Fiscal impact calculations

DEQ Art Glass Permanent Rule
Fiscal Impact Estimate for proposed rule- Bullseye Glass Company

Bullseye - Tier 2			
Requirements summary	Install control device on all furnaces using glassmaking HAPs. If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits		
	Cost Estimate		
	low	**high**	
Permitting costs			
NESHAP 6S applies?	Y		
Needs Title V permit because of 6S	Y		
Cost of Title V application (including DEQ fees + consultant to prepare)	$25,000	$100,000	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Annual DEQ Title V permit costs	$10,310	$11,510	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Incremental extra cost of Title V application due to art glass rule	$0	$5,000	Assume preparing the permit application would cost 0% to 5% more because of the incremental addition of the proposed rules.
Incremental extra cost of Title V annual permit fees due to art glass rule	$0	$0	The proposed rules would not increase the annual permit fees if the facility would have a Title V anyway.
Number of Control Devices			
# of additional baghouses installed, over and above what would have been installed due to NESHAP 6S alone	0	2	This is uncertain because changes to comply with NESHAP 6S are happening at the same time as efforts to comply with this rule.
Cost Per Control Device			
Install baghouse	$250,000	$400,000	
Install baghouse leak detection system or HEPA afterfilter	$10,000	$30,000	
One-time 'grain loading' source test to demonstrate baghouse is working	$4,000	$15,000	Assume length of run depends on detection limits, does not have to be entire production run.
Annual operation	$15,000	$70,000	Electricity, bag replacement etc
Annual cost to monitor and report on baghouse to DEQ	$12,000	$17,000	
Total one-time costs per baghouse	$264,000	$445,000	
Total annual costs per baghouse	$27,000	$87,000	
Source Testing Costs			

Bullseye - Tier 2		
Requirements summary	Install control device on all furnaces using glassmaking HAPs. If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits	
	Cost Estimate	
	low	**high**
One-time source test to measure Cr6 emissions when making products containing Cr3 or Cr6	$60,000	$65,000

Assume 16 hr test runs. May be able to run concurrently with grain loading test, reducing cost. $10-15k if test can be done in 1-3 hr runs. If 16hr runs, $65k. If 4-day runs, $100k.

Modeling Costs

One-time modeling to find max production rate that results in acceptable source impact level		
AERSCREEN model only	$10,000	-
AERSCREEN followed by AERMOD model	-	$30,000

Total Costs

If 0 additional baghouses installed

One-time costs	$70,000	$100,000
Annual costs	$0	$0

If 2 additional baghouses installed

One-time costs	$598,000	$990,000
Annual costs	$54,000	$174,000

DEQ Art Glass Permanent Rule
Fiscal Impact Estimate for proposed rule- Uroboros Glass Studios, Inc.

Uroboros - Tier 2			
Requirements summary	Install control device on all furnaces using glassmaking HAPs. If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits		
	Cost Estimate		
	low	**high**	
Permitting costs			
NESHAP 6S applies?	Y		
Needs Title V permit because of 6S?	Y		
Cost of Title V application (including DEQ fees + consultant to prepare)	$15,000	$55,000	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Annual DEQ Title V permit costs	$8,500	$8,500	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Incremental extra cost of Title V application due to art glass rule	$0	$3,000	Assume preparing the permit application would cost 0% to 5% more because of the incremental addition of the proposed rules. (Rounded to the nearest thousand.)
Incremental extra cost of Title V annual permit fees due to art glass rule	$0	$0	The proposed rules would not increase the annual permit fees if the facility would have a Title V anyway.
Number of Control Devices			
# of additional baghouses installed, over and above what would have been installed due to NESHAP 6S alone	0	1	This is uncertain because changes to comply with NESHAP 6S are happening at the same time as efforts to comply with this rule.
Cost Per Control Device			
Install baghouse	$355,000	$610,000	
Install baghouse leak detection system or HEPA afterfilter	$10,000	$30,000	
One-time 'grain loading' source test to demonstrate baghouse is working	Included in source testing cost below		Assume length of run depends on detection limits, does not have to be entire production run.
Annual operation	$15,000	$70,000	Electricity, bag replacement etc
Annual cost to monitor and report on baghouse to DEQ	$12,000	$17,000	
Total one-time costs per baghouse	$365,000	$640,000	
Total annual costs per baghouse	$27,000	$87,000	
Source Testing Costs			
One-time source test to measure Cr6 emissions when making products containing Cr3 or Cr6	$56,000	$56,000	
Modeling Costs			
One-time modeling to find max production rate that results in acceptable source impact level			

Uroboros - Tier 2		
Requirements summary	Install control device on all furnaces using glassmaking HAPs. If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits	
	Cost Estimate	
	low	**high**
AERSCREEN model only	$10,000	-
AERSCREEN followed by AERMOD model	-	$30,000

Total Costs

If 0 additional baghouses installed

One-time costs	$66,000	$89,000
Annual costs	$0	$0

If 1 additional baghouse installed

One-time costs	$431,000	$729,000
Annual costs	$27,000	$87,000

DEQ Art Glass Permanent Rule

Fiscal Impact Estimate for proposed rule- Tier 1 CAGM

Tier 1 (Northstar, Trautman and Glass Alchemy)						
Requirements summary	Do 1 of these at all furnaces: Install control device, OR source test & modeling to show impact below limits, OR request permit condition to not use metal HAPs					
	Cost Estimate					
	If installing control device		**If doing source test and modeling only**		**If taking permit condition to stop using metal HAPs**	
	low	high	low	high	low	high
Permitting costs						
NESHAP 6S applies?	N		N		N	
Rule would require facility to get new permit	Yes, ACDP		Yes, ACDP		Yes, ACDP	
Application Fee	$7,200	$7,200	$7,200	$7,200	$7,200	$7,200
Consultant to prepare application	-	-	-	-	-	-
Annual Permit Fee (applies at time of application and each year after)	$4,608	$4,608	$4,608	$4,608	$4,608	$4,608
Control Device Costs						
Install baghouse	$250,000	$400,000	-	-	-	-
Install baghouse leak detection system or HEPA afterfilter	Optional, can do this instead of grain loading test					
Annual operation (electricity, bag replacement, etc)	$15,000	$70,000	-	-	-	-
Reporting Costs						
Annual cost to monitor and report on baghouse to DEQ	$12,000	$17,000	-	-	-	-
Source Testing Costs						
One-time source test to measure metal emissions including total Cr. (Total Cr can be used as a proxy for Cr6)	-	-	$15,000	$25,000	-	-
One-time source test to measure Cr6 emissions when making products containing Cr3 (optional)	If Tier 1 and using control device, don't have to test for Cr6		$0	$65,000	-	-
One-time 'grain loading' source test to demonstrate baghouse is working	$4,000	$15,000	-	-	-	-
Modeling Costs						
One-time modeling to find max production rate that results in acceptable source impact level						
AERSCREEN model only	-	-	$10,000	-	-	-
AERSCREEN followed by AERMOD model	-	-	-	$30,000	-	-
Cost of reduced production						
Stopping production of materials containing Cr6 (required to take source test + modeling exemption)	-	-	unknown	unknown	About 1/2 of products contain metal HAPs. There may not be workable substitute formulations. Facilities may choose to phase out one or a few metal HAPs but are likely to choose source test & modeling or installation of a control device.	
Reduced production if source testing shows it's needed to meet receptor conc limits	-	-	unknown	unknown		
Total Costs						
One-time costs	$261,200	$422,200	$32,200	$127,200	$7,200	$7,200

Annual costs	$31,608	$91,608	$4,608	$4,608	50% of facility profit (?)	
One-time costs (rounded)	$261,000	$422,000	$32,000	$127,000	$7,000	$7,000
Annual costs (rounded)	$32,000	$92,000	$5,000	$5,000	50% of facility profit (?)	

Redline of prior proposed temporary rules

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION 244

OREGON FEDERAL AND STATE HAZARDOUS AIR POLLUTANT PROGRAM

General Provisions for Stationary Sources

340-244-0010

Policy and Purpose

The Environmental Quality Commission finds that certain air contaminants for which there are no ambient air quality standards may cause or contribute to an identifiable and significant increase in mortality or to an increase in serious irreversible or incapacitating reversible illness or to irreversible ecological damage, and are therefore considered to be hazardous air pollutants. It ~~shall be~~is the policy of the Commission that no person may cause, allow, or permit emissions into the ambient air of any hazardous substance in such quantity, concentration, or duration determined by the Commission to be injurious to public health or the environment. The purpose of this Division is to establish emissions limitations on sources of these air contaminants. In order to reduce the release of these hazardous air pollutants and protect public health and the environment, it is the intent of the Commission to adopt by rule within this Division the source category specific requirements that are promulgated by the EPA, and state standards to reduce the release of these hazardous air pollutants. Furthermore, it is hereby declared the policy of the Commission that the standards contained in this Division are considered minimum standards, and as technology advances, protection of public health and the environment warrants, more stringent standards may be adopted and applied.

Stat. Auth.: ORS 468.020 & 468A.310
Stats. Implemented: ORS 468A.025
Hist.: DEQ 13-1993, f. & cert. ef. 9-24-93; DEQ 14-1999, f. & cert. ef. 10-14-99, Renumbered from 340-032-0100; DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

Colored Art Glass Manufacturing Facility Rules

340-244-9000

Applicability and Jurisdiction

Notwithstanding OAR 340 Division 246, OAR 340-244-9000 through 9090 apply to all facilities in the state of Oregon~~located within the Portland Air Quality Maintenance Area~~ that:

(1)~~(a)~~ Manufacture ~~colored~~ glass from raw materials, or a combination of raw materials and cullet, for:

(a) ~~u~~Use in art, architecture, interior design and other similar decorative applications, or

(b) ~~Manufacture colored glass products from raw materials, or a combination of raw materials and cullet, for u~~Use by ~~colored~~ glass manufacturers for use in art, architecture, interior design and other similar decorative applications; and

(2) Manufacture ~~10~~ 5 tons per year or more of ~~colored~~ glass using raw materials that contain ~~any of the following metal~~ glassmaking HAPs~~: arsenic, cadmium, chromium, lead, manganese and nickel~~.

(3) Subject to the requirements in this division and OAR 340-200-0010(3), LRAPA is designated by the EQC to implement OAR 340-244-9000 through 9090 within its area of jurisdiction.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9010

Definitions

The definitions in OAR 340-200-0020 and this rule apply to OAR 340-244-9000 through 9090. If the same term is defined in this rule and 340-200-0020, the definition in this rule applies to this division.

(1) "Colored Art Glass Manufacturer" or "CAGM" means a facility that meets the applicability requirements in OAR 340-244-9000 and refers to the owner or operator of such a facility when the context requires.

(2) "Chromium III" means chromium in the +3 oxidation state, also known as trivalent chromium.

(3) "Chromium VI" means chromium in the +6 oxidation state, also known as hexavalent chromium.

(4) "Chromium", without a following roman numeral, means total chromium.

(5) "Controlled" means the ~~glass-making~~glassmaking furnace emissions are treated by an emission control device approved by DEQ.

(6) "Cullet" means ~~recycled~~ pieces of finished glass that, when ~~is~~ mixed with raw materials and charged to a ~~glass-making~~glassmaking furnace, is used to produce new glass. Cullet does not include frit as defined in subsection (9)(a)~~glass materials that contain metal HAPs in amounts that materially affect the color of the finished product and that are used as coloring agents; such materials are considered raw materials~~. Cullet is not considered to be a raw material.

(7) "Emission control device" means control device as defined in OAR 340 Division 200.

(8) "Finished glass" means the final glass product that results from melting and refining materials in a glassmaking furnace. Finished glass that has been remelted without the addition of raw materials is still finished glass.

(9) "Frit" means both of the following:

(a) Granules of glassified or vitrified material that is not made from finished glass, and which contains a higher proportion of glassmaking HAP than would be found in a finished glass. The purpose of such material includes, but is not limited to, making powdered glassmaking HAPs safer to handle by combining them with silica or other oxides.

(b) Granules of crushed finished glass.

(10~~8~~) "~~Glass-making~~Glassmaking furnace" means a refractory-lined vessel in which raw materials are charged and

melted at high temperature to produce molten glass.

(11) "Metal Glassmaking HAP" means arsenic, cadmium, chromium, lead, manganese, or nickel or selenium in any form, such as the pure metalchemical element, in compounds or mixed with other materials.

(12) "Raw material" means:

(a) Substances that are intentionally added to a glass manufacturing batch and melted in a glass-makingglassmaking furnace to produce glass, including but not limited to:

(A) Minerals, such as silica sand, limestone, and dolomite;

(B) Inorganic chemical compounds, such as soda ash (sodium carbonate), salt cake (sodium sulfate), and potash (potassium carbonate);

(C) Metal oOxides and other metal-based compounds of chemical elements, such as lead oxide, chromium oxide, and sodium antimonate; and

(D) Metal oOres of chemical elements, such as chromite and pyrolusite.

(b) Metals Glassmaking HAPs that are naturally-occurring trace constituents or contaminants of other substances are not considered to be raw materials.

(c) Raw material includes glass materials that contain metal glassmaking HAPs in amounts that materially affect the color properties of the finished product, such as its color, texture or bubble content and that are used as coloring agents. Such materials may be powdered, frit, or in some other form. For the purpose of this definition, frit as described in subsection (9)(a) is a raw material, but frit as described in subsection (9)(b) is not a raw material.

(d) Cullet and material that is recovered from a glass-makingglassmaking furnace control device for recycling into the glass formulation are not considered to be raw materials.

(13) "Tier 1 CAGM" means a CAGM that produces at least 510 tons per year or more of colored art glass, but not moreless than 100 tons per year, of glass using raw materials that contain glassmaking HAPsand produces colored art glass in glass-makingglassmaking furnaces that are only electrically heated.

(14) "Tier 2 CAGM" means:

(a) A CAGM that produces 10 5 tons per year or more of colored art glass using raw materials that contain glassmaking HAPs in glassmaking furnaces, at least one of which is fuel-heated or combination fuel- and electrically-heated glass-making furnaces; or

(b) Produces 100 tons per year or more of colored art glass using raw materials that contain glassmaking HAPs in any type of glass-makingglassmaking furnace.

(15) "Uncontrolled" means the glass-makingglassmaking furnace emissions are not treated by an emission control device approved by DEQ.

(16) "Week" means Sunday through Saturday.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9015

Compliance Extensions

A Tier 1 CAGM may request, and DEQ may grant, one or more extensions, not to exceed a total of 12 months, to the compliance date for installation of emission control systems if the CAGM cannot meet the compliance date for reasons beyond its reasonable control. A Tier 1 CAGM that has been granted an extension:

(1) Is allowed to operate without the emission control device required by OAR 340-224-9050 until the required emission control device is installed and operational, or the extension expires, whichever is earlier; and

(2) Must comply with OAR 340-244-9020 and 9060(1) as applicable.

340-244-9020

Permit Required

(1) Not later than ~~September~~ December 1, 2016, if located within the Portland AQMA, and not later than April 1, 2017, if located outside the Portland AQMA, all CAGMs not otherwise subject to a permitting requirement must apply for a permit under OAR 340-216-8010 Table 1, Part B, category #84.

(2) A CAGM that applies for a permit on or before the required date is not in violation of OAR 340-216-0020(3).

(3) CAGMs constructed after September 1, 2016 must obtain a permit prior to construction.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9030

Requirements That Apply To Tier 2 CAGMs

(1) ~~Effective September 1, 2016,~~ Tier 2 CAGMs located within the Portland AQMA may not use raw materials containing arsenic, cadmium, chromium, lead, manganese or nickel ~~any metal HAPs~~ except in ~~glass-making~~glassmaking furnaces that use an emission control device that meets the requirements of OAR 340-244-9070.

(2) Effective January 1, 2017, Tier 2 CAGMs located within the Portland AQMA may not use raw materials containing selenium except in glassmaking furnaces that use an emission control device that meets the requirements of OAR 340-244-9070.

(3) Tier 2 CAGMs located outside the Portland AQMA may not use raw materials containing arsenic, cadmium or chromium VI except in glassmaking furnaces that use an emission control device that meets the requirements of OAR 340-244-9070.

(4) Effective April 1, 2017, Tier 2 CAGMs located outside the Portland AQMA may not use raw materials containing chromium, lead, manganese, nickel or selenium except in glassmaking furnaces that use an emission control device that meets the requirements of OAR 340-244-9070.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9040

Operating Restrictions That Apply To Tier 2 CAGMs

~~(1) Tier 2 CAGMs may not use raw materials containing arsenic, cadmium or chromium VI except in glass-making furnaces that are controlled by an emission control device approved by DEQ.~~

~~(2) A Tier 2 CAGM may use raw materials containing chromium III in a glass-making furnace (controlled or uncontrolled) if DEQ has established annual and daily maximum allowable chromium III usage rates for the glass-making furnace or group of glass-making furnaces that will prevent the source impact from exceeding an annual acceptable source impact level of 0.08 nanograms per cubic meter of chromium VI and a daily acceptable source impact level of 36 nanograms per cubic meter of chromium VI.~~

(1) Subject to the limitations in OAR 340-244-9030, and except as allowed in section (2), Tier 2 CAGMs may use raw materials containing chromium in glassmaking furnaces only if DEQ has established annual and daily maximum allowable chromium usage rates that will prevent the source from exceeding the chromium VI source impact levels described in paragraph (3)(b)(C) of this rule.

(2) Notwithstanding section (1) and OAR 340-244-9030(1), (3) and (4), raw materials containing chromium may be used in glassmaking furnaces for the purpose of conducting the emissions testing under sections (3) or (4). Such use must be limited to only the amounts needed to perform the testing.

(3) After DEQ establishes ~~the~~ any maximum allowable chromium III or chromium VI usage rate~~s~~ for a CAGM's ~~glass-making~~glassmaking furnace or ~~glass-making~~glassmaking furnaces, the CAGM must comply with the rates DEQ establishes. For the purpose of establishing any maximum allowable usage rate for chromium III or chromium VI ~~usage rates~~, the following are required:

(a) A source test must be performed as specified below:

(A) Test using DEQ--approved protocols and methods for total chromium, or total chromium and chromium VI, ~~and particulate matter using DEQ Method 5 or a DEQ-approved equivalent method~~ and submit a source test plan detailing the approach to DEQ for approval;

(B) Test ~~for chromium, chromium VI and particulate matter~~ at the outlet of an uncontrolled ~~glass-making~~glassmaking furnace, or at the outlet of the emission control device on a controlled glassmaking furnace; ~~or test for chromium, chromium VI and particulate matter at the inlet of an emission control device and for particulate matter at the outlet of the emission control device;~~

(C) Test while making a glass that DEQ agrees is made under the most oxidizing combustion conditions and that contains a high percentage of the type of chromium ~~III~~ for which a usage rate is being established, as compared to other formulas used by the CAGM; ~~and~~

(D) Keep records of the amount of chromium, by type, ~~III~~ used in the formulations that are produced during the source test runs, as well as other operational parameters identified in the source test plan~~.~~; and

(E) If the testing under this section is done for total chromium only, the CAGM must assume that all chromium emitted is in the form of chromium VI.

(b) The Tier 2 CAGM must perform dispersion modeling, using models and protocols approved by DEQ, to determine the annual average and daily maximum ambient concentrations that result from the Tier 2 CAGM's air emissions as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use the maximum chromium VI emission rate;

(C) Establish a maximum chromium ~~III~~ usage rate so that the source impact will not exceed either of the following:

(i) An annual acceptable source impact level for chromium VI concentration of 0.08 nanograms per cubic meter at the nearest sensitive receptor approved by DEQ. Sensitive receptors include, but are not limited to: residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities; and

(ii) A daily acceptable source impact level for chromium VI concentration of 5~~36~~ nanograms per cubic meter at any off-site modeled receptor.

(c) Each Tier 2 CAGM must keep daily records of all glass formulations produced and, until such time as the Tier 2 CAGM has installed all emission control devices required under OAR 340-244-9030, provide to DEQ a weekly report of the daily amount of each glassmaking~~metal~~ HAP used.

(4) Tier 2 CAGMs may apply source testing protocols equivalent to those in subsection (3)(a) to the use of chromium VI in a ~~glass-making~~glassmaking furnace to establish maximum usage rates for chromium VI in controlled ~~glass-making~~glassmaking furnaces that will prevent the source impact from exceeding an annual acceptable source impact level of 0.08 nanograms per cubic meter and a daily acceptable source impact level of 5~~36~~ nanograms per cubic meter.

(5) Tier 2 CAGMs are not restricted on the raw materials that may be used in ~~glass-making~~glassmaking furnaces that are controlled by an emission control device approved by DEQ, except that the use of raw materials containing chromium ~~III and chromium VI~~ will be subject to maximum usage rates ~~determined~~ established by DEQ.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9050

Requirements That Apply To Tier 1 CAGMs

(1) No later than October 1, 2016, if located within the Portland AQMA, and April 1, 2017, if located outside the Portland AQMA, each Tier 1 CAGM must comply with subsection (a), (b) or (c) for each ~~glass-making~~glassmaking furnace or group of ~~glass-making~~glassmaking furnaces that use raw material containing arsenic, cadmium, chromium, lead, manganese or nickel:

(a) Install an emission control device ~~to control a glass-making furnace or group of glass-making furnaces that uses raw material containing metal HAPs, and~~ that meets the emission control device requirements in OAR 340-244-9070;

(b) Demonstrate that the ~~glass-making~~glassmaking furnace or group of ~~glass-making~~glassmaking furnaces meets the exemption in section (3~~2~~) for arsenic, cadmium, chromium, lead, manganese or nickel; or

(c) Request a permit condition that prohibits the use of arsenic, cadmium, chromium, lead, manganese or nickel~~metal HAPs~~ in the ~~glass-making~~glassmaking furnace or group of ~~glass-making~~glassmaking furnaces, and comply with that condition.

(2) No later than January 1, 2017, if located within the Portland AQMA, and April 1, 2017, if located outside the Portland AQMA, each Tier 1 CAGM must comply with subsection (a), (b) or (c) for each glassmaking furnace or group of glassmaking furnaces that use raw material containing selenium:

(a) Install an emission control device that meets the emission control device requirements in OAR 340-244-9070;

(b) Demonstrate that the glassmaking furnace or group of glassmaking furnaces meets the exemption in section (3) for selenium; or

(c) Request a permit condition that prohibits the use of selenium in the glassmaking furnace or group of glassmaking furnaces, and comply with that condition.

(3~~2~~) A Tier 1 CAGM is exempt from the requirement to install emission controls under subsections (1)(a) or (2)(a) on a ~~glass-making~~glassmaking furnace or group of ~~glass-making~~glassmaking furnaces if that CAGM meets the requirements of subsection (a) for each of the individual ~~metal~~ glassmaking HAPs listed in paragraphs (a)(A) through (a)(G~~F~~) below. This exemption is not allowed for a ~~glass-making~~glassmaking furnace or group of ~~glass-making~~glassmaking furnaces that use raw materials containing chromium VI.

(a) The CAGM shows through source testing and dispersion modeling if necessary, following the requirements of subsections (b) and (c), that the ~~metal~~ glassmaking HAP concentrations modeled at the nearest sensitive receptor do not exceed the applicable concentration listed in paragraphs (A) through (G~~F~~). For chromium VI resulting from the use of chromium III, the CAGM may source test for and model chromium VI, or may source test for and model total chromium in lieu of chromium VI, to demonstrate that the ambient concentration is below the concentration listed in paragraph (C). If the modeled total chromium ambient concentration exceeds the concentration listed in paragraph (C), then the CAGM may conduct an additional source test to measure chromium VI and model to show that the ambient concentration of chromium VI does not exceed the concentration listed in paragraph (C).

(A) Arsenic, 0.2 nanograms per cubic meter annual average;

(B) Cadmium, 0.6 nanograms per cubic meter annual average;

(C) Chromium VI, 0.08 nanograms per cubic meter annual average;

(D) Lead, 15 nanograms per cubic meter annual average;

(E) Manganese, 90 nanograms per cubic meter annual average;

(F) Nickel, 4 nanograms per cubic meter annual average;~~.~~

(G) Selenium, 710 nanograms per cubic meter 24 hour average.

(b) Source testing for the purpose of demonstrating the exemption in this section must be performed as follows:

(A) Test using DEQ--approved protocols and methods for each ~~metal~~ glassmaking HAP listed in paragraphs (a)(A) through (a)(G~~F~~) that the Tier 1 CAGM intends to use.

(B) Test for particulate matter using DEQ Method 5 or equivalent; HAPs~~metals~~ using EPA Method 29, CARB Method M-436 or an equivalent method approved by DEQ; and if the Tier 1 CAGM chooses, chromium VI using a method approved by DEQ.

(C) Submit a source test plan to DEQ for approval at least 30 days before the test date.

(D) For each ~~metal~~ glassmaking HAP to be tested for, test while making a glass formulation that DEQ agrees has the highest potential emissions of that ~~metal~~ glassmaking HAP. More than one source test may be required if a single glass formulation cannot meet this requirement for all ~~metal~~ glassmaking HAPs to be tested for.

(E) Keep records of the amount of each ~~metal~~ glassmaking HAP regulated under this rule used in the formulations that are produced during the source test runs, as well as other operational parameters identified in the source test plan.

(c) Dispersion modeling for the purpose of demonstrating the exemption in this section is not required for any glassmaking HAP ~~metal~~ that the source testing under subsection (b) shows is not greater than the applicable concentration listed in paragraphs (a)(A) through (a)(G~~F~~); otherwise, dispersion modeling must be performed as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use the EPA-approved model AERSCREEN or other EPA--approved model;

(C) Use the maximum emission rate for each ~~metal~~ glassmaking HAP to be modeled as determined by the source testing required by subsection (b); and

(D) Model the ambient concentration at the nearest sensitive receptor approved by DEQ. Sensitive receptors include, but are not limited to: residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9060

Operating Restrictions That Apply To Tier 1 CAGMs

(1) Tier 1 CAGMs may not use raw materials that contain chromium VI in any uncontrolled ~~glass-making~~glassmaking furnace.

(2) Tier 1 CAGMs are not restricted on the raw materials that may be used in ~~glass-making~~glassmaking furnaces that are controlled by an emission control device approved by DEQ.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9070

Emission Control Device Requirements

(1) ~~Each emission control device used to comply with this rule must meet 99.0 percent or more removal efficiency for particulate matter as measured by EPA Method 5 or an equivalent method approved by DEQ.~~CAGMs must comply with the requirements in subsection (a) or (b), as applicable, for each emission control device used to comply with this rule.

(a) Tier 1 CAGMs must comply with one of the requirements in paragraphs (A), (B) or (C):

(A) Conduct a source test as required under section (3) and demonstrate that the emission control device does not emit particulate matter in excess of 0.005 grains per dry standard cubic foot as measured by EPA Method 5 or an equivalent method approved by DEQ.

(B) If the emission control system is a fabric filter (baghouse), install a bag leak detection system that meets the requirements of section (4).

(C) If the emission control system is a fabric filter (baghouse), install an afterfilter that meets the requirements of section (5).

(b) Tier 2 CAGMs must:

(A) Conduct a source test as required under section (3) and demonstrate that the emission control device does not emit particulate matter in excess of 0.005 grains per dry standard cubic foot as measured by EPA Method 5 or an equivalent method approved by DEQ; and

(B) If a fabric filter (baghouse) is used, install either a bag leak detection system that meets the requirements of section (4) or an afterfilter that meets the requirements of section (5).

(2) Emission control device requirements:

(a) A CAGM must obtain DEQ approval of the design of all emission control devices before installation, as provided in this rule.

(b) A CAGM must submit a Notice of Intent to Construct as required by OAR 340-210-0205 through 340-210-0250 no later than 15 days before the date installation begins. If DEQ does not deny or approve the Notice of Intent to Construct within 10 days after receiving the Notice, the Notice will be deemed to be approved.

(c) Emission control devices may control emissions from more than one ~~glass-making~~glassmaking furnace.

(d) Each emission control device must be equipped with the following monitoring equipment:

(A) An inlet temperature monitoring device;

(B) A differential pressure monitoring device if the emission control device is a baghouse; and

(C) Any other monitoring device or devices specified in DEQ's approval of the Notice of Intent to Construct.

(e) Each emission control device must be equipped with inlet ducting that provides the following:

(A) Sufficient cooling of exhaust gases to no more than the maximum design inlet temperature under worst-case conditions; and

(B) Provision for inlet emissions testing, including sufficient duct diameter, sample ports, undisturbed flow conditions, and access for testing.

(f) Each emission control device must be equipped with outlet ducting that provides for outlet emissions testing, including sufficient duct diameter, sample ports, undisturbed flow conditions, and access for testing.

(g) After commencing operation of any emission control device, the CAGM must monitor the emission control device as required by OAR 340-244-9080.

(3~~h~~) If source testing is conducted under section (1), the~~A~~ CAGM must perform the following source testing on at least one emission control device. Source testing done under OAR 340-244-9040(3~~2~~)(a) may be used in whole or in part to comply with this requirement.

(a~~A~~) Within 60 days of commencing operation of the emission control devices, test control device ~~inlet and~~ outlet for particulate matter using DEQ Method 5 or equivalent method;

(b~~B~~) The emission control device to be tested must be approved by DEQ;

(c~~C~~) A source test plan must be submitted at least 30 days before conducting the source test; and

(d~~D~~) The source test plan must be approved by DEQ before conducting the source test.

(4) If a bag leak detection system is installed under section (1), the requirements for the bag leak detection system are:

(a) The bag leak detection system must be installed and operational as soon as possible but not more than 90 days after the baghouse becomes operational or 90 days after the effective date of the rule, whichever is later.

(b) Each bag leak detection system must meet the specifications and requirements in paragraphs (A) through (H).

(A) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.

(B) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator must continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

(C) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (D), and the alarm must be located such that it can be heard by the appropriate plant personnel.

(D) In the initial adjustment of the bag leak detection system, the CAGM must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points,

and the alarm delay time.

(E) Following initial adjustment, the CAGM may not adjust the averaging period, alarm set point, or alarm delay time without approval from DEQ except as provided in paragraph (F).

(F) Once per quarter, the CAGM may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by OAR 340-224-9080(4).

(G) The CAGM must install the bag leak detection sensor downstream of the fabric filter.

(H) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(5) If an afterfilter is installed under section (1), the requirements for the afterfilter are:

(a) The afterfilter must be installed and operational as soon as possible but not more than 120 days after the baghouse becomes operational or 120 days after the effective date of the rule, whichever is later;

(b) The afterfilter must filter the entire exhaust flow from the fabric filter (baghouse); and

(c) The afterfilter must be equipped with:

(A) HEPA filters that have a Minimum Efficiency Reporting Value of 17 (MERV 17) or higher per American National Standards Institute (ANSI) Standard 52.2; and

(B) A differential pressure monitoring device.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16; DEQ 6-2016(Temp), f. & cert. ef. 5-6-16 thru 10-17-16

340-244-9080

Emission Control Device Monitoring

(1) Each Tier 1 CAGM must perform the following monitoring on each emission control device it uses to comply with this rule:

(a) At least once each week, observe and record the inlet temperature and the fabric filter (baghouse) differential pressure and afterfilter differential pressure (as~~if~~ applicable); and

(b) At least once every 12 months:

(A) Inspect the ductwork and emission control device housing for leakage;

(B) Inspect the interior of the emission control device for structural integrity and, if a fabric filter (baghouse) is used, to determine the condition of the fabric filter; and

(C) Record the date, time and results of the inspection.

(2) Each Tier 2 CAGM must perform the following monitoring on each emission control device used to comply with this rule:

(a) At least once each day, observe and record the inlet temperature and the fabric filter (baghouse) differential pressure and afterfilter differential pressure (as~~if~~ applicable); and

(b) At least once every 12 months:

(A) Inspect the ductwork and emission control device housing for leakage;

(B) Inspect the interior of the emission control device for structural integrity and, and if a fabric filter (baghouse) is used, to determine the condition of the fabric filter; and

(C) Record the date, time and results of the inspection.

(3) CAGMs must observe and record any parameters specified in a DEQ approval of the Notice of Intent to Construct applicable to a control device.

(4) If a bag leak detection system is used, the CAGM must develop and submit to DEQ for approval a site-specific monitoring plan for each bag leak detection system. The CAGM must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in subsections (a) through (f).

(a) Installation of the bag leak detection system;

(b) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(c) Operation of the bag leak detection system, including quality assurance procedures;

(d) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(e) How the bag leak detection system output will be recorded and stored; and

(f) Corrective action procedures as specified in section (5). In approving the site-specific monitoring plan, DEQ may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(5) For each bag leak detection system, the CAGM must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in subsection (4)(f), the CAGM must alleviate the cause of the alarm within 3 hours of the alarm by taking all necessary corrective actions. Corrective actions may include, but are not limited to the following:

(a) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;

(b) Sealing off defective bags or filter media;

(c) Replacing defective bags or filter media or otherwise repairing the control device;

(d) Sealing off a defective fabric filter compartment;

(e) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; and

(f) Shutting down the process producing the PM emissions.

(6) For each bag leak detection system, the CAGM must keep the following records:

(a) Records of the bag leak detection system output;

(b) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(c) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the alarm was alleviated within 3 hours of the alarm.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9090

Other ~~Metal~~ Glassmaking HAPs

(1) If DEQ determines that ambient concentrations of a ~~metal~~ glassmaking HAP in the area of a CAGM pose an unacceptable risk to human health and that emissions from a~~n uncontrolled glass-making~~glassmaking furnace at the CAGM are a contributing factor, then DEQ must set a limit on the CAGM's use of the ~~metal~~ glassmaking HAP of concern ~~in uncontrolled glass-making furnaces~~, by agreement or in a permit, to reduce such risk. DEQ must consult with the Oregon Health Authority when applying this rule.

(2) Exceeding the limits established under the authority of this rule is a violation of this rule.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16