UL and Explosion Proof Compliance

Type (status): C1D2 Group "D"
Applies to: Reactors lifting and non-lifting.

Definition: of C1D2
Class I, Division 2: One of the following three situations must exist in order for an area to be considered a Class I, Division 2 location:

1. Volatile flammable liquids or flammable gases are handled, processed or used, but the hazardous liquids, vapors or gases will normally be confined within closed containers or closed systems from which they can escape only in the event of accidental rupture or breakdown of such containers or systems, or as a result of abnormal operation of equipment.
2. Ignitable concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operations of the ventilating equipment.
3. Adjacent to a Class I, Division 1 location, and to which ignitable concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

<u>All parts are visibly marked with UL compliance codes unless otherwise noted.</u>

Electrical specifications:

- Lifting motor (24V DC, rated C1D2, ¼ HP)
- Stirring motor (120V AC, ¼ to 1 HP) C1D1 or air powered (non-electrical)
- Control panel (120/208-230V AC, NEMA 4x rated aluminum enclosure)*
- Current carrying wires in rigid metal conduit or flexible metal conduit only

Goldleaf Scientific

Non-Electrical Specifications:
List of all parts which can potentially accumulate or discharge static

- None known

List of all parts which can potentially accumulate heat above auto ignition temperatures

- Bearings (stirring)-wear and damage can cause breakage and frictional heat accumulation. Recommended to inspect bearings regularly, replace bearings annually. Do not operate if shaft cannot be turned by hand. An audible noise will clearly indicate malfunction. Motor has overload protection which may become engaged and prevent additional rotation.

Required Materials:

A low pressure supply of instrument air must be provided to the pressure and purge panel. Compressed air (free of solid or liquid contaminates, flammable gases, water, etc.) or inert gas is recommended.
Air powered stirrers require a large compressor. Make sure to size accordingly.

Disclaimer:

Goldleaf Scientific has made an effort to meet both Class 1 Group D, and UL electrical compliance, however Goldleaf Scientific does not guarantee certification of compliance, and only assists the end user to comply with their local jurisdiction requirements. All documentation should be considered unverified and all equipment should be considered compliant at the component level at best. For system level certification it is recommended to contact an approved testing agency and schedule a field labeling certification. Make sure assembly is complete before scheduling the labeling appointment. Contact your local inspector and confirm if necessary. Please note the cost for this service is approximately $2,000 USD per unit.

* Nema 4x enclosures can be used in C1D1 environments with pressure and purge system included.