The complete Trichlorosilane (TCS) delivery solution offered by Matheson Tri-Gas consists of a **Bulk Transfer Cabinet** (BTC) and an independent **Constant Vapor Bubbler** (CVB) System. The BTC contains two independent crossover panels for the bulk TCS supply which is delivered as liquid to each CVB. The CVB supplies an exact mix of TCS/Hydrogen to one or more Semiconductor Reactors located down stream.

**Bulk Transfer Cabinet**
The BTC has two cylinders. Each cylinder sits on a scale within the enclosed cabinet. The control processor monitors the level of fill of each cylinder by means of the scales.
The BTC can be sized for:
- Two (2) QE 100 lb cylinders
- Two (2) XE 550 lb cylinders
- One (1) XE 550 lb cylinder and 1 QE 100# cylinder

The BTC may be located several hundred feet away, and more than 45 feet below the CVB.

**Constant Vapor Bubbler**
The Bubbler is maintained at a constant pressure and is sized for a maximum discharge of 25 lpm. The temperature is maintained by a re-circulating thermal bath control system to ± .1 °C. and liquid level control is by Guide Wave Radar with an Ultrasonic overfill switch.

With the vapor pressure of TCS at 20°C and a head pressure of 22 psig, using Hydrogen carrier gas ~ 29% concentration by volume mix can be obtained. Either the head pressure or the temperature can be varied to change the concentration.

**BTC and CVB Cabinet Features**
- Door mounted touch screen for operator control
- Opening Panel for manual valve activation
- Filtered Air inlet to provide for exhaust sweeping the valve manifold
- Bottom containment area to prevent liquid escape
- Fire sensor
- PLC controller

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1 Actual delivery concentration is dependent upon the head pressure and temperature of the TCS in the bubbler.
2 Positive temperature changes may require heat tracing from the bubbler to down stream reactors