

## Parallel Nitrogen Evaporator

# User Guide



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## Imprint

Product Identification:

Operation Manual, puriVap-6™

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## Warranty

INTERCHIM guarantees the puriVap-6™ for one year for parts and labour at the discretion of INTERCHIM in normal conditions of use and installation from the date of signing of the installation report by the service provider approved by INTERCHIM to install the machine and by the customer.

The puriVap-6™ is guaranteed against material and manufacturing defaults in normal conditions of use by approved professionals and within the technical characteristics compatible with the functions defined in the user manual.

### Terms and conditions of the guarantee:

- The guarantee covers the supply of parts found defective by INTERCHIM free-of charge, as a minimum, within the limits of the parts listed in part 8.
- The device must have been used in normal operating conditions and in accordance with the instructions.
- The device must have been used with the consumables recommended by INTERCHIM.
- Exhaustive list of original parts covered by the guarantee.

### Guarantee exclusions:

- The guarantee will not cover equipment used in a manner which is noncompliant with the provisions in the instructions.
- The guarantee will not cover equipment subject to interventions, repairs or modifications by personnel without INTERCHIM approval.
- The guarantee will not cover:
  - Parts modified or changed by the customer or the service provider without INTERCHIM's approval.
  - Parts damaged by this modification
  - Parts not recommended by INTERCHIM
  - Parts subject to wear and consumables
  - The guarantee will not cover any parts not listed
  - The guarantee will not cover electrical and/or electronic and/or IT incidents caused by external factors.



- The guarantee will not cover damage caused to the software or hardware due to contamination by an IT virus.
- The guarantee will not cover damage or failures caused by impact and/or bad weather.
- The guarantee will be cancelled in case of damage caused by abnormal mechanical forces applied to the device and exceeding the limits defined in the user guide.
- The guarantee will be cancelled in case of corrosion to the device due to solvent leakage or samples.
- The guarantee will be cancelled in case of corrosion to electronic components caused by highly corrosive gas.
- The guarantee will not cover damage or failures caused by assembly, dismantling, modification or transport after initial installation.
- The guarantee will be cancelled in case of failure or damage due to noncompliance with the closing and shutdown procedure for the device.
- The guarantee will be cancelled in case of failure or damage due to wrong installation.
- The guarantee will be cancelled in case of failure or damage due to wrong AC power supply
- The guarantee will be cancelled in case of failure or damage due to mechanical force to the unit
- The guarantee will be cancelled in case of failure or damage due to acts of nature
- The guarantee will be cancelled in case of failure or damage due to noncompliance with safety procedures.
- The customer is liable for transport risks.

In case of damage during transport, the beneficiary must issue all reserves to the transport firm before accepting the delivery of the device.

- The guarantee will not cover damage caused in accidents, external events, contingencies or force majeure, due to negligence, or a lack of surveillance by the customer or due to non-compliance with safety rules.
- The guarantee will not cover damage if the maintenance procedures recommended by the manufacturer are not complied with.
- INTERCHIM will not guarantee the results of the use of the puriVap-6™
- The guarantee will be cancelled in case of resale of puriVap-6™ as part of a new set not approved by INTERCHIM before



# RECEPTION

The Interchim equipment has been designed, manufactured, tested and inspected according to the ISO 9001 standards.

Interchim equipment is carefully inspected before it is packed. As soon as you receive your equipment, check the condition of the packaging and if you notice any problems, notify your carrier within 48 hours. Then consult the packing list and check that everything is in order. Finally, if you discover that something is missing, or if the goods are damaged, please contact us.

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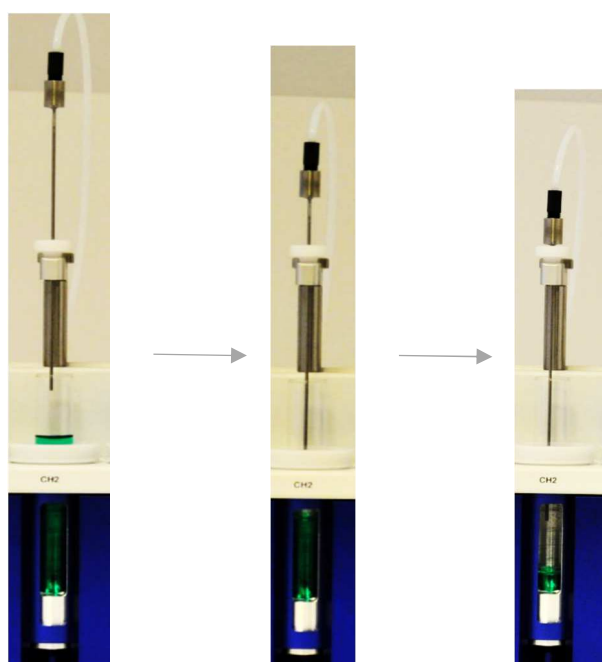
# 1. Introduction & safety precautions

## 1.1 Introduction of puriVap-6™

PuriVap-6™ system is 6 channel Parallel Nitrogen Evaporator. It is one of the sample preparation instruments, applying for general-purpose or regular laboratories.

Compared with the traditional rotary evaporator, puriVap-6™ system with 6-channel can process 6 parallel samples simultaneously, thereby increasing laboratory throughput sample processing capability.

The nitrogen flow rate of each channel can be adjusted independently. The nitrogen purge needle in each channel can be adjusted up and down independently.







The system uses a well-developed 208 intelligent temperature controller to set and calibrate temperature, using thermocouples to heat aluminum block, and the designed aluminum block structure makes each channel the temperature uniformity very well. The temperature difference RSD is less than 5%.

The sample volume is up to 60ml. Without transferring, samples are directly concentrated, thereby reducing transfer loss and improving recovery.

The system is compacted (340x1750x110mm) with only 5 kg weight, and can be placed at random in a fume hood.



## 1.2 safety precautions

<p>1.2.1 Electricity safety</p>	 <p>Caution, electric shock!</p>	<p>The instrument is to be used within the range of the rated voltage and power, and the power cord must be disconnected when it is done. Prior to use, please check if the wire is aged. Subject to the phenomenon of aged wires, please contact the company to ask for after-sales professional inspection and maintenance, prohibiting customers from disassembly the instrument and connecting internal circuit parts, in order to avoid a short circuit or open circuit.</p>
<p>1.2.2 Gas safety</p>	 <p>Caution, explosive!</p>	<p>The instrument is used in the rated nitrogen pressure range. Before use, please check if the nitrogen bottle leaks, and nitrogen cylinder has no faults. The maximum pressure of instrument air connections is less than 1.0MPa, so the pressure on nitrogen cylinder and regulator should not exceed 1.0MPa, and 0.2MPa is suggested to use</p>
<p>1.2.3 Fire safety</p>	 <p>Caution, flammable!</p>	<p>Most reagents involved in puriVap-6™ system are flammable and explosive. When chemical solvent vapor concentration reaches a certain level, it would be flammable and cause the fire. The instrument should be kept away from the sources of ignition and high temperature places. If there is solvent pungent in the process of use, please carefully check whether there is gas leakage or liquid leakage, and turn off the power.</p>
<p>1.2.4 Chemical reagent safety</p>	 <p>Caution, toxic! Caution, corrosive!</p>	<p>puriVap-6™ is an instrument for organic chemical sample pretreatment. The involved chemical solvents have harmful effects on the human body. Despite the instrument fully enclosed and full vent design, but it is recommended that customers pay attention to their personal safety during the experiment. Regular check of the liquid waste barrels as well as the working conditions of the vent fan is required, to avoid leakage caused by corrosion and to avoid organic solvent vapors affecting operator health. If there is abnormal fault, please contact our after-sales to do inspection and maintenance.</p>





## 2. Hardware

### 2.1 Axis view



Instrument dimensions : length 340mm, width 110mm, height 175mm, compacted size and saving laboratory space.

Instrument weight: 5 kg, easy to be moved in the general-purpose laboratory.

The instrument consists of six channels, the gas flow rate and stainless steel purge needle height indifferent channel can be adjusted independently.

The red parts in instrument are heating aluminum block, which can uniformly heat six channels. The temperature is controlled by A208 smart temperature controller, easy to use and accurate to be set and calibrated. The temperature difference RSD is less than 5%.

### 2.2 Back view



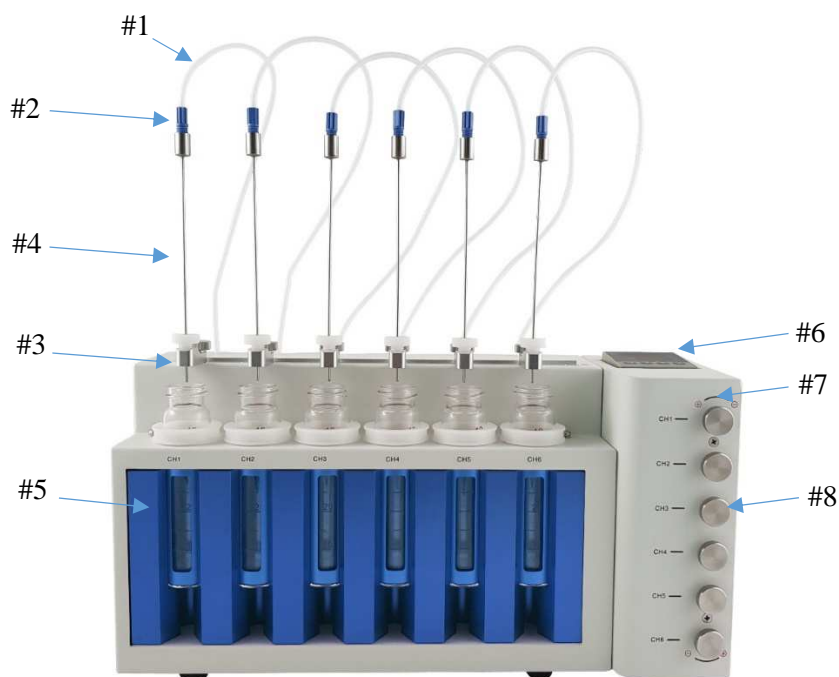
Power switch

Three phase power socket

4mm diameter gas tubing push in fitting



## 2.3 Front view



#1 - Nitrogen tubing: FEP transparent tubing as the gas feeding pipe. FEP is a kind of polytetrafluoroethylene (PTFE), which is good anti-corrosive material for various solvents.

#2 - Flanged joints: PP + fiberglass flange joints with good strength and solvent resistance, for connecting the purge needle and gas tubing.

#3 - Purge needle holder: to control the purge needle adjusted up-down and left-right regulation.

#4 - Purge Needle: stainless steel purge needle can be adjusted up and down, left and right, to find the best concentrating position.

Main Sheet Metal Shell: nitrogen blowing concentrator main sheet metal shell, with insulated pad between heating aluminum block.

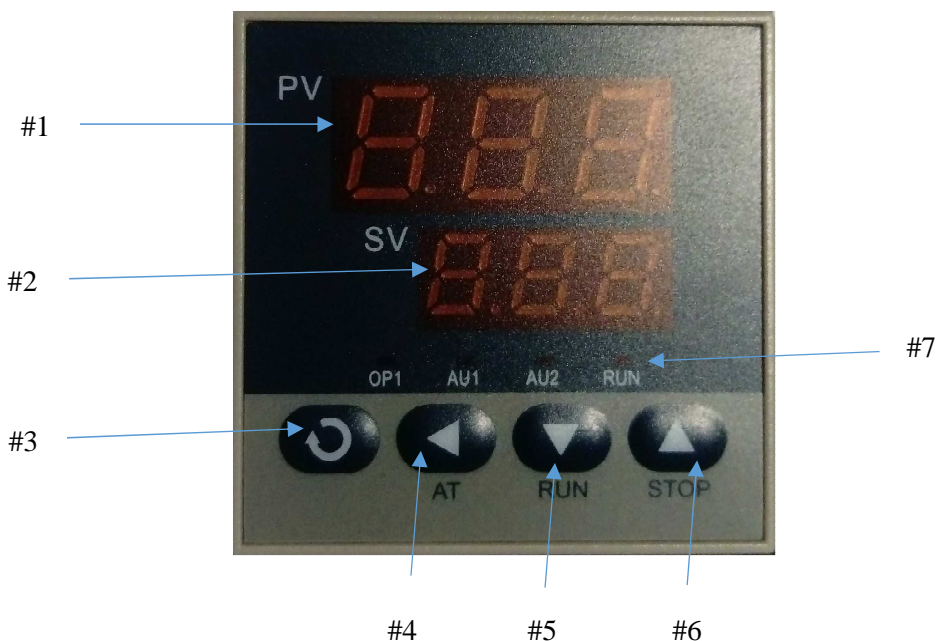
#5 - Heating Aluminum Blocks: a special aluminum block used to uniformly heat concentration

#6 - 208 Intelligent Temperature Controller: very reliable configuration as well as the temperature calibration.

#7 - Gas Flowrate Indicator.






#8 - Gas Flow Adjustment Knob: each channel corresponds to a knob




### 3. Temperature Reset



1	Top display window	Showing measuring value PV, parameter name
2	Bottom display window	Showing the setting value SV, alarm code, parameter data, etc.
3	Setting button	To enter parameter setting, and confirming, etc.
4	Data moving button	May be used to intergrate data
5	Data reducing button	
6	Data increasing button	
7	LED indicator	OP1/AU1/AU2/RUN showing data output, alarm setting 1,2 and running indicator

Basic display status: after instrument power on, the display window displays the measurement value PV in top window, and setting value SV in bottom window. This display status is the basic display status. When the measurement value is out of range of the input value (such as thermocouple broken), the word of "orA" is alternately displayed in the top window with measuring upper or lower limit, and the instrument will be automatically stopped to control the output.

Set the given values: in the basic display state, if the parameter lock is unlocked, the temperature control value can be modified in the bottom window by pressing keys of ,  or , pressing  to decrease the data and pressing  to increase the data.

The decimal point would flash for modifying data. Holding the buttons can quickly increase or decrease the value, and speeding up with the decimal point shifted to the right. Pressing  can move the location of the data (cursor) directly. Pressing  or  can modify the value of the flashing position, and the operation is very quick

#### 4. Summary of puriVap-6™ feat

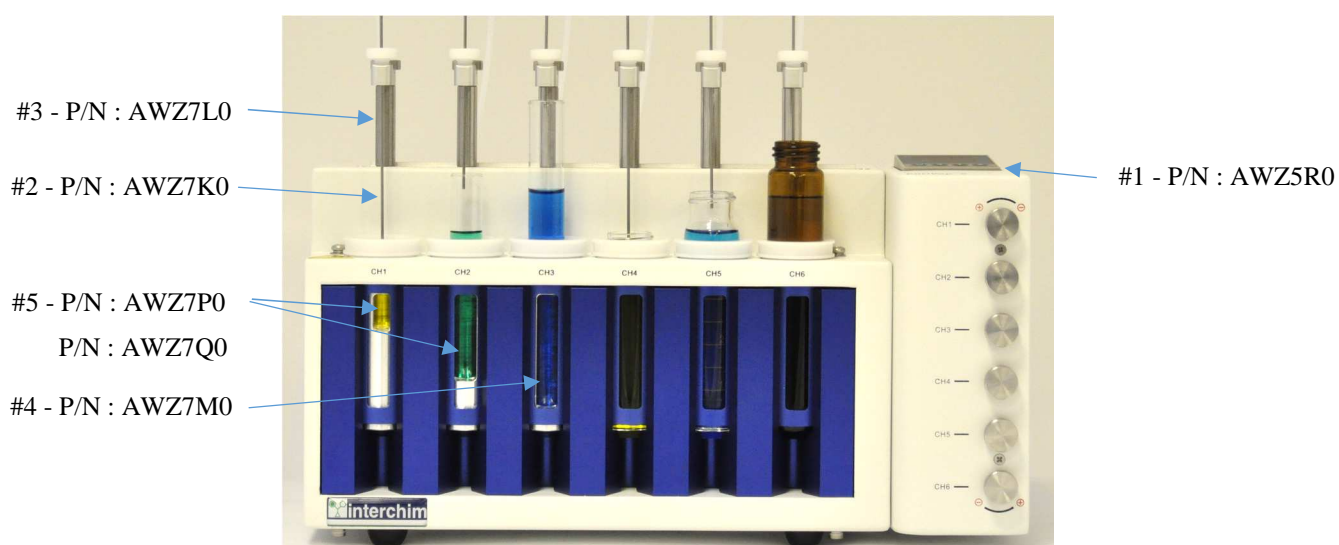
1	Channel number	6 parallel concentration channels
2	Heating mode	Applying aluminum block dry heating
3	Nitrogen purge	Purge needle can be adjusted individually up and down, and the nitrogen flowrate can be adjusted individually
4	Concentration tube	40mL graduated glass flat-bottomed vial with scale; 40mL tailpipe concentrated vial with scale, 60mL VOA vials, 18x150mm, 16x100mm, 13x100mm, 2mL vials
5	Anti-corrosive material	PTFE or teflon are used for the solvent exposed parts, can endure the dichloride methonal solvent.
6	Instrument dimension	340 (W) ×175 (H) ×110 (D) mm
7	Power	AC 220V
8	Gas supply	Nitrogen 0.1—0.2MPa
9	Weight	About 5KG
10	Max Temperature	100°C

## 5. Temperature curve

The temperature is increased quickly in the first 10 minutes, up to 4 °C / min or more.

Minimum RSD between two channels: 0.11%, indicating that the temperature difference between channels is small. There is about 5 °C temperature difference between the setting value and the real one.

## 6. Configurations



Number	P/N ITM	Description	Packing
#1	AWZ5R0	INTERCHIM PURIVAP6 NITROGEN EVAPORATOR	1u
#2	AWZ7K0	NITROGEN NEEDLE PURIVAP6	1u
#3	AWZ7L0	SPACER M/F M4 L40 PURIVAP6	1u
#4	AWZ7M0	ALUMINIUM BLOCK OD 18MM	1u
#5	AWZ7P0	ALUMINIUM BLOCK OD 16MM - VIALS 2ML	1u
#5	AWZ7Q0	ALUMINIUM BLOCK OD 13MM - VIALS 2ML	1u

AWZ7P0 : adapter for vials 2mL and sample tubes with an external diameter of 16mm

AWZ7Q0 : adapter for vials 2mL and sample tubes with an external diameter of 13mm

AWZ7L0 : spacer allows to increase the height of the needle (for sample tube whose height is higher than 150mm)

## 7. Packing list

P/N ITM	Description	Packing	Qty
AWZ5R0	INTERCHIM PURIVAP6 NITROGEN EVAPORATOR	1u	1
AWZ7K0	NITROGEN NEEDLE PURIVAP6	1u	6
AWZ7L0	SPACER M/F M4 L40 PURIVAP6	1u	6
	COLLECTION BOTTLE 40ML	1u	6
	POWER CORD 220V	1u	1
	TWO WAY CONNECTOR OD4MM/OD6MM	1u	1
	USER GUIDE	1u	1





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