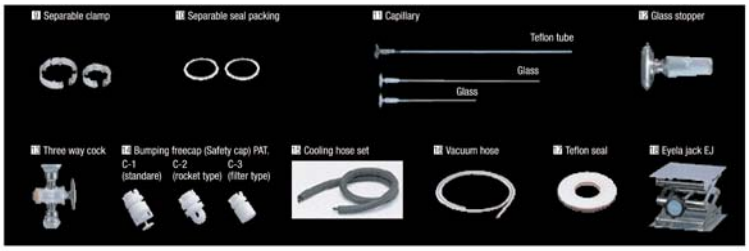
Eyela genuine glassware and accessories with proven quality and safety 2



A Separable clamp

Model	Y-SK-24	Y-SK-13
Cat. No.	116510	116500
Capacity of applied separable flask	500, 1000mL	50~300mL
Applicable mouth size	75mm	50mm

B Separable seal packing

Model	Y-SS-24	Y-SS-13
Cat. No.	116530	116520
Capacity of applied separable flask	500, 1000mL	50~300mL
Applicable mouth size	75mm	50mm

C Capillary

Applicable model	Cat. No.	Specification
N-1100V•T	116540*	565mm TS 19/40 Teflon Tube
N-1100S	142590	510mm TS 19/40 All glass
N-1100V•T	142600	297mm TS 19/40 All glass

* Equipped as standard

D Glass stopper
This cock has no induction tubing for continuous injection
Reflux of concentrated solvent can be prevented
Cat. No.116970

E Three way cock
Three-way cock enables to recover the distillate in the receiver flask while operating
Cat. No.116960

F Bumping freecap (Safety cap) PAT.
As simple as to attach it to the Rotary Joint, innovative bumping prevention by focussing on the principle of bumping. Teflon-made Caps can handle all sorts of solvents
Please use suitable adaptor for different daimeter. (This cap is only for the Rotary Joint Ts29)

Model	C-1(standard type)	C-2(rocket type)	C-3(filter type)
Product No.	116010	116020	116030
Rotary joint	20.2*±0.5mm	20.2*±0.5mm	20.2*±0.5mm
OD	23 x 35L (mm)	23 x 24L (mm)	23 x 27L (mm)

* Equipped as standard

G Cooling hose set

Cat. No.	Tube dia.	Length
112700	ID 9.0mm	2m
174420	ID 9.0mm	5m
143340	ID 15.0mm	2m
174460	ID15.0mm	5m

H Vacuum hose

Spec.	Cat. No.
ID 6 x OD 15mm	119170
ID 12 x OD 30mm	119210

I Teflon seal

Product	Cat. No.
Teflon seal	143880

J Eyela jack EJ

Cat. No.	Model	Dimensions
116120	EJ-A	150 x 150 mm
		Up/down stroke 70~250mm
116130	EJ-B	200 x 200 mm
		Up/down stroke 90~320mm

EYELA http://www.eyelaworld.com

Safety Precaution For your safety, please read the Instruction manual cafefully before operating the product.

Headquarters
Nihonbashi Hon-cho Bldg.,
3-3-4 Hon-cho Nihonbashi,
Chuo-ku, Tokyo 103-0023 Japan
TEL: 03-5201-6462
Fax: 03-3245-1225
info.eyela@eyela.co.jp

Eyela Singapore Pte. Ltd.
51 Anson Road 07-59
Anson Center, Singapore 079904
TEL: 65-6225-1306
Fax: 65-6225-1841
eyelasingapore@singnet.com.sg

Eyela Shanghai
j-he@eyela.co.jp

Eyela Beijin

Eyela Guangzhou

Eyela USA
info@eyelausa.com

EYELA

Eyela new rotary evaporator N-1100 series

make your laboratory a place of safety and environment friendly working condition

New

Rotary Evaporator N-1100V•S•T•N Series

- New system minimizes solvent evaporation and realizes maximum recovery rate
- Compact design realizes complete system installation inside fume hood
- Newly developed chemically coated glass effectively protects the operator from glass dispersion in the event of glass explosion

TOKYO RIKAKIKAI CO., LTD.

Protects the operator, environment and product 1

Safety Point 1 Higher recovery rate of evaporation system itself

Safety Point 2 Install the system in fume hood

Prevent solvent escape into the lab or the workplace

Ministry of Health & Welfare (Japan) directive stipulates laboratory working condition restrictions (see page 3) on organic solvent handling in lab.
Eyela system is designed to minimize solvent release from evaporation system itself by high recovery rate of the system.

Install evaporation system in most appropriate environment

System operation in fume hood protects the operator from exposure to hazardous solvents and also can prevent risk of accidents such as glass explosion

Preference:

- It is preferrable that the system can be controlled through minimum height opening under fume hood sash
- The system in the hood should ideally be chemically-resistive

Safety Point 1 Higher recovery rate of evaporation system itself

Even if the lab is equipped with fume hood or room ventilation system, low recovery rate of evaporation system leads to laboratory environmental pollution by solvents exhausted into air and it also causes excessive workload of neutralization process of the exhausted solvents.

How to increase recovery rate

1. Set proper vacuum value according to solvent
   Set vacuum value so that boiling point is midway between cooling water temperature and bath temperature.
2. Set proper temperature
   Set temperature difference of sample boiling point 20˚C both cooling water temperature (⊿T) and bath temperature (⊿T).
3. Install solvent recovery unit
   In case diaphragm vacuum pump is used as pressure reduser, install solvent recovery unit at exhaust side.
4. Use absorbent like active charcoal
   Solvent recovery unit DPE-1120•2120 are equipped with activew charcoal filter which absorbs odour smell of exhaust gas
5. Depress re-evaporation from receiving flask
   When vacuum is not controlled, it happens that solvents in receiving flask re-evaporate and cause lower recovery rate. Re-evaporation can be prevented by use of the cooling bath for flask.

How to Set condensation condition to realize higher recovery rate

- Cooling capacity of low temperature circulator becomes smaller when set temperature is lower. Taking into consideration sample volume, bath temperature and rotation speed, set the difference of sample evaporation calory < cooling capacity of set temperature as large as possible; which leads to maximum recovery rate.

Recovery rate according to condensation condition (Example)

Cooling water temp. (˚C)	Vacuum control	Temp. difference with sample boiling point		Recovery rate (%)		
		Cooling water (⊿T)	Bath temp. (⊿T)	Receiving flask	Solvent recovery unit	Total
-15	—	—	—	98.91	0.80	99.71
-10	○	20	20	99.78	0.13	99.91
0	—	—	—	97.69	1.90	99.59
0	○	20	20	99.65	0.02	99.67
5	○	15	20	99.57	0.17	99.74
10	○	20	20	99.35	0.10	99.45
20	○	20	20	99.08	0.02	99.10

※Sample: Ethanol, Coolant: 60% Ethyleneglicol, (less 5˚C), Water (above 10˚C) Evaporator rotation speed: 160rpm

Safety Point 2 Install the system in fume hood

Built-in condensing system in fume hood (Custom design example)

Eyela system guarantees safety of the operator and environment friendly lab workplace

<Features>
All units required for condenation can be installed in fume hood and operation panels are arranged in front of fume hood. Solvents elusion from the hood is greatly reduced.
Exhaust heat from low temperature circulator is fed out from fume hood into open air directly and reduce energy load required to adjust lab room temperature.

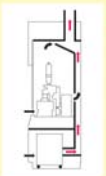
Handling required in fume hood

- Mounting and dismounting of sample flask
- Drainage of organic solvents in receiving flask

Operation panel

Low temperature circulator | Vacuum pump | Evaporator | Water bath

Evaporator used is newly developed N-1100. Jacky is lowered 20mm, condenser surface is 33% increased (V model), length 110mm decreased (compared to previous model)
Print boards for main unit and bath are with moisture/acid resistive coating.



Exhaust heat from low temperature circulator

Exhaust heat from low temperature circulator affects much on air ventilation of the lab. By feeding out exhaust heat through exhaust outlet of fume hood, energy load required for room temperature adjustment can be reduced.

Ask local Eyela distributor

If you are planning to purchase fume hood, open new lab, construct new institute, it is good chance to realize safe and environment friendly lab. Eyela distributors are well experieced in answering and planning for such requirement through their in-depth knowledge on condensing systems. Please contact them at inital stage of your planning.

Compliance with the lab safety environmental regulations

Ministry of Health and Welfare (Japan) directive on "Preventive measure against organic solvents poisonning", Article 5 stipulates;" When employer let employee work on organic solvents, they must make it sure that the site is equipped with sealing device of units which evaporate organic solvents, or with local ventilation device or with pushbull type vetilation device.
Condensation process using organic solvents must be carried out in fume hood or in lab environment with air ventilation. Ultimate care not let the operator exposed to solvent evaporation is necessary.

- Constant air flow from fume hood sash opening part into hood must be secured to protect the operator from evaporated solvents.
- When operating evaporator, it is necessary to drain solvents in receiving flask to drain vessel.

Safety Point 3 Regulate evaporation of organic solvents

❶ To secure windflow into fume hood

Keep sash opening space as small as 30cm (depending of performance of the hood) Operate evaporation system under this condition.

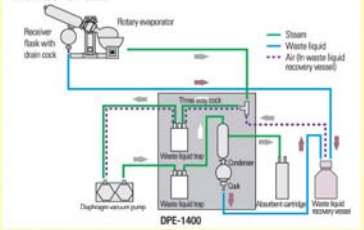
Built-in system which has all control panels installed in front part of hood is an ideal solution

❷ How to drain solvents in receiver flask safety

Without dismounting receiver flask of evaporator or receiver flask of solvent recovery unit, it is possible to drain organic solvents to drain vessel; which eliminates risk of exposure to solvents.

Use of receiver flask with drain cock together with solvent recovery unit (DPE-1400) is recommended.

DPE-1400 Flow Chat



DPE-1400 Recovery Data

Evaporator	Sample 250mL	Cooling water Temp. (℃)	Vacuum Control unit	Recovery Rate (%) Primary	Secondary	Total
N-1100V	Ethanol	10	○	98.38	0.11	99.04
	Methanol	10	○	99.15	0.12	99.27
N-1100N	Ethanol	10	○	98.35	0.12	98.47
	Acid-Ether	-15	○	95.90	3.1	99.00
	Acid-Ether	-15	○	99.59	0.09	99.68

※Bath temperature: 40℃, Evaporator rotation speed: 180rpm

Receiver Flask with drain cock
By attaching to DPE-1400, organic solvents in receiver flask can be drained from drain port to waste liquid vessel directly in closed channel

Solvent Recovery Unit DPE-1400
Organic solvents trapped at exhaust side of diaphragm vacuum pump can be recovered in waste liquid recovery vessel in closed channel

Built-in control units of different components at control panel of fume hood

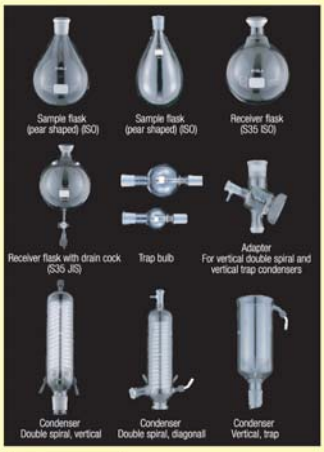
Breakage test of chemical coating flask

Chemically coated glassware

Much emphasis has been expressed on improvement of lab environment, especially where synthesis experiments are daily routine. The lab staff should be protected for their safety, health and relief.
Still, use of various glassware is indispensable for all lab and glassware is always subject to breakage accident.
In the case of experiment with rotary evaporator, which carries out condensation under depressed pressure, the risk of glassware breakage is high.

- Laboratory glassware can be broken by stress from increased/decreased pressure caused from small unvisible scratch
- In addition to risk of fire, glass breakage is dangerous to the operator by dispersed glass pieces and exposure to hazadous solvents. Therefore, minute precaution is necessary on protection of the operator from glass breakage accident.

Safety Point 4 Prevent broken glass dispersion



Sample flask protection cover (option)
Prevents glass dispersion when sample flask is broken by reduced pressure

New chemically coated glassware to enhance safety and relief

Eyela evaporator N-1100F type is equipped with newly developped chemical coating glass. It is hard to break and hard to disperse even if broken. It is also highly resistive to acid and with increased transparency.

- Hard to break and disperse
- Highly transparent glass
- Highly resistive to acids
- Easy to clean and dry
- Condenser, receiving flask and adapter are equipped as standard
- Sample flask and trap bulb are available as option

Acid resistance

10% sulfuric acid	10% hydrochloric acid	10% acetic acid	10% sodium hydroxide	Toluene
◎	◎	◎	◎	◎
O-xylene	Acetic ethyl	Cyclohexane	Acetone	Acetonitril
○	◎	○	○	◎
Trichlor etylene	Cychloethan	Nitrobenzene	Chloroform	DMF
○	◎	△	◎	◎

◎: No change ○: Very slight change △: Slight change
※Test method: Plaster acid repeatedly o coating surface and observe change after a few hours

Heat resistance

-80℃~60℃

Evaporation capacity

70% compared with standard sample flask (solvent recovery rate is same)
※Cooling water temp. 0℃, Vacuum: 23hPa, Rotation speed: 180rpm, Bath temp.: 40, 50, 60, 70℃, Water: 500mL

Physical test

Drop test: Effectively prevents glass dispersion
※500mL~1L flask: Drop from 50cm height
※300mL > flask: Drop from 80cm height
Breakage time by ultrasonic cleaner: 185min.
※Output 750W, 5min/test

System installed in fume hood

Minimized height using compact evaporator

System code: SYS09225

Installation space
910W x 355D x 610H (mm)
Recovery rate: 99.59%

Operation in hood can be done with minimum sash opening space

- Compact evaporator without condenser fits to small installation space inside fume hood
- As condenser is seperated from evaporator main unit, up/down movement can be done smoothly and safely
- Recovered solvents in reciever flask can be drained to waste liquid vessel by simply turnig cock.

Product	Model	Cat.No.
Rotary evaporator	N-1100N-W	229510
Vacuum control unit	NVC-2100	216630
Teflon valve for controller	CV-1	196910
Low temperature circulator	CA-1310	208320
Solvent recovery unit	DPE-1400	229720
Connection set B		229740
Trap bulb 200mL	TS29/38X29/38	116750
Condenser (Suction side)		230960
Diaphragm vacuum pump	DIVAC 1.2L	170660
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

Vertical condenser type with minimum installation space

System code: SYS09223 (with chemical coating glass)

Installation space
885W x 355D x 790 (1040)H (mm)
Recovery rate: 99.67%

Complete system with vertical condenser can be installed inside fume hood

- Newly designed vertical condenser and vertical solvent recovery unit implements space saving system
- High recovery rate is realized by built-in vacuum control unit
- Chemically coated galssware protects the operator from accident by broken glass

Product	Model	Cat.No.
Rotary evaporator	N-1100V-W	226780
Low temperature circulator	CA-1310	208320
Solvent recovery unit	DPE-1220C	216680
Cooling bath for receiving flask		230950
Diaphragm vacuum pump	DTC-22	230290
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

Effective use of lab table space

Effective use of lab table side

System code: SYS09241

Installation space
727W x 355D x 790 (1040)H (mm)
Recovery rate: 99.67%

Slim components realize effective use of table top

- As low temperature circulator and solvent recovery unit are installed beside table, table top can be effectively used
- Recovered solvents in reciever flask can be drained to waste liquid vessel by simply turnig cock.

Product	Model	Cat.No.
Rotary evaporator	N-1100V-W	226780
Vacuum control unit	NVC-2100	216630
Teflon valve for controller	CV-1	196910
Vacuum control unit mounting plate	N-NVC3	189310
Low temperature circulator	CCA-1111	219950
Solvent recovery unit	DPE-1300	220990
Diaphragm vacuum pump	DTC-22	230290
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

Effective use of the space under lab table

System code: SYS09254

Installation space
977W x 355D x 790 (1040)H (mm)
Recovery rate: 99.67%

Built-in type low temp. circulator is installed at the space under table

- Energy saving type low temperature circulator COOL ACE is installed under table and realizes effective use of laboratory space
- Solvent recovery unit is equipped with vacuum controller and active charcoal cartridge as standard. Total system implements high solvent recovery rate and eliminates ordor elements

Without cartridge: 400ppm< ⟶ With cartridge:<40ppm

Product	Model	Cat.No.
Rotary evaporator	N-1100V-W	226780
Low temperature circulator	CAE-1300A	226270
Solvent recovery unit	DPE-1120	216650
Diaphragm vacuum pump	DTC-22	230290
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

System to realize high recovery rate and safe, environment friendly lab

Simple system and safely recovers sovlents

System code: SYS09220

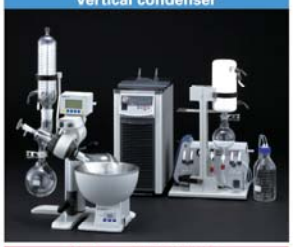
Recovery rate **99.58%** (Rotary evaporator + vacuum controller) ➡ **99.59%** (Rotary evaporator + vacuum controller + solvent recovery unit)

Drain primary/secondary recovered solvents by cock operation

- By use of compact evaporator without condenser, up/down movement can be done smoothly and safely
- Primary condensation at evaporator and secondary condensation at exhaust side of vacuum pump increase recovery rate
- Primary/ secondary recovered solvents in receiver flask can be drained to waste liquid vessel by simple cock handling

Product	Model	Cat.No.
Rotary evaporator	N-1100N	229490
Water bath	SB-350	180180
Eyela jack	EJ-B	116130
Vacuum control unit	NVC-2100	216630
Teflon valve for controller	CV-1	196910
Vacuum control unit mounting plate	N-NVC 3	189310
Low temperature circulator	CCA-1111	219950
Solvent recovery unit	DPE-1400	229720
Connection set B		229740
Diaphragm vacuum pump	DTC-22	230290
Condenser (Suction side)		230960
Trap bulb 200mL	TS29/38X29/38	116750
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

Safely drains solvents with vertical condenser



System code: SYS09249

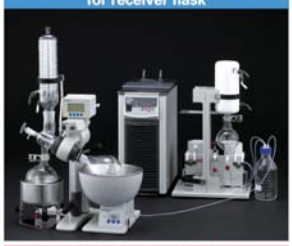
Recovery rate **99.65%** (Rotary evaporator + vacuum controller) ➡ **99.67%** (Rotary evaporator + vacuum controller + solvent recovery unit)

Standard system drains secondary recovered solvents

- Secondary recovered solvents are safely drained into waste liquid vessel

Product	Model	Cat.No.
Rotary evaporator	N-1100V-W	226780
Vacuum control unit	NVC-2100	216630
Teflon valve for controller	CV-1	196910
Vacuum control unit mounting plate	N-NVC 3	189310
Low temperature circulator	CCA-1111	219950
Solvent recovery unit	DPE-1400	229720
Connection set B		229740
Diaphragm vacuum pump	2032C-05	220750
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

System with cooling bath for receiver flask



System code: SYS09250

Recovery rate **99.65%** (Rotary evaporator + vacuum controller) ➡ **99.67%** (Rotary evaporator + vacuum controller + solvent recovery unit)

Recovered solvents in receiver flask can be drained to waste liquid vessel by simple cock handling

- Primary condensation at evaporator and secondary condensation at exhaust side of vacuum pump increase recovery rate
- Primary / secondary recovered solvents in receiver flask can be drained to waste liquid vessel by simple cock handling.

Product	Model	Cat.No.
Rotary evaporator	N-1100V-W	226780
Vacuum control unit	NVC-2100	216630
Teflon valve for controller	CV-1	196910
Vacuum control unit mounting plate	N-NVC 3	189310
Low temperature circulator	CCA-1111	219950
Solvent recovery unit	DPE-1400	229720
Connection set B		229740
Cooling bath for receiver flask		230950
Receiver flask with drain cock		230940
Diaphragm vacuum pump	DIVAC 1.2L	170660
Condenser (Suction side)		230960
Cooling hose set	ID9mm 2mx3	112700
Vacuum hose	ID6xOD15mm 5m	119170

Eyela, pioneer manufacturer of rotary evaporator since 1965, now offers versatile and expandable system 1

Easy to use, environment friendly concept with potential of system expansion

New rotary evaporator from Eyela, model N-1100 series

Easy handling in fume hood:	less 20mm height for main unit, less 110mm for vertical condenser
Safety in fume hood:	Control boards of evaporator are with moisture and acid resistive coating
Small space in hood:	Compact evaporator N type without condenser
Protection from glass breakage:	F type is equipped with chemical coating glassware for condenser, receiver flask and adapter
Expanded cooling surface:	Cooling surface dimensions of vertical and diagonal condensers are expanded 33% to achieve higher recovery rate

N-1100V

- Minimum installation space type with vertical condenser, Overall height reduced by 130mm to previous model, Suction nozzle is placed at lower part of the unit for easy and stable operation in fume hood.
- Cooling dimension of condenser is expanded from 0.11m2 to 0.146m2, This 33% expansion contributes to higher recovery rate.

N-1100S

- Most popular diagonal condenser type. Cooling dimension of condenser is expanded from 0.11m2 to 0.146m2, This 33% expansion contributes to higher recovery rate.

N-1100T

- With dewar type condenser. Low boiling point sample can be condensed by dry ice or by water bath.

N-1100N

- Compact type without condenser. Suitable for installation in fume hood.

Optipon

- **Teflon seal**
  All teflon seal suitable for organic solvents
  Cat. No. 143880

Specifications

Model	N-1100S/N-1100SF		N-1100S-W/N-1100SF-W		N-1100S-WD/N-1100SF-WD		N-1100V/N-1100VF		N-1100V-W/N-1100VF-W		N-1100V-WD/N-1100VF-WD	
Cat. No. 220V	226718	226748	226728	226758	226738	226768	226778	226808	226788	226818	226798	226828
115V	226719	226749	226729	226759	226739	226769	226779	226809	226789	226819	226799	226829
Bath	–		Water		Water/Oil		–		Water		Water/Oil	
Bath dimensions (mm)	–		ID230(Bottom160)x100H		ID240x120H		–		ID230(Bottom160)x100H		ID240x120H	
Rotation speed	20-180rpm						20-180rpm					
Rate of evaporation	Max.18mL/min (Water)						Max.18mL/min (Water)					
Bath temperature	–		RT+5-90°C		RT+5-180°C		–		RT+5-90°C		RT+5-180°C	
Condenser	Diagonal, double spiral 0.146m²						Vertical, double spiral 0.146m²					
Sample flask	Pear shaped (ISO) 1L NS29/32						Pear shaped (ISO) 1L NS29/32					
Receiver flask	Round shaped (ISO) 1L S35/20						Round shaped (ISO) 1L S35/20					
Rotary joint	ID18 x 272mmL TS29/38						ID18 x 178mmL TS29/38					
Vacuum seal	Teflon+teflon coated Viton double seal						Teflon+teflon coated Viton double seal					
Dimensions (mm)	660Wx320Dx510(760)H		710Wx355Dx510(760)H		730Wx380Dx510(760)H		480Wx320Dx790(1040)H		535Wx355Dx790(1040)H		550Wx380Dx790(1040)H	
Net weight (kg)	8		11		13		8.5		11.5		13.5	
Input power	35VA		1.035kVA				35VA		1.035kVA			

Eyela, pioneer manufacturer of rotary evaporator since 1965, now offers versatile and expandable system 2

Wide variety of related products ensures satisfactory system selection to fulfile customer needs

Low temperature circulator increases solvent recovery rate
Newly developped inverter type circulator (COOL ACE ECO) contributes much to energy cost saving

- Low temp. circulator CCA, CA series
- Inverter type low temp. circulator COOL ACE ECO series

Vacuum controller further increases solvent recovery rate

- Vacuum controller NVC-2100

Variety of solvent recovery units also realize increased solvent recovery rate

- Solvent recovery unit DPE series

Dry type vacuum pump

- Diaphragm vacuum pump DIVAC 1.2L, DTC-22, MD1C

Prevent re-evaporation from receiver flask for increased solvent recovery rate

- Cooling bath for receiver flask

Increased safety for the operator by chemically coated glassware

- Chemical coating glass

Flask protection cover is also available for increased safety

- Protects operator from accident of glass dispersion by breakage of flask

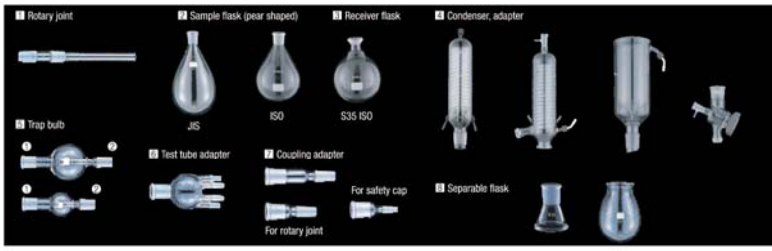
Selection of bathes exclusively designed for rotary evaporator

- Water, Water/Oil bath SB-350•1100, OSB-2100

Specifications

Model	N-1100T/N-1100TF		N-1100T-W/N-1100TF-W		N-1100T-WD/N-1100TF-WD		N-1100N
Cat. No. 220V	226838	226868	226848	226878	226858	226888	229498
115V	226839	226869	226849	226879	226859	226889	229490
Bath	–		Water		Water/Oil		–
Bath dimensions (mm)	–		ID230(Bottom160)x100H		ID240x120H		–
Rotation speed	20-180rpm						20-180rpm
Rate of evaporation	Max.18mL/min (Water)						–
Bath temperature	–		RT+5-90°C		RT+5-180°C		–
Condenser	Vertical, double spiral 0.146m²						–
Sample flask	Pear shaped (ISO) 250mL NS29/32						Pear shaped (ISO) 1L NS29/32
Receiver flask	Round shaped (ISO) 1L S35/20						–
Rotary joint	ID18 x 178mmL TS29/38						ID18 x 178mmL TS29/38
Vacuum seal	Teflon+teflon coated Viton double seal						Teflon+teflon coated Viton double seal
Dimensions (mm)	480Wx320Dx730(980)H		535Wx355Dx730(980)H		550Wx380Dx730(980)H		450Wx320Dx430(680)H
Net weight (kg)	8.6		11.6		13.6		6.5
Input power	35VA		1.035kVA				35VA

Eyela genuine glassware and accessories with proven quality and safety 1



1 Rotary joint

Standard type			Thick type			Transparent taper joint type		
Prdct. No.	Length mm	Spec.	Prdct. No.	Length mm	Spec.	Prdct. No.	Length mm	Spec.
142500	272	Ts 29/38	116560	272	Ts 29/38	116600	272	Ts 29/38
142510	272	Ts 24/40	116570	272	Ts 24/40	116610	272	Ts 24/40
142520	178	Ts 29/38	116580	178	Ts 29/38	116620	178	Ts 29/38
142530	178	Ts 24/40	116590	178	Ts 24/40	116630	178	Ts 24/40

2 Sample flask (pear shaped)(JIS)

Sample flask Ts 29/38			Sample flask Ts 24/40		
Type	Glass	Chemical coating glass	Type	Glass	Chemical coating glass
Capacity ml	Prdct. No.	Prdct. No.		Prdct. No.	Prdct. No.
50	116140	226240		116220	226310
100	116150	226250		116230	226320
200	116160	226260		116240	226330
300	116170	226270		116250	226340
500	116180	226280		116260	226450
1L	116190	226290		116270	226360
2L	116200	226300		116280	226370

Sample flask NS 29/32			Sample flask NS 24/40		
Type	Glass	Chemical coating glass	Type	Glass	Chemical coating glass
Capacity ml	Prdct. No.	Prdct. No.		Prdct. No.	Prdct. No.
50	216700	228500		216800	228960
100	216710	228510		216810	228570
250	216720	228520		216820	228580
500	216730	228530		216830	228590
1L*	216740	228540		216840	228600
2L	216750	228550		216850	228610

* Equipped as standard for N-1100 series

3 Receiver flask

Receiver flask S35 ISO			Receiver flask S35 JIS		
Type	Glass	Chemical coating glass	Type	Glass	Chemical coating glass
Capacity ml	Prdct. No.	Prdct. No.		Prdct. No.	Prdct. No.
100mL	216860	228620		116300	228380
200mL				116310	228390
250mL	216870	228630		–	–
300mL				116320	228400
500mL	216880	228540		116330	228410
1L*	216890	228650		116340	228420
2L	216900	228660		116350	228430
500mL with drain cock	–	–		116370	228440
1L with drain cock	230940	228670		116380	228450
Jacket type	–	–		116390	–

* Equipped as standard for N-1100 series

4 Condenser, adapter

Product	Condenser						Adapter	
Type	Vertical double spiral		Diagonal double spiral		Vertical dewar type		for dewar type	
Cat. No.	187790	187790	187780	228460	187920	228480	911160	228490
Chemical coating	–	○	–	○	–	○	–	○

5 Trap bulb

Product	Trap bulb						
Specification	TS29/38 ①				TS24/40		
	29/38 ②	24/40 ②	19/33 ②	15/30 ②	24/40 ②	19/33 ②	15/30 ②
Capacity mL							
100mL	116700	116710	156700	116720	116730	156710	116740
200mL	116750	116760	156680	116770	116780	156690	116790
300mL	116800	116810	156650	116820	116830	156660	116840
500mL	116850	116860	156610	–	156630	156640	–
Chemical coating							
100mL	228680	228690	228700	228710	228720	228730	228740
200mL	228750	228760	228770	228780	228790	228800	228810
300mL	228820	228830	228840	228850	228860	228870	228880
500mL	228890	228900	228910	–	228920	228930	–

6 Test tube adapter

Cat. No.	Test tube joint	Joint
116550	TS 15/25	TS 29/38
143870	TS 15/25	TS 24/40

Test tube

Cat. No.	Test tube
201450	TS 15/25 (6pcs/set)

7 Coupling adapter for different diameter

Application	Cat. No.	Specification
For safety cap	116930	TS 29/38x24/40
	116940	TS 29/38x19/33
	116950	TS 29/38x15/30
For rotary joint	116870	TS 29/38x24x40
	116880	TS 29/38x19/33
	116890	TS 29/38x15/30
	116900	TS 24/40x29/38
	116910	TS 24/40x19/33
	116920	TS 24/40x15/30

8 Separable flask

Product	Cat. No.	Spec.	ID x H (mm)
Separable cover	116460	TS 29/38	50x82
	116470	TS 24/40	50x82
Separable sample flask	116480	TS 29/38	75x82
	116490	TS 24/40	75x82
	116400	50mL	50x60
	116410	100mL	50x100
	116420	200mL	50x110
	116430	300mL	50x125
	116440	500mL	75x152
	116450	1L	75x185