

**EYELA**

Organic synthesizer

# ProcessStation™

PPS-5510

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- Five heating blocks enables to set 5 different temperature and execute reflux for each test tube individually.
- Synthesis scale: 0.5mL to 60mL  
Available number of vessels: Up to 5 tubes (0.5mL to 60mL) can be fit into five heating blocks. (By using test tube adapter, max. 20 tubes can be used.)
- Temperature control range:  $-10^{\circ}\text{C}$  to  $150^{\circ}\text{C}$  (up to  $130^{\circ}\text{C}$ : 50mL to 60mL)
- Heating, cooling, reflux and stirring function are equipped as standard.
- 14 sizes of reaction tubes are available.
- 10 types of recommended systems are available. (polycondensation reaction, tube sealing reaction, catalyst reaction)

**TOKYO RIKAKIKAI CO., LTD.**

## Five heating blocks broadens your range of experiment.

Process Station PPS-5510 is a parallel type synthesizer that is useful for the applied study of liquid phase. 5 different reactions can be implemented within the range from 0.5mL to 60mL. Various sizes and types of vessels are available depending on your purpose.

### Strong reflux

#### Reflux with dimroth condenser

By connecting the cool water manifold to dimroth condenser, strong and effective reflux experiment can be implemented. It is ideal to remove molecule (for example, water) generated from polymerization experiment or Dean-Stark Trap.

#### Removable reflux adapter



Since the reflux adapter which touches cooled reflux block, cools down the top of reaction tubes, the reaction solvent vapor can be refluxed sufficiently.

#### Cooling cartridge



Improved cooling cartridge can be inserted to the unit from either side.

### High performance individual temperature controller



You can set the temperature ranging from  $-10^{\circ}\text{C}$  to  $150^{\circ}\text{C}$  for five heating blocks. Temperature can be controlled precisely ( $\pm 0.5^{\circ}\text{C}$ ) around the room temperature, and it also falls smoothly.

※ Synthesis scale 50-60mL: Up to  $130^{\circ}\text{C}$

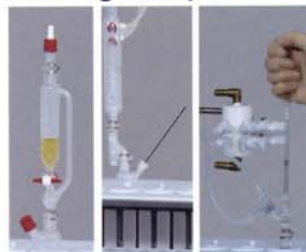
### Powerful stirring and reaction observation



Five ferromagnetic stirrers are supplied with five vessels. Strong and stable vortex stirring can be executed.

Through the observation window, the process of reaction in the test tube (color, reaction condition and stirring force) can be observed.

### Adding sample



Branched reaction vessel and 3-way stopcock enable users to add sample in inactive condition or drip the sample through dripping funnel.

### Strengthening gas purge function

By using sealed tube, Schrenck tube, pressure-resistant vessel and Dean-Stark Trap, the atmosphere of sealed tube, dehydration, deoxidization and high pressure can be created.

### Synthesis scale can be changed.



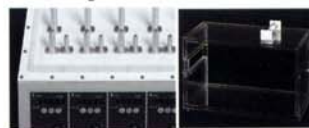
By using the test tube adapter, you can change the size and number of reaction vessel. Synthesis reaction within the scale from 0.5mL to 60mL can be implemented. Up to 20 reaction tubes can be attached.

### Teflon shatter



Teflon shatter is equipped to prevent dew condensation on the aluminum block.

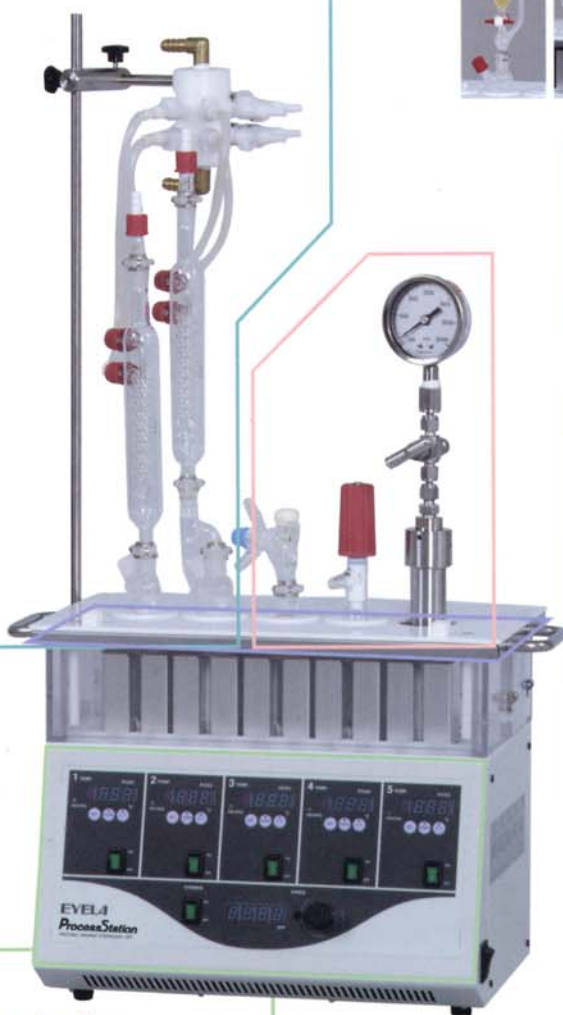
### Safety features



In case of solvent spill out from broken test tube, Teflon tray is able to receive the solvent to protect the unit. Dual chamber prevents the dew condensation of aluminum block, and protects the unit from the sample scattered from broken test tube.



Five over heat protectors enable to set the different temperature limit for each block within the range from  $60^{\circ}\text{C}$  to  $200^{\circ}\text{C}$ . You can set the appropriate temperature depending on the type of solvent or setting temperature of the unit.



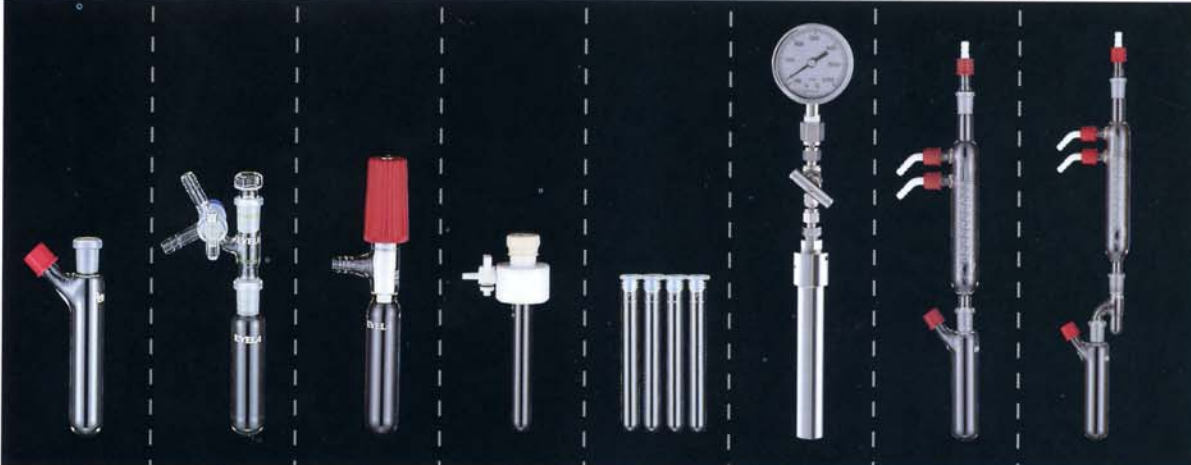







## ■ Various reaction vessels can be combined depending on your purpose.

Various types of reaction vessels can expand your possibilities of organic synthesis experiment. The following is our 10 recommended systems.

1. Polycondensation experiment can be implemented while removing water.
2. Reaction solvent vapor is condensed and refluxed absolutely.
3. Reaction temperature can be monitored.
4. By conducting freezing degassing, deoxidization can be implemented completely.
5. Anhydrous and anoxic reaction can be implemented.
6. Parallel screening and evaluation of reactions for 20 tubes.
7. Catalyst reaction can be implemented.
8. Handy Teflon two-way stopcock.
9. Concentration can be performed just after the synthesis.
10. Impeller stirring can be performed.

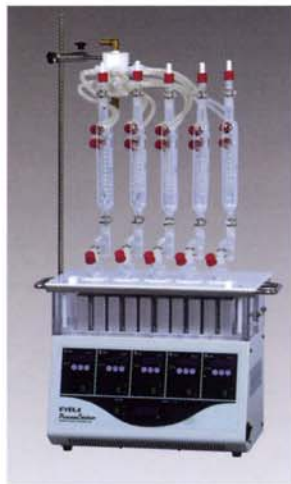
## ■ Various types of reaction tubes and reflux or non-reflux can be selected.

<p>Manifold</p>	<p>Manifold branches off the cool water inlet /outlet, or purge gas, or inactive gas into max. five directions. Manifold has two divergent pathways both on the top and the bottom, so it can be used for branching off the cool water inlet /outlet into five dimroth, and also for branching off vacuum line (10-25hPa) or inactive gas into five 3-way stopcoks.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Cool water manifold</p>  </div> <div style="text-align: center;"> <p>Gas manifold</p>  </div> </div>							
<p>Various reaction tubes</p>	<p>Branched reaction tube (φ18·24·30·34)</p>	<p>Three-cock for adding sample (Schlenk test tube) + standard reaction tube (φ18·24)</p>	<p>Sealing reaction tube (φ16·24)</p>	<p>Teflon cap + φ15 test tube (with lip)</p>	<p>φ12 test tube</p>	<p>φ30 pressure-resistant vessel + pressure-resistant tube with valve</p>	<p>Dymroth condenser + Branched reaction tube (φ18·24·30·34)</p>	<p>Dymroth condenser + Dean-stark trap + Branched reaction tube (φ18·24·30·34)</p>
								
<p>Drip-proof cover (φ12-35)</p>								
<p>Reflux adapter (φ12-25)</p>								
<p>Test tube adapter (φ12-34)</p>								
<p>PPS-5510</p>								

## Recommended system

Polycondensation experiment can be implemented while draining water.

## Dean Stark and Polycondensation

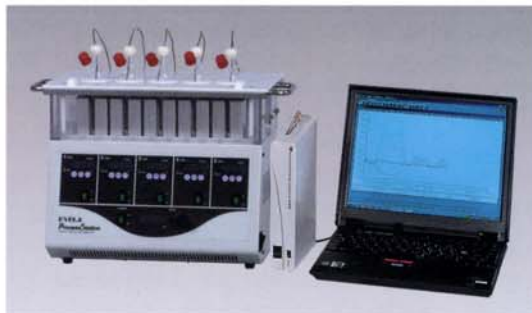


System code: SYS13052

- Suitable for Polycondensation reaction.
- Consecutive reaction (condensation polymerization reaction) such as generation of small molecule like water is reversible static reaction. To set the reaction toward generating polymer side, you need to remove reproduced molecule such as water out of reaction system.
- Through Dean Stark Strap, the instrument can be heated while decreasing pressure and draining water. Small quantity of water can be drained.

- Major functions  
Removing reproduced water of azeotrope.  
Heating, reflux through cooling tube, cooling, stirring, gas purge, depressurizing, sampling
- Synthesis scale: 7mL, 12.5mL, 30mL, 60mL×5
- Temperature control range: -10°C to +150°C (up to 130°C: 50mL to 60mL)

## Reaction temperature can be monitored. Chemi Thermo Monitoring System



System code: SYS13052

- Easy-to-use system supplied with branched reaction vessel
  - Useful to measure temperature and pH while executing sampling.
  - By using soft thermo (temperature interface), the temperature of reaction liquid contained in reaction tube can be monitored on the screen of PC and saved as a file.
- Major functions  
Heating, reflux, cooling, stirring, measuring temperature, gas purge, sampling
  - Synthesis scale: 7mL, 12.5mL×5
  - Temperature control range: -10°C to 150°C

### Major specifications

Product name		Personal organic synthesizer
Model		PPS-5510
Catalogue No.		212710
Available number of reaction vessel		1 to 5 pieces (Max. 20 pieces)
Synthesis scale		0.5mL to 60mL (Variable)
Stirring system		Ferromagnetic stirrer
Features	Temperature control range	-10°C to 150°C (5× Individual temperature control (50 to 60mL: up to 130°C) ※1, ※2)
	Individual temperature control	Temperature difference between two heating blocks is up to 130°C (In case that setting temperature is higher than 0°C)
	Accuracy of temperature control	±0.5°C
Functions	Range of rotation speed	250-1600rpm (30mL of water: ~1300rpm, 60mL of water: ~1100rpm)
	Temperature setting display	membrane key pad input, digital display
	Stirring setting display	Volume input, digital display
	Gas substitution	Vacuum and gas injection (Executed in the vessel) ※3
	Reflux	Not applicable / Reflux adapter / Cool water manifold ※2
	System of adding sample	Pipette, syringe, dripping funnel
	Reaction observation	Through the slit of aluminum block
Specifications	Safety features	Double chamber, fuse, tray for dripping, individual over heat protector (5), Low liquid level thermo protector
	Material of wetted surface	Glass (DURAN)
Components	Size of reaction vessel	φ12 to φ35 (14 types)
	End connection of cool water	Bore diameter: 9mm, Silicon hose (PPS-55LT)
	Manifold	External diameter: 12mm (hose port), For silicon hose φ9×13 (PPS-55M) External diameter: 7.5mm, Easy-to-set hose (For silicon hose φ5×8mm)
	Range of ambient temperature	5°C to 35°C
	Dimensions (mm), mass (kg)	465(W)×310(D)×315(H) (Top ceiling), 800H (Pole), Approx. 22kg
Components	Power · Voltage	6A, 600VA, AC100V 50/60Hz
	Manifold	PPS-55M, Catalogue No. 212720 ※5
	Drip-proof cover	Sold separately ※4
	Reflux adapter	Sold separately ※4
	Set of reaction vessel	Sold separately ※4
	Test tube adapter	Sold separately ※4
	Aluminum block	PPS-55A Catalogue No. 212730
	Double chamber	PPS-55W Catalogue No. 212740
	Cooling cartridge	PPS-55LT Catalogue No. 212750
	Temperature controller, stirring portion	PPS-CTRL Catalogue No. 191760

※1. 5 different temperatures can be set for each heating block.

※2. When conducting temperature control or reflux at room temperature or lower, the unit needs to be connected to low temperature circulator.

※3. Manifold (PPS-55M) is useful when executing gas flushing in block.

※4. Various reaction vessels, glass parts, drip-proof cover, reflux adapter, test tube adapter are not supplied with the unit. Please choose your desired vessel depending on your purpose of use.

※5. PPS-5510 Manifold is not supplied with this model. (Catalogue No. 218270)

### Ancillary products

Manifold	Pole (X1), arbor (X1), Pole holder (X1), Silicon hose (φ5×8 5m×1)
Aluminum block	-
Double chamber	-
Cold insulation hose	Cold insulation hose set (silicon φ9×2m, 2 pieces)
Temperature control, stirring portion	Fuse (X1), grounding adapter (X1)

### Component of PPS-5510

By adding manifold, aluminum block, cooling cartridge and double chamber, PPS-1510, 2510 and 3510 can be remodeled to PPS-5510. (Temperature controller and stirring portion can be shared with all the models.)



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**Safety  
precaution**

For your safety, please read the instruction manual carefully before operation