Rocket Evaporator

including concentration options

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Make time for science with the Rocket

The Rocket™ Evaporator is a revolutionary solvent evaporator for use in laboratories seeking to spend minimal time and effort to process multiple samples for analysis.

Dries or concentrates up to six 450 mL flasks, or 18 ASE® tubes unattended.

Developed as a result of users' demands for an evaporator that could quickly process larger volumes of solvent in parallel and without supervision, the Rocket Evaporator and can dry or concentrate up to six 450 mL flasks, or 18 ASE® tubes. This enables the user to focus on other tasks, confident that the Rocket will achieve perfect, reproducible results every time.

The Rocket Evaporator is equipped with the advanced performance features that Dionex users expect, such as effective bumping and cross-contamination protection, precise temperature regulation, and easy-to-use controls. A two-stage cold trap is built into the Rocket Evaporator, providing high levels of solvent recovery, even with volatile organic solvents. The cold trap auto-drains under the control of the evaporator to ensure that optimal solvent recovery is maintained, no matter what mix of solvents is being used.

Trials prove that the Rocket's fast, unattended operation significantly improves laboratory productivity.

Why spend time on evaporation when it can be used for science?

- **Five times faster than conventional intelligent evaporators**
- **Perfect results without monitoring or supervision**
- **Unique high energy sample heating**
- **Precise sample temperature control**
- **Genevac Dri-Pure® cross contamination protection**
- **Simple controls with intelligent software**
- **Easier to use than a rotary evaporator**

Inside the Rocket

The Rocket Evaporator uses a patented new technology that works like this:

Samples are loaded into the rotor, spun, and placed under vacuum (point B). Pulling a vacuum on the samples causes the solvent(s) to boil at a low temperature, which is proportional to the pressure. Dri-Pure technology prevents any bumping and cross contamination.

To achieve fast evaporation and precise temperature control, low temperature, low pressure steam is used to heat the samples directly. The steam condenses on the flasks/tubes, which are cold due to the solvent(s) boiling inside them. Condensate is thrown off the spinning flask, where it is recycled and boiled again to make more steam.

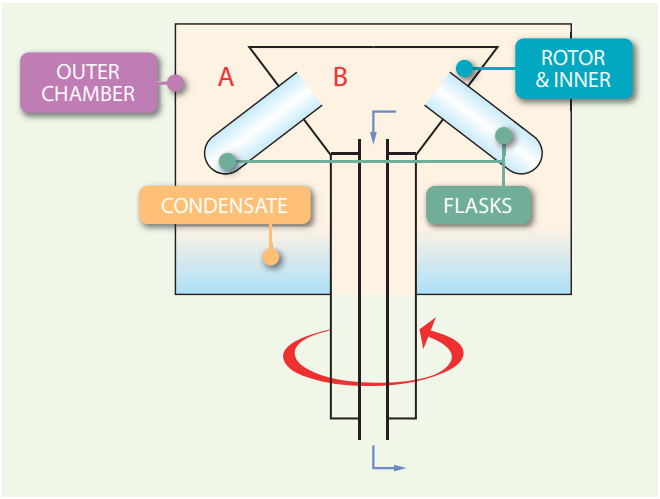
Steam temperature is controlled in two ways: 1) The pressure in the outer chamber (at point A) is set to boil water at the desired temperature, while 2) The temperature of the outer chamber is precisely controlled at or below the set temperature.

To keep the two vacuum environments separate and to ensure that steam does not enter the samples, each tube or flask slides effortlessly into the rotor, and the action of spinning the rotor firmly clamps it in place.

Controls

The controls of the Rocket Evaporator are easy to use: highlight the desired evaporation or concentration method using the right hand knob, and start. The left hand knob activates the (optional) on-board strobe. Rotating the strobe knob adjusts the strobe frequency and allows each of the six positions to be viewed separately in real time.

The software controlling the evaporation process can be optimized for each customer application and new methods created to enhance performance, usually in partnership with your local Dionex representative. Further details of the high analyte recoveries possible using Rocket methodology are available at www.dionex.com/rocketevaporator. New methods are supplied by email and uploaded using a USB key. Data is downloaded in the same way.



Choice of formats for the best results

The Rocket Evaporator can be used either to dry samples completely, or to concentrate them to a small volume. To help achieve the best results in the desired sample format, there are several options, described below:

1 Evaporation Flasks; 450 mL volume
For drying or concentrating samples. When drying, samples must be re-dissolved then removed via pipette.

2 SampleGenie™ Flasks; 250 mL (plus vial)
For vials from 12 mm to 28 mm diameter and up to 70 mm in height. The SampleGenie system allows drying of the sample directly into the storage vial.

3 SampleGenie for GC Vials
Specifically for concentrating into GC autosampler vials, this special version of SampleGenie insulates the vial so that only the solvent in the flask evaporates, leaving a small volume in the vial.

4 Puck for ASE® Tubes
The Puck insert replaces the flasks and allows up to 18 ASE tubes to be evaporated at one time.

5 Flip-Flop system
Samples are collected directly from the extraction system in the special double-ended tube. A SampleGenie adaptor with GC vial is then fitted. The tube is flipped over and placed into the Puck in the Rocket Evaporator and the cap removed. The samples are then concentrated directly into the GC vial.

The genius of SampleGenie
SampleGenie enables samples to be concentrated or dried directly into the storage or autosampler vial without the need for manual transfers or graduated washing steps. SampleGenie saves time and eliminates handling errors. In effect, it achieves sample transfer automation, but without the robotics.


Six-position rotor
Built-in solvent-resistant vacuum pump
Plastic coated glass cold trap
Easy to use controls
USB upload/download of methods and data
Real-time strobe viewing window
Steam chamber
Automatic cold trap drain

Mechanical data

Maximum speed	1800 rpm
Maximum G-force	700 g
Drive system	Direct drive
Maximum Sample load	6 × 450 mL
Maximum imbalance	50 g

Vacuum system

Pressure display	0–1200 mbar
Pressure control	Automatic, 3 mbar to atmosphere
System ultimate vacuum	3 mbar
Bumping protection	Dri-Pure

Temperature and control

Control range	Ambient +5 °C to 60 °C
Control accuracy	±1 °C
Temperature sensing	Thermistor
Display range	0 °C to 60 °C
End of method	Time or automatic
Visualisation	Built-in strobe (optional)

Solvent compatibility

Boiling point range	40 °C to 160 °C at ambient
Includes	Alcohols, DCM/methylene chloride, DMF, ethyl acetate, water, TFA
HCl	Not compatible
Di-ethyl ether	Only with Inert Gas Purge option

Dimensions

Width × Depth × Height	720 × 640 × 530 mm
Headspace required	755 mm (lid open)
Weight	75 kg

Services

UK & Europe	230 V (±10%), 50 Hz, 13 A
USA	120 V (±10%), 60 Hz, 15 A
Japan	100 V (±10%), 50 Hz or 60 Hz, 15 A
USB A	For data upload/download
Deionized water	50 K Ohm to 1 M Ohm, approximately 100 mL per day

Safety

Conforms to UL 61010-A-1:2002 & BS EN 61010-1:2001 for laboratory equipment.
CE certified.

Cold trap cooling requirement

Temp range	–20 °C to +10 °C dependent upon application
Heat removal	700 W at +10 °C (max)
Flow rate	1 to 2 L/min
Pressure	1 (min) to 7 bar (max) static
Connections	8 mm nylon hardwall tube (chiller) ¼ inch (6.5 mm) hose barb for cold water connection (standard) Connection hoses not supplied
RS232 connection	Provided for Dionex supplied chiller

Recirculating chiller

A powerful, compact recirculating chiller is available with the Rocket evaporation system, which is specified to complement the evaporator. The evaporation system can be connected to the chiller by RS232 link, enabling the evaporator to control the chiller, which can provide improved solvent recovery and better drying of samples than by using a static cooled supply. A connection kit with insulated pipe work is available for this chiller.

Specification

Width × Depth × Height	320 × 500 × 600 mm
Weight	48 kg
Cooling Power	500 W at 10 °C
Electrical connections	As evaporator

Maintenance

All seals are user replaceable. Easy access is provided to the pump, which can be maintained by trained users.

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