

The glass melting furnace is listed in SIP Form 2.00 as GF02.

2.2.2.1 Furnace Ceramic Filter Air Pollution Control Device

The furnace exhaust will pass through an add-on air pollution control device. The air pollution control device will be a candle style ceramic filter for particulate matter. The ceramic material will be impregnated with catalyst material for removing acid gases such as NO_x, sulfur dioxide (SO₂), hydrogen chloride (HCl) and hydrogen fluoride (HF). The inlet temperature to the air pollution control device is anticipated to vary between 300 and 400°C (570 and 750 °F). Technical descriptions of the furnace control technologies for SO₂ and other acid gases are discussed below. This refers to dry sorbent injection and ammonia (or urea) injection. This air pollution control device system is listed as CF02 in SIP Form 3.00.

At this point in project design, an Electrostatic Precipitator (ESP) is still under consideration for use as for PM air pollution control. The ESP is further discussed in Section 2.2.2.2.

In addition to PM abatement, the system will have a sorbent injection system that spray dry alkaline media into the duct upstream of the ceramic filter to control furnace SO₂ air emissions. The dry media will adhere to the inside surface of the filter and form an alkaline layer that the furnace exhaust gases will have to penetrate as they pass through the filter. The contact of the media with the gases neutralizes the SO₂ including other acid gases such as HCl and HF.

Ammonia injection will be for selective catalyst reduction of NO_x. The catalyst imbedded in the ceramic filter. The ammonia in the presence of the catalyst chemically reduces NO_x to nitrogen gas and oxygen gas.

Air Pollution Control Devices Continuous Compliance

Particulate Matter

Daily pressure drop measurement can be made across a single point location upstream of the ceramic filters and another point downstream of the filters. Pressure drop shall be recorded continuously. The continuous monitoring system shall be maintained and calibrated periodically.

Sulfur Dioxide

An operating limit for SO₂ abatement can be established during an initial performance test in where the sorbent media setting can be recorded during the performance test. The sorbent media setting will establish the operating limit for continuous compliance purposes. Daily checks on the operating setting will be recorded.

Nitrogen Oxides

In anticipation of the applicability of the Title V Compliance Assurance Monitoring in 40 CFR 64, Arglass is proposing the use of a Continuous Emission Monitoring System for NO_x emissions. Anticipated monitoring will be the outlet NO_x concentration, NH₃/NO_x ratio, catalyst bed inlet temperature, and the catalyst activity.

2.2.2.2 Alternative Furnace Electrostatic Precipitator Air Pollution Control Device

PM control is still under evaluation although the primary choice is the ceramic filter. An alternative to the ceramic filter is under consideration and that is a dry ESP. In this case a Selective Catalyst Reduction (SCR) unit will be used for NO_x control with ammonia injected upstream of the SCR unit. An alkaline dry sorbent injection will also be injected into the duct to assist in neutralizing the acid gases, primarily SO₂, HCl and HF. This air pollution control device system is listed as ESP2 in SIP Form 3.00.