**Key to Identifying Changed Text:**

Inserted text is Blue Underlined

Deleted text is ~~Red Strikethrough~~

Text deleted from one location - and moved to another location

**Note: DEQ is proposing to make the current, temporary colored art glass manufacturing facility rules (included below) permanent. Therefore, there is no deleted, inserted, or removed text.**

**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 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**

Notwithstanding OAR 340 Division 246, OAR 340-244-9000 through 9090 apply to colored art glass manufacturers (CAGMs) located within the Portland Air Quality Maintenance Area.

**340-244-9005**

**Compliance Dates**

CAGMs that are or become subject to these rules must comply with the applicable requirements of these rules by the compliance dates below, unless otherwise specified in these rules:

(1) For a Tier 1 CAGM that began operating on or before <insert the effective date of these rules>, the compliance date is <insert the effective date of these rules>.

(2) For a Tier 2 CAGM that began operating on or before <insert the effective date of these rules>, the compliance date is <insert the effective date of these rules>.

(3) For a CAGM that is not a Tier 1 or Tier 2 CAGM that began operating on or before <insert the effective date of these rules> and becomes a Tier 1 or Tier 2 CAGM after <insert the effective date of these rules>, the compliance date is the first day of the month following the month in which the CAGM became a Tier 1 or Tier 2 CAGM.

(4) For a Tier 1 CAGM that becomes a Tier 2 CAGM after <insert the effective date of these rules>, the compliance date is the first day of the month following the month in which the Tier 1 CAGM became a Tier 2 CAGM.

(5) A CAGM may request, and DEQ may grant, an extension of up to 90 days to the compliance dates in OAR 340-244-9030(1) or 9050(1) if both criteria in subsection (a) are met.

(a) Criteria for an extension:

(A) The CAGM began the installation process for an emission control device or devices for the purpose of complying with OAR 340-244-9030(1) or 9050(1) at least 30 days before the applicable compliance date. For the purpose of this paragraph, the installation process includes committing funds toward actually obtaining or installing an emission control device or devices, such as but not limited to, requesting any necessary construction permits or placing firm orders for necessary equipment or materials, but does not include designing or planning for an emission control device or devices.

(B) Installation is delayed for reasons beyond the CAGM’s reasonable control.

(b) To request a time extension, the CAGM must submit a request in writing to DEQ detailing why an extension is needed, how both criteria in subsection (a) are met and an estimated date by which installation can be completed.

(c) DEQ may require periodic progress reports from a CAGM that has been granted a time extension.

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 described in subsection (a) or (b) and refers to the owner or operator of such a facility when the context requires. For the purpose of this definition, the process of manufacturing glass involves mixing raw materials or a combination of raw materials and cullet and heating the mixture until the components of the mixture melt and form glass. Manufacturing glass does not include reheating one or more previously manufactured glasses to the point where the glass is soft enough for glassworking operations, such as kilnwork, lampwork, fusing or glassblowing.

(a) A facility that manufactures any amount of colored glass from raw materials, or a combination of raw materials and cullet, for use in art, architecture, interior design and other similar decorative applications, or

(b) A facility that manufactures any amount of colored glass products from raw materials, or a combination of raw materials and cullet, for use by colored glass manufacturers for use in art, architecture, interior design and other similar decorative applications.

(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 chromium in any oxidation state.

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

(6) “Cullet” means recycled glass that is mixed with raw materials and charged to a glass-making furnace to produce glass. Cullet does not include glass materials that meet the definition of 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) “Fuel-heated glass-making furnace” means a glass-making furnace that derives all or part of its heat input from the combustion of a fuel.

(9) “Glass-making furnace” means a refractory-lined vessel in which raw materials are charged and melted at high temperature to produce molten glass.

(10) “Glass-making HAP” or “glass-making HAPs” means any of the following HAPs in any form, such as the pure element, in compounds or mixed with other materials:arsenic, cadmium, chromium, cobalt, lead, manganese, nickel and selenium.

(11) “Raw material” means:

(a) Substances that are intentionally added to a glass manufacturing batch and melted in a glass-making 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) Oxides and other compounds of glass-making HAPs, such as lead oxide, chromium oxide, and sodium antimonate; and

(D) Ores of glass-making HAPs, such as chromite and pyrolusite.

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

(c) Raw material includes materials that contain glass-making HAPs in amounts that materially affect the color or other properties of the finished product such as color or bubbles. Such materials are typically in powder form, but may also be in a glassified or vitrified form. For example, one pound of cadmium sulfide may be used in a glass formulation for the purpose of achieving a particular color throughout the final glass product. The pound of cadmium sulfide may be added in powder form, or in a glassified or vitrified form; both of these are raw materials.

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

(12) “Tier 1 CAGM” means a CAGM that produces colored art glass, in glass-making furnaces that are only electrically heated, at the rate of 5 tons or more but less than 100 tons in any 12-consecutive month period.

(12) “Tier 1 CAGM” means a CAGM that produces colored art glass, in glass-making furnaces that are only electrically heated, at the rate of 825 pounds or more in any calendar month but less than 16,650 pounds in any calendar month.

(13) “Tier 2 CAGM” means:

(a) A CAGM that produces colored art glass, in fuel-heated or a combination of fuel- and electrically-heated glass-making furnaces, at the rate of 5 tons or more in any 12-consecutive month period; or

(b) Produces colored art glass, in any type of glass-making furnaces, at the rate of 100 tons or more in any 12-consecutive month period.

(13) “Tier 2 CAGM” means:

(a) A CAGM that produces colored art glass, in fuel-heated or a combination of fuel- and electrically-heated glass-making furnaces, at the rate of 825 pounds or more in any calendar month; or

(b) Produces colored art glass, in any type of glass-making furnaces, at the rate of 16,650 pounds or more in any calendar month.

(14) “Total chromium” means chromium in all oxidation states.

(15) “Uncontrolled” means the glass-making 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

**340-244-9020**

**Permit Required**

(1) Under OAR 340-244-9020 in the temporary rules adopted on <insert effective date of temp rules here>, all existing Tier 1 and Tier 2 CAGMs not otherwise subject to a permitting requirement were required to apply for a permit under OAR 340-216-8010 Table 1, Part B, category #84 not later than September 1, 2016.

(2) Insofar as a Tier 1 or Tier 2 CAGM that began operating before the effective date of these rules was not otherwise required to obtain a permit under OAR Chapter 340, Division 216, a CAGM that is subject to section (1) and has applied for a permit by the date specified:

(a) May continue to operate;

(b) Must comply with these rules as applicable; and

(c) Is not in violation of OAR 340-216-0020(3).

(3) Tier 1 and Tier 2 CAGMs that begin construction after September 1, 2016 must obtain a permit under OAR 340-216-8010 Table 1, Part B, category #84 prior to beginning 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) On and after the applicable compliance date in OAR 340-944-9005, Tier 2 CAGMs may not use raw materials containing any of the following glass-making HAPs in uncontrolled glass-making furnaces: arsenic, cadmium, chromium and lead.

(2) On and after February 1, 2018, Tier 2 CAGMs may not use raw materials containing any of the following glass-making HAPs in uncontrolled glass-making furnaces: arsenic, cadmium, chromium, cobalt, lead, manganese, nickel and selenium.

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**

**Chromium Usage Restrictions That Apply To Tier 2 CAGMs**

(1) On and after the compliance date, a Tier 2 CAGM may only use raw materials containing chromium in glass-making furnaces that are controlled by an emission control device approved by DEQ, and only after DEQ has approved annual and daily maximum chromium usage rates that will prevent the source impacts from exceeding 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 nanograms per cubic meter at any off-site modeled receptor.

(2) A Tier 2 CAGM may request that DEQ approve annual and daily maximum allowable usage rates for total chromium, chromium III, chromium VI or any combination of these. The requirements for establishing maximum allowable usage rates are:

(a) Determine one or more chromium VI emission rates using one or more of the procedures specified in subparagraphs (A) through (C).

(A) For use of chromium in any oxidation state, determine the total chromium emission rate using the source test requirements in section (4) and assume that only chromium VI is emitted when chromium in any oxidation state is used.

(B) For use of chromium III, determine a specific chromium VI emission rate when using chromium III using the source test requirements in section (5).

(C) For use of chromium VI, determine a specific chromium VI emission rate when using chromium VI using the source test requirements in section (5).(b) Perform the dispersion modeling in section (6) to establish annual and daily maximum usage rates based on the modeled source impacts. The modeled source impacts must not exceed the acceptable source impact levels set forth in section (1).

(c) If multiple chromium VI emission rates are determined under subsection (a), the maximum usage rates may vary depending on the oxidation states of the chromium used at any particular time, provided the source impacts do not exceed the acceptable source impact levels set forth in section (1).

(3) After DEQ establishes the maximum allowable chromium usage rates for a CAGM’s glass-making furnace or glass-making furnaces, the CAGM must comply with the rates DEQ establishes.

(4) A source test required under paragraph (2)(a)(A) must be performed as specified below:

(A) Test using EPA Method 29 or an equivalent DEQ-approved method and submit a source test plan detailing the approach to DEQ for approval;

(B) Test at the outlet of the emission control device on a controlled glass-making furnace;

(C) Test while making a glass that contains a high percentage of chromium as compared to other formulas used by the CAGM; and

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

(5) A source test required under paragraph (2)(a)(B) or (2)(a)(C) must be performed as specified below:

(A) Test using DEQ-approved protocols and methods for total chromium and chromium VI using a DEQ-approved testmethod and submit a source test plan detailing the approach to DEQ for approval;

(B) Test for chromium and chromium VI at the outlet of the emission control device on a controlled glass-making furnace;

(C) Test while making a glass that DEQ agrees is made under the most oxidizing combustion conditions and that contains a high percentage of chromium III as compared to other formulas used by the CAGM; and

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

(6) Dispersion modeling to determine maximum annual and daily chromium usage rates must be performed as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use models and protocols approved by DEQ;

(C) Use the chromium VI emission rate or rates determined under sections (4) or (5);

(D) Establish maximum chromium usage rates so that the source impact will not exceed either of the acceptable source impact levels specified in section (1).

(7) 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 glass-making HAP used.

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) On and after October 1, 2016 or the applicable compliance date under OAR 340-244-9005, whichever is later, Tier 1 CAGMs may not use raw materials containing any of the following glass-making HAPs in uncontrolled glass-making furnaces: arsenic, cadmium, chromium, lead, manganese, and nickel.

(2) On and after February 1, 2018, Tier 1 CAGMs may not use raw materials containing any of the following glass-making HAPs in uncontrolled glass-making furnaces: arsenic, cadmium, chromium, cobalt, lead, manganese, nickel and selenium.

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 one of the following requirements:

(a) The emission control device may not emit particulate matter in excess of 0.005 grains per dry standard cubic foot. Compliance with this emission standard is based on EPA Method 5 or an equivalent method approved by DEQ, and must be demonstrated using the source test procedure in section (3); or

(b) If the emission control system is a fabric filter (baghouse), it must be equipped with a bag leak detection system that meets the requirements of section (4).

(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 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 fabric filter (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) If testing is performed for the purpose of complying with subsection (1), the CAGM must perform the following source testing on at least one emission control device.

(a) Within 90 days of commencing operation of the emission control devices, test the control outlet for particulate matter using DEQ Method 5 or an equivalent method approved by DEQ;

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

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

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

(4) The requirements for bag leak detection systems are:

(a) If a bag leak detection system is installed on a baghouse for the purpose of complying with subsection (1), it must be installed and operational not more than 90 days after the baghouse becomes operational.

(b) A bag leak detection system that is not installed for the purpose of complying with subsection (1) may be installed at any time, but once installed is subject to the requirements of this section.

(c) needs to filled in if this option is used…

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 differential pressure (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 differential pressure (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) reserved for BLDS monitoring

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 Glass-making HAPs**

(1) If DEQ determines that ambient concentrations of a glass-making HAP in the area of a CAGM pose an unacceptable risk to human health and that emissions from an uncontrolled glass-making furnace at the CAGM are a contributing factor, then DEQ must set a limit on the CAGM’s use of the glass-making 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