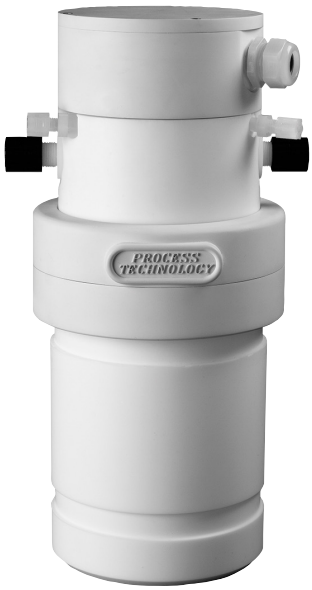
PROCESS TECHNOLOGY

BEST IN CLASS CHEMICAL HEATER

The TIH offers unmatched performance and reliability with the ability to heat a variety of chemicals up to 210°C. This heater is suitable for either single pass or recirculating applications. Delivers best-in-class performance over a wide range of flow and temperature requirements. The TIH is the most durable and long-lasting inline chemical heater available!



TIH

Temperature: Up to 210°C (410° F)	Pressure: 689 kPa (99.93 PSI) at 25°C (77° F), 296 kPa (42.93 PSI) at 180°C (356° F)
Watts: 1kW to 18kW	
200 to 600 volts, Single phase or 3 phase	CE, UL compliant, SEMI S2

Compatibility

YES	YES	YES	NO	NO
acids	water	bases	solvents	gases

FEATURES

Designed for Performance and Safety

- High-temperature configuration available to heat chemicals up to 210°C
- Multiple plumbing layouts available to better facilitate installation into a variety of tool configurations
- Grounded electric heating elements
- Redundant temperature sensors for safe operation Optional O-ring free construction minimizes contamination

Durable Constuction

- Patented purge design removes chemical permeation to extend service life
- All fluoropolymer-wetted surfaces withstand virtually any wet chemistries
- Heavy-wall PTFE chamber and heater sheath for high temperature/pressure applications

APPLICATIONS

- Semiconductor wafer cleaning
- Solar/Photovoltaio Wafer Cleaning
- Inline chemical heating

TIH In-line Chemical Heater

SPECIFICATIONS

Wattages	1kW to 18kW
Voltages	200 volts to 600 volts, single phase or 3 phase. 12kW & larger require 3 phase.
Temperature Range	Up to 210° C (410° F).
Pressure Range	689 kPa (99.93 PSI) at 25°C (77° F) 296 kPa (42.93 PSI) at 180°C (356° F)
Fluid Connections	6 to 25mm flared 12 to 25mm Super 300 Type Pillar® Other connections available, consult factory
Wetted Surfaces	PFA and PTFE fluoropolymer No wetted "O" rings
Dimensions	225mm (8.86 inch) x 508mm (20 inch) x 147mm (5.79 inch)
Element Purge	Small amount of clean dry air (CDA) or N2 gas flows between the grounded element & PTFE sheath. Removes chemical permeation and minimizes ionic contamination for longer life.

MODEL NUMBER BREAKDOWN

TIH	6	-	3	1	B	A	S	R	R
TIH series	**Wattage, kW**	-	**Voltage**	**Phase**	**Inlet and Outlet Connections**	**Drain Connection**	**Plumbing Configuration**	**Process sensor type**	**Overtemp sensor type**
	01 thru 18		**1 =** 208V	**1 or 3**	**A** = 1/2 inch Flared	**O (or 0) =** No Drain	**S =** Straight (180° opposed inlet, outlet, center-bottom drain)	**J =** Type J thermocouple	**E =** Type E thermocouple
			2 = 240V		**B =** 3/4 inch Flared	**A =** 1/2 inch Flared	**R =** Bottom side inlet, rotated 90° to right of outlet (center-bottom drain)	**K =** Type K thermocouple	**K =** Type K thermocouple
			3 = 380V		**C** = 1 inch Flared	**B** = 3/4 inch Flared	**L =** Bottom side inlet, rotated 90° to left of outlet (center-bottom drain)	**H =** 100-Ohm RTD (2-wire)	**H =** 100-Ohm RTD (2-wire)
			4 = 400V		**S =** 3/8 inch Flared	**S =** 3/8 inch Flared	**E =** Bottom side inlet, rotated 180° from outlet (center-bottom drain)	**R =** 1000-Ohm RTD (2-wire)	**R =** 1000-Ohm RTD (2-wire)
			5 = 415V		**T =** 3/8 inch Super 300 Pillar	**T =** 3/8 inch Super 300 Pillar	**A =** Bottom side inlet, directly below outlet (center-bottom drain)	**O =** No process sensor	
			6 = 480V		**U** = 25mm union	**V =** 1/2 inch Super 300 Pillar	**B =** Bottom inlet center of bottom, (standard no drain, side bottom drain if required)		
			7 = 440V		**V =** 1/2 inch Super 300 Pillar	**W =** 3/4 inch Super 300 Pillar	**C =** Straight (side-drain, below inlet)		
			8 = 575V		**W =** 3/4 inch Super 300 Pillar	**Y =** 1/4 inch Super 300 Pillar	**D =** Straight (side-drain, below outlet)		
			9 = 220V		**X =** 1 inch Super 300 Pillar	**Z =** 1/4 inch Flared	**H** = Horizontal design (similar to B, but with drain on lower side, opposite outlet)		
			10 = 200V		**4** = 20mm union	**4** = 20mm union	**Other configurations =** issue new plumbing deisgnation		
			14 = 600V						
			15 = 230V						
			16 = 450V						

DIMENSIONS

VERTICAL CONFIGURATION	
kW	**LENGTH**
1	463 mm (18.23 inches)
2	
3	
4.5	667 mm (843.5 inches)
6	
9	870 mm (843.5 inches)
12	
13.5	1022 mm (843.5 inches)
18	1073 mm (843.5 inches)

HORIZONTAL CONFIGURATION	
kW	**LENGTH**
1	508 mm (20 inches)
2	
3	
4.5	
6	629 mm (843.5 inches)
9	845 mm (843.5 inches)
12	
13.5	1066 mm (843.5 inches)
18