall prescribe the use of labels or other appropriate forms of warning as are necessary to inform employees of all safety or health hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions for safe use or exposure. Where appropriate, a rule shall prescribe suitable protective clothing, devices, or equipment which shall be provided by the employer, and control or technological procedures to be used in connection with the safety or health hazard; and shall provide for monitoring or measuring employee exposure at such locations and intervals and in such manner as may be necessary for the protection of employees.

(d) Where appropriate, a standard adopted in consultation with the Secretary of Human Services may prescribe the type and frequency of medical examinations or other tests which shall be made available by an employer or at the expense of the employer, to employees exposed to health hazards in employment, in order to effectively determine whether the health of the employee is adversely affected by exposure to the hazard. In the event medical examinations are in the nature of research, as determined by the Secretary of Human Services, such examinations may be furnished at the expense of the State. The results of the examinations or tests shall be furnished only to the Secretary of Human Services, the Commissioner of Health, the Director of Occupational Health, the Commissioner of Labor, and at the request of the employee, to the employee's physician and the employee.

(e) The Commissioner, in consultation with the Secretary, in adopting standards dealing with toxic materials or harmful physical agents under this section, shall set the

standard which most adequately ensures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his or her working life. Development of standards under this subsection shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of safety and health protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other safety and health laws. Whenever practicable, the standard adopted shall be expressed in terms of objective criteria and of the performance desired. (Added 1971, No. 205 (Adj. Sess.), § 1; amended 1973, No. 214 (Adj. Sess.), § 18; 2005, No. 103 (Adj. Sess.), § 3, eff. April 5, 2006; 2015, No. 23, § 119; 2015, No. 87 (Adj. Sess.), § 2; 2015, No. 97 (Adj. Sess.), § 54.)



Proposed Rules Postings

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Deadline For Public Comment

Deadline: Jul 15, 2021

Please submit comments to the agency or primary contact person listed below, before the deadline.

Rule Details

Rule Number:	21P016
Title:	VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry.
Type:	Standard
Status:	Proposed
Agency:	Department of Labor
Legal Authority:	21 V.S.A. §§ 204, 224
Summary:	Occupational exposure to respirable beryllium is highly toxic and has long been known to cause berylliosis, also known as chronic beryllium disease (CBD) and lung cancer. This rulemaking was prompted by Federal OSHA and incorporated

standards were adopted as such. This current rulemaking is intended to address areas of the previous standard that are somewhat ambiguous and confusing to employers. OSHA is amending the existing general industry standard for occupational exposure to beryllium and beryllium compounds to clarify certain provisions and simplify or improve compliance. The revisions in this final rule are designed to maintain or enhance worker protections overall by ensuring that the rule is well understood and compliance is more straightforward. VOSHA as a State Plan of Federal OSHA is adopting this rule change as an extension of the previous OSHA adopted rule.

Persons Affected:

Compared to other OSHA health standards, the beryllium rule covers a relatively small worker population of approximately 62,000 workers (nationally). Workers and entities in Vermont likely affected by this rule include aerospace workers involved in precision machining and welding, dental offices that use beryllium alloy and some construction workers that use blasting agents of more than .1 beryllium.

Economic Impact:

As this rule does not represent a significant change in requirements, the cost to employers is expected to be nonexistent. As OSHA has stated "After carefully reviewing the proposed clarifications and revisions, OSHA preliminarily determined that their net total effect would result in potential cost savings, mainly from improving employer understanding and facilitating application of the rule (83 FR at 63760-61)." VOSHA considers the effects of this rule change to be net zero for employers.


Posting date:

Jun 02,2021

Hearing Information

Information for Hearing # 1

Hearing date:

07-08-2021 1:00 PM 

Location:

Department of Labor

Address:

5 Green Mountain Drive, PO Box 488

City:

Montpelier

State:

VT

Zip:

05602

Hearing Notes:

Contact Information

Information for Contact # 1

Level: Primary
 Name: Daniel A. Whipple
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Information for Contact # 2

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Keyword Information

Keywords:

OSHA Subpart Z
 Beryllium and Beryllium Compounds
 VOSHA Beryllium standard
 1910.1024



PROPOSED STATE RULES

By law, public notice of proposed rules must be given by publication in newspapers of record. The purpose of these notices is to give the public a chance to respond to the proposals. The public notices for administrative rules are now also available online at <https://secure.vermont.gov/SOS/rules/> . The law requires an agency to hold a public hearing on a proposed rule, if requested to do so in writing by 25 persons or an association having at least 25 members.

To make special arrangements for individuals with disabilities or special needs please call or write the contact person listed below as soon as possible.

To obtain further information concerning any scheduled hearing(s), obtain copies of proposed rule(s) or submit comments regarding proposed rule(s), please call or write the contact person listed below. You may also submit comments in writing to the Legislative Committee on Administrative Rules, State House, Montpelier, Vermont 05602 (802-828-2231).

VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry.
Vermont Proposed Rule: 21P016

AGENCY: Department of Labor

CONCISE SUMMARY: Occupational exposure to respirable beryllium is highly toxic and has long been known to cause berylliosis, also known as chronic beryllium disease (CBD) and lung cancer. This rulemaking was prompted by Federal OSHA and incorporated standards were adopted as such. This current rulemaking is intended to address areas of the previous standard that are somewhat ambiguous and confusing to employers. OSHA is amending the existing general industry standard for occupational exposure to beryllium and beryllium compounds to clarify certain provisions and simplify or improve compliance. The revisions in this final rule are designed to maintain or enhance worker protections overall by ensuring that the rule is well understood and compliance is more straightforward. VOSHA as a State Plan of Federal OSHA is adopting this rule change as an extension of the previous OSHA adopted rule.

FOR FURTHER INFORMATION, CONTACT: Daniel A. Whipple, Vermont Occupational Safety and Health Administration PO Box 488 Montpelier, VT 05601-0488 Tel: 802-828-5084 Fax: 802-828-0408 Email: dan.whipple@vermont.gov URL: <https://labor.vermont.gov/vosha>.

FOR COPIES: Bailey Thibault, Vermont Occupational Safety and Health Administration PO Box 488 Montpelier VT 05601-0488 Tel: 802-828-5085 Fax: 802-828-0408 Email: bailey.thibault@vermont.gov.

(802) 828-2863

MEMORANDUM

OFFICE OF THE SECRETARY OF STATE

Primary Contact: Daniel A. Whipple, Vermont Occupational Safety and Health Administration PO Box 488 Montpelier, VT 05601-0488 Tel: 802-828-5084 Fax: 802-828-0408 Email: dan.whipple@vermont.gov

Secondary Contact: Bailey Thibault, Vermont Occupational Safety and Health Administration PO Box 488 Montpelier VT 05601-0488 Tel: 802-828-5085 Fax: 802-828-0408 Email: bailey.thibault@vermont.gov.

URL: <https://labor.vermont.gov/vosha>

From: APA Coordinator, VSARA

RE: VOSHA Rule: 29 CFR 1910.1024, Updates and Revisions of the Beryllium Standard for General Industry.

Date 05/27/2021

We received Proposed Rule on 05/27/2021
Final Proposed Rule on
Adopted Rule on

We have assigned the following rule number(s):

Proposed Rule Number: 21P016

Adopted Rule Number:

(Final Proposals are not assigned a new number; they retain the Proposed Rule Number.)

The following problems were taken care of by phone/should be taken care of immediately:

We cannot accept this filing until the following problems are taken care of:

The notice for this proposed rule appeared/will appear online on: 6/2/2021 and in the newspapers of record on 6/10/2021.

This rule takes effect on
Adoption Deadline: 01/27/2022

Please note:

If you have any questions, please call me at 828-2863. OR
E-Mail me at: sos.statutoryfilings@vermont.gov

cc: Charlene Dindo
Erin Sylvia