



Rocket Synergy 2 High Speed Evaporator

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The **ATS Scientific Products** Rocket Synergy 2 high speed evaporator is designed to dry or concentrate up to six flasks, each containing a maximum of 450ml of solvent, or 18 ASE* vials, with no user intervention or attention. The removable flask rotor may also be replaced with a 5 liter stainless steel vessel for batch processing. It is five times faster than other 'intelligent' evaporators and is capable of replacing several rotary evaporators, saving valuable bench space.

Rocket controls are very easy to use. Load your samples, select the correct method, press start and walk away. The evaporator is equipped with high performance features that prevent foaming, bumping and cross-contamination. A built-in cold trap provides very high levels of solvent recovery, even with volatile organic solvents. Auto-draining, under the control of the Rocket, ensures optimal solvent recovery is maintained under all conditions.

Using SampleGenie™ or Flip-Flop™ sample handling systems further extends the scope of the Rocket Synergy 2. These enable up to 400ml to be concentrated or dried directly into a smaller vial, increasing sample recovery and inter-sample reproducibility, while eliminating the drudgery associated with manual transfers. Methods on the Rocket Synergy 2 can easily be optimized, and new methods uploaded via USB key. Data is downloaded in the same way. The Rocket has an on-board strobe that allows each of the six flask positions to be viewed separately in real time.



Make Time for Science

- No waiting – five times faster than other 'intelligent' evaporators
- Perfect results – no monitoring or intervention required for excellent sample recovery
- Error free – eliminates foaming, bumping and cross-contamination
- Easy to use – simple controls and intelligent software
- Space saving – one Rocket replaces several rotary evaporators
- Solvent compatibility - with a range of solvents
- Environmentally friendly – cold traps and advanced methodology provide very high solvent recovery



Revolutionary Rocket Synergy 2

Rocket evaporators use patented vacuum technology to evaporate solutions to dryness, or a concentrate, rapidly and safely. The latest Synergy series offers integrated, flexible solutions for processing a wide range of sample volumes. Interchangeable rotors will accommodate tubes, flasks and batch volumes of up to 5L.

Rocket Technology

Using a single, common vacuum pump, the Rocket creates two vacuum environments:

- 1 A low vacuum causes the solvents in the sample to boil at a low temperature, often below 0 °C.
- 2 A second vacuum environment boils deionised water to make low temperature, low pressure steam. The temperature of the steam heating the vessel or flasks in the Rocket is controlled in this way, while the temperature of the aluminium outer chamber is also carefully controlled at the user's set temperature.

Solvents boiling in the flasks or vessel will cause cooling, therefore the steam created by the Rocket will condense on the cold outer surface of the flask or vessel.

Condensation of steam releases energy into the samples to speed evaporation, without heating the samples themselves. Condensed steam is thrown off due to the rotational force and re-boiled to make more steam.



The Secret Of Perfect Results

ΔT Rocket software monitors the temperature of coolant entering the condenser and compares it with the temperature of that leaving the condenser. The difference (Delta T) equates to the heat energy transferred from the evaporated solvent to the condenser and is proportional to the flow rate of solvent vapor entering the condenser. As samples approach concentration or dryness, the change in ΔT is used to determine the auto stop point.



ROCKET SYNERGY 2

Rocket Synergy 2 Features:

- A** Removable 316 stainless steel vessel – holds up to 5 liters of sample (batch mode; Rocket Synergy 2)
- B** Removeable flask rotor will accommodate the full range of sample handling solutions including tubes, flasks and SampleGenie
- C** Auto-draining frost-free solvent condenser, collects all solvents as liquids; plastic coated glass for safety and visibility
- D** Easy to use controls; select the method for the solvents to be evaporated, set the maximum safe temperature and start
- E** USB upload of new methods and software and download of recorded data
- F** Waste solvent drains
- G** Strobe viewing window and strobe controls enable monitoring of the progress of evaporation, without stopping to open the lid; each flask may be viewed separately, in real time
- H** High power heaters with temperature control for outer chamber
- I** Glass evaporation/SampleGenie flasks
- J** Deionised water in sump – used to make low temperature, low pressure steam for efficient high speed evaporation
- K** Direct drive motor for high rotational speeds of 500 x gravity or more, to control boiling and help eliminate bumping and foaming
- L** Inner chamber lid separates the outer steam environment from the samples
- M** Outer chamber lid
- N** Low temperature, low pressure steam fills the outer chamber and heats the vessel/flasks directly

Flexible Sample Holder Options

1 Evaporation Flasks

For drying or concentrating up to 450 ml solvent.

- 450 ml volume
- Dried sample is re-dissolved and removed using a pipette

2 250 ml SampleGenie™

For drying the sample directly into a range of vials from 12 mm to 28 mm diameter and up to 70 mm tall. SampleGenie™ eliminates the need for manual transfers, saving time and preventing sample handling errors.

- 250 ml volume plus vial
- Direct drying of sample into vial
- Eliminates manual transfers

3 400 ml SampleGenie™

For concentrating the sample directly into 2 ml GC autosampler vials. The vial is protected from the steam, so that only the solvent in the flask evaporates.

- Insulated vial
- Sample evaporates in the flask, not in the vial
- Eliminates manual transfers, graduated washing steps and errors

4 Puck

Enables up to 18 ASE* vials to be dried in one operation, in place of flasks.

5 Flip-Flop™

For users of ASE* vials who wish to concentrate samples and also have them presented in a GC autosampler vial. It consists of a special double-ended tube with SampleGenie™ adaptor and 2 ml GC vial.

- Works in combination with the Puck to enable direct concentration into a 2 ml GC vial

6 250 ml Evaporation Bottles

Ideal for drying and storing samples.

- 250 ml volume



Specifications

Evaporator

Maximum rotor speed	1760 rpm (flask rotor) or 1530 rpm (bowl rotor)
Flask rotor capacity	6 x 400 ml
Bowl rotor capacity	5 litres
Nominal sample load g force	500 g
Temperature control range	30 °C to 60 °C
Dimensions (W x D x H) ¹	735 x 640 x 752 mm
Weight (approx.)	75 kg

Vacuum Pump (Integral)

Type	Diaphragm pump
Ultimate system vacuum	< 3mbar

Condenser (Integral)

Type	Aluminium water jacket
Minimum coolant temp.	-15 °C
Required coolant flow rate	1.5 ± 0.5 litres/minute
Max. coolant inlet pressure	30 psi (2 bar g)

Inert Gas Supply (IGP option only)

Maximum pressure	1.5 bar g (2.5 bar abs.)
Minimum pressure	1 bar g (2 bar abs.)
Flow rate (nominal)	30 litres/minute
Hose length	2.5 m
Connector type	3/8" BSP female

Emissions

Noise (@ 1 metre)	63 dB(A)
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Re-Circulating Chiller (Remote)

Coolant	50% mix water and mono-ethylene glycol
Dimensions (W x D x H)	320 x 500 x 600 mm
Weight	48 kg
Length of coolant hoses	2 m
Min/Max coolant temp	-20 °C to +40 °C

Electrical Supply

	230V 50Hz
	220V 60Hz
	120V 60Hz
	100V 50Hz
	100V 60Hz
Max supply input	1500 A

Storage/Transportation Environment

Ambient temperature	0 °C to 40 °C ²
Relative humidity	10-80% non-condensing

Operational Environment

Ambient temperature	15 °C to 30 °C
Relative humidity	10-80% non-condensing
Altitude	Sea-level to 1600 m
Min. ventilation air-gap	75 mm
Ingress protection rating	IP 20
Exhaust hose (supplied)	6 mm ID / 8 mm OD
Installation environment	Indoor only. Static-dissipative laboratory or similar

¹ Dimensions include allowance for lid opening, but do not allow for cable & hose connections

² -10 °C permissible during transport

Recirculating Chiller

A powerful recirculating chiller is available for the Rocket Synergy 2 evaporation system.

The system can control the chiller via an RS232 link, thereby providing improved solvent recovery and better drying of samples compared with using a static cooled supply.

A connection kit with insulated pipe work is available to accompany the chiller.

