

Questions & Answers

1. What is the intended purpose and required operating temperature or cooling load for the 2.5 kW chiller on System 1 and the 10 kW chiller on System 2?

The chillers/coolers are intended to keep the interiors of the boxes at or near room temperature if the boxes contain a significant source of heat (such as a kiln, a block of material internally heated to 1173 K, or the hot well in System 2).

2. What types of solvents and approximate quantities are expected to be used inside each glovebox?

Exact solvents are not known, but the activities in the boxes are not expected to include large amounts of solvents. The main activities will involve liquid metals (sodium and potassium) and molten salts, as well as some ceramic production activities. Solvents would primarily be present as cleaning or carrier agents. Denatured alcohol and isopropanol are expected to be present on a fairly regular basis, but not in large quantities (a couple of laboratory squirt bottles)

3. Is the tube-furnace manufacturer/model or any additional drawing available for the required water-cooled flange, removable reactor, and pneumatic lift?

Tube furnace has not been selected beyond sizing. The reactor should consist of a sealed stainless tube of the required dimensions (~7" OD, 24" long) that can be surrounded by a tube furnace to provide a temperature up to 1123 K. This is basically a floor mounted hot well for heat treating or providing a reservoir of molten salt/molten metal (we will provide our own retorts). The water-cooled flange is to keep the floor of the box outside the reactor cool. The pneumatic lift is to raise or lower the tube furnace around the hot well.

4. System 1 calls out 6 gloves in the front, I assume this is two boxes bolted together? Are the two systems both 3 gloves, or one is a 4 glove and the other a 2 glove?

System 1 consists of two 3-port boxes.

5. Do you want QC windows for both of these modules for glovebox 1, or which box?

All box windows should be in a quick-change configuration.

6. What kinds of quick release window is needed, one held on by star knobs, or one held on by destaco clamps?

Star knobs or similar. The main requirement is that the windows can be removed and replaced for equipment installation/service, without requiring major work and/or service calls to restore the operating seal.

7. The pump wanted is a xds 15, and not a xds 10? This is not common, so I just wanted to make sure.

The specification is correct.

8. Box 2, is 10kw box cooling unit correct? If so, is this a chiller or a fan with refrigeration unit?

See response to Question 1, above.

9. Are more details available for the reactor? Is this just a stainless steel tube, or what does it consist of?

See response to Question 3, above.

10. Are more details available for the pneumatic tube furnace lift? Or details of the tube furnace that will be purchased and how you want it lifted?

See response to Question 3, above.

11. Are the regulators requested for the glovebox working gas? If not can you specify the pressure range needed. Also, do you need regeneration regulators?

Two of the regulators are for the working gas (argon). A regen gas regulator is also required (listed under Other/Common Items).

12. Is a front mounted LED light acceptable? Roof mounted can cause access issues and seems like there may be interference on the roof with the items requested that would cause possible shadowing.

Internally mounted lighting is part of the specification. This should be done in a way that minimizes glare/obstructions.

13. Could your team provide any technical documentation or drawings for the system configurations, specifically regarding the tube furnace, water-cooled flange, removable reactor, and pneumatic lift assembly? Having those details would be highly beneficial for our manufacturer to ensure full alignment with your requirements.

The tube furnace, water-cooled flange, removable reactor, and pneumatic lift comprise a hot well attached to the floor of Box 2. The hot well should consist of a removable stainless-steel tube/cavity of the required dimensions (~7" OD, 24" long) bolted to the floor of the glovebox that can be surrounded by a tube furnace located outside the box to provide a cavity temperature of up to 1123 K. The hot well is intended to support heat treating or maintaining a reservoir of molten salt/molten metal (we will provide our own retorts for the inside of the cavity). The water-cooled flange is to keep the floor of the box outside the reactor cool. The pneumatic lift is to raise or lower the tube furnace around the hot well. We will purchase the tube furnace separately.

We cannot provide specific technical drawing of the hot-well system, as we expect the design to be vendor specific.