



**EZ-2 personal solvent evaporator**

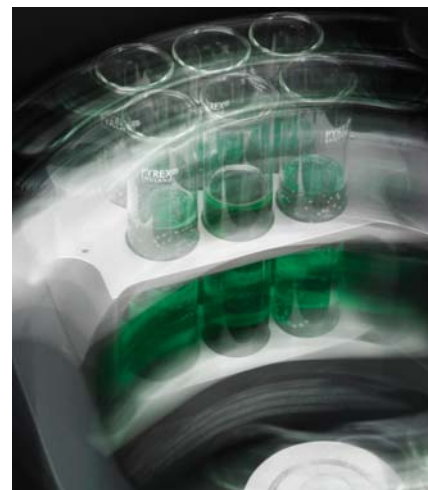
NEW ELITE • INCLUDING THE



- All-in-one compact design saves valuable bench space
- Easier to use than a rotary evaporator
- Smart evaporation software gives great results every time
- Advanced technology offers total sample protection
- Versatile design accommodates a wide choice of sample types
- Easy maintenance contributes to low cost of ownership

## *Everything a modern evaporator should be – and more*

The EZ-2 series draws fully on the expertise of Genevac's engineers and the experiences of many scientists in the laboratory. Using advanced evaporation science, it has been designed specifically for solvent removal in life science research, be that concentration, drying or lyophilisation of samples. Genevac's long experience in vacuum engineering has resulted in the creation of a compact concentrator combining great performance, ease of use and compatibility with all commonly used solvents and acids.



The innovative design of the EZ-2 delivers many advantages to life science laboratories with solvent evaporation and sample preparation or concentration needs.

At the heart of the evaporator are a range of robust, solvent resistant, oil free vacuum pumps and the high efficiency, defrost-free SpeedTrap™, which traps all solvents as liquids – even water. Automatic draining of the SpeedTrap™ enhances solvent recovery further, and makes fast lyophilisation of HPLC fractions possible with the EZ-2 Elite.

To enable all users to achieve excellent results, the EZ-2 has been made easier to use than a rotary evaporator. In addition to accommodating many more samples, it can operate entirely unattended. Set the temperature, select the solvent type, and press Start. The EZ-2 does the rest for you, controlling the vacuum conditions, gradient and heater. Once the samples are dry, or the concentration end point is reached, the system can stop automatically.

Genevac's patented Dri-Pure® sample protection system prevents cross-contamination and sample loss due to bumping and is fitted as standard on the EZ-2. Methods on the EZ-2 can be optimised in collaboration with your local Genevac representative to help you achieve even better results. There is no need for special training – you simply load, set and walk away.

## *EZ-2 is simply the most compact high performance sample concentrator available*



Following the three steps shown here enables a first time user to set a safe temperature and select the optimum evaporation programme.

Methods names are displayed on the screen. Working with your local Genevac representative, new methods can be quickly and easily created and optimised in the laboratory to further enhance performance (EZ-2 Envi, Plus and Elite). For further details, go to [www.genevac.com](http://www.genevac.com).

Operating the EZ-2 is as simple as 1, 2, 3. Load your samples and close the lid. Then:

- 1 Select sample protection temperature
- 2 Select solvent type/method
- 3 Press Start

... and walk away while the EZ-2 dries/concentrates or lyophilises your samples safely, smoothly and securely.

Dri-Pure® activates automatically when required and the system stops when the samples are dry / concentrated. Alternatively, a timed method may be set. The Pause button enables samples to be checked without disturbing the automatic programme. For safety, the lid only opens when the rotor has stopped. Out-of-balance and thermal cut outs are standard.

### The revolutionary SpeedTrap™



The EZ-2 is fitted with an enhanced version of Genevac's revolutionary SpeedTrap. This highly chemically resistant cold trap is designed to condense solvents, in order to protect the environment, and help to speed evaporation. The SpeedTrap has a nominal operating temperature of -35°C (minimum temperature -50°C) to enable it to catch the most volatile solvents. However, it does not freeze the condensed solvent, even when working with water. Solvents collect in the insulated, plastic coated glass vessel, enabling the user to check the progress of evaporation and determine when the trap should be emptied. The glass vessel is removed by a quarter turn, allowing the solvent to be poured



directly into the waste container. Replace the vessel with a quarter turn, and the EZ-2 is ready to run again.

### Vacuum pumps

Genevac only uses oil free vacuum pumps; there are two types depending on the duty and level of vacuum required. The ILMVAC pump with PTFE diaphragms and fittings to resist attack by even the most aggressive solvents is used in the EZ-2 Standard, Envi and Plus. These pumps are designed for long life, quiet running and high performance. Should the pump ever need attention, it can be easily removed for inspection or replacement. The Genevac model of the Scroll pump is used on the EZ-2 Elite. This pump delivers deeper vacuum than the diaphragm pump and is optimised for use with a wide range of solvents and acids.



Method	Details	S	E	P	T
Very Low BP	Use for DCM, THF, Chloroform	✓	✓	✓	✓
Very Low BP mix		✓	✓	✓	✓
Low BP		✓	✓	✓	✓
Low BP mix		✓	✓	✓	✓
Medium BP				✓	
Medium Low BP mix				✓	
High BP					✓
High Low BP mix					✓
Aqueous		✓	✓	✓	✓
Aqueous Ammonia	NH <sub>3</sub> or HCl when dissolved in water or MeOH	✓		✓	✓
HPLC Fractions		✓		✓	✓
HPLC Lyo					✓
Centrifuge only		✓	✓	✓	
Envi method 1	2 ramps for DCM volatile mixtures		✓		
Envi method 2	EtAc with solvent keep		✓		

S = EZ-2 Standard E = EZ-2 Envi P = EZ-2 Plus T = EZ-2 Elite



A low-cost option is available for the EZ-2 Standard, Plus and Elite for use with concentrated hydrochloric acid. Key elements of the system are engineered in Hastelloy®, glass or PTFE, to provide full protection against these acids. This 'HCl option' must be specified when ordering, as it cannot be retrofitted. The EZ-2 Plus can also be used for evaporation of concentrated Nitric Acid – a task which cannot be performed on any other EZ-2.



When working with highly explosive solvents, such as diethyl ether or pentane, the Inert Gas Purge (IGP) system is mandatory. The IGP flushes all the air out of the system before the evaporation process starts, replacing it with an inert gas – nitrogen or argon. Additionally, the IGP system fills the system with inert gas when the evaporator stops, and can be used to keep sensitive samples under a gas blanket until removed by the operator. Available on all models.

## Choosing the right model

There are four EZ-2 models, Standard, Envi, Plus and Elite, each suited to a different application:



### EZ-2 Standard

Suitable for water and volatile solvents with boiling point up to 120°C



### EZ-2 Envi

Suitable for volatile solvents, where specialised methods are required to prepare samples for analysis.



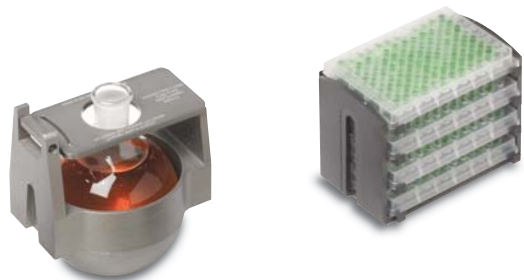
### EZ-2 Plus

Recommended for more difficult solvents with higher boiling points, as it is equipped with chamber heating and a more powerful pump. Suitable for water and HPLC fractions.



### EZ-2 Elite

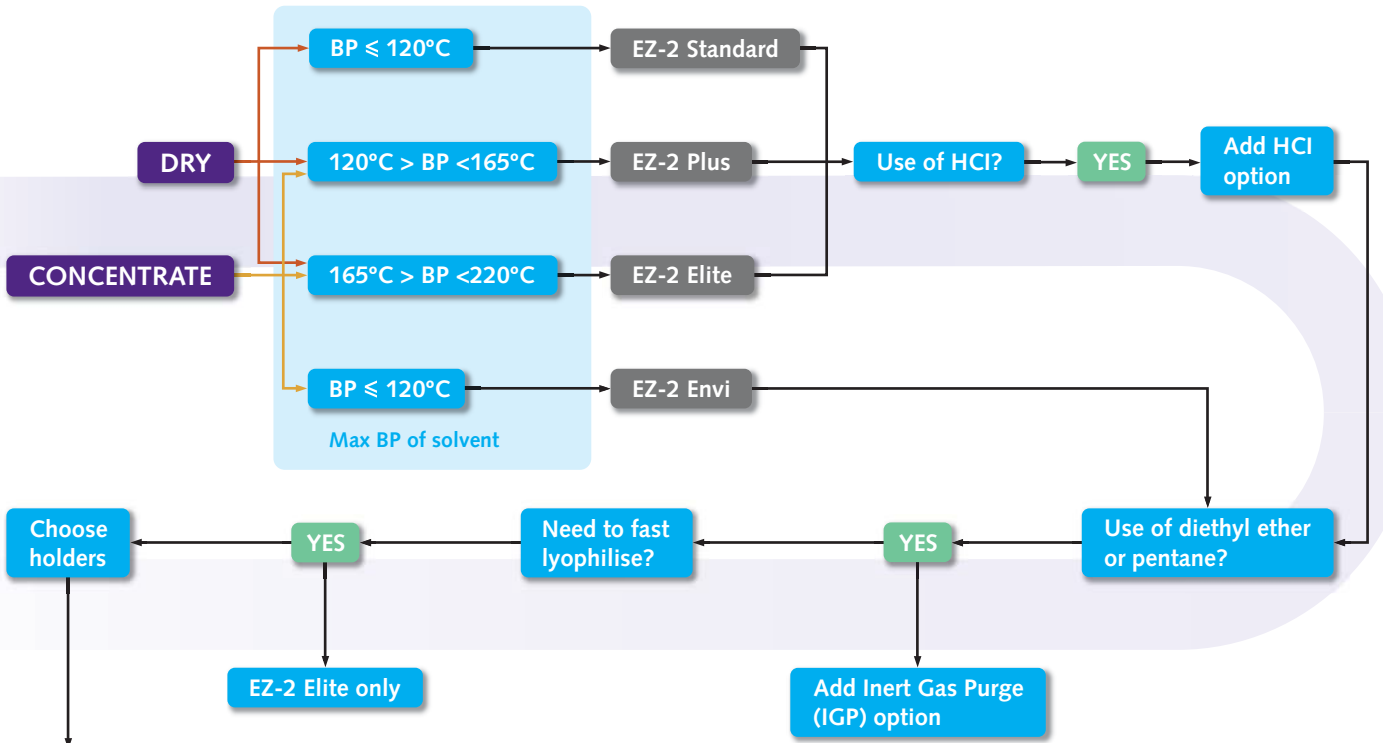
For the highest boiling point solvents, enhanced solvent recovery, improved final drying of stubborn samples and fast lyophilisation of HPLC fractions.



CONDENSER TRAP AND PUMP ARE BUILT-IN –



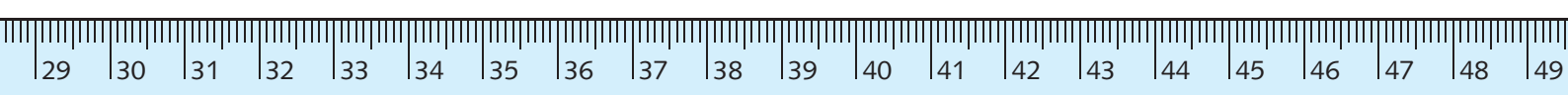
# Choose your EZ-2



Please visit [www.genevac.com](http://www.genevac.com) for an accessories brochure listing the full range of sample holders. Custom sample holders can be made upon request.



**YET THE EZ-2 STILL SAVES PRECIOUS BENCH SPACE**



## Tough assignment? Send in the Elite

### EZ-2 Elite SpeedTrap

The SpeedTrap on the EZ-2 Elite works just like the other EZ-2 models but with the added benefit of automatic defrost and drain (AD&D) technology. The EZ-2 controls the SpeedTrap and the new Elite solvent collection vessel to enable mid-method defrosting and draining. Controlled draining enables very high levels of solvent recovery to be achieved even when evaporating mixtures of solvents with widely varying boiling points, e.g. DMSO and methanol. On the EZ-2 Elite, the methanol can be collected, drained to the solvent waste and then the DMSO evaporated. Similarly, when working with HPLC fractions, higher levels of dryness can be achieved by draining the volatile organic solvent before tackling the water, allowing full vacuum to be achieved during final drying. With the EZ-2 Elite SpeedTrap jar, the Genevac LyoSpeed™ method can now be used.



The Scroll pump used with the EZ-2 Elite delivers deeper vacuum than the diaphragm pumps found in the EZ-2 Standard, Envi and Plus.

### High boiling point solvents

>165°C

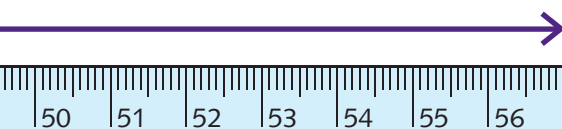
Solvents with a boiling point above

165°C may be dried on the EZ-2 Elite. The use of the Genevac Scroll pump and the internal enhancements to heat vapour ducts and system components enable the evaporation of solvents like DMSO and NMP, which are not permitted in the other EZ-2 models. These enhancements cause such difficult solvents only to condense in the SpeedTrap, and not anywhere else! Solvents with a boiling point below 165°C and above 120°C must be used in the EZ-2 Plus or Elite, but not in the EZ-2 Standard or Envi.

### Fast lyophilisation

**LyoSpeed**

The Genevac LyoSpeed™ method, or fast lyophilisation, was developed on the Genevac HT series evaporators for fast lyophilisation of HPLC fractions, mainly water and acetonitrile. The method controls the boiling of the volatile organic solvent using Dri-Pure, removing it from the samples. Some of the water is then evaporated from the samples and the remaining 3ml to 5ml of water is lyophilised to achieve a dry powder. Dry powders can be easier to weigh and redissolve than a dry film, and so are preferred for some applications.



Actual width of the EZ-2  
(excluding Catchpot)

# The most compact high performance sample concentrator



Optimised methods provide 'walk away' automation with confidence

## EZ-2 Standard, Plus and Envi



- High efficiency SpeedTrap which collects all solvents as a liquid – even water – so no defrosting is necessary
- Insulated and plastic coated solvent resistant glass collecting vessel allows condensed solvent levels to be easily seen
- Built-in fume extraction path

## EZ-2 Elite



- Auto-draining condenser jar with infinite capacity
- Solvent drain point

Interlocked lid only opens when the rotor has stopped

Polycarbonate reinforced glass window in lid

Easy access for routine maintenance

- Dri-Pure® protects against sample 'bumping' while the SampleShield system prevents overheating
- Compatible with most commonly used solvents and acids, including TFA with low-cost option for use with hydrochloric acid and nitric acid
- High capacity H-shaped rotor design takes flasks, tubes, vials, reaction blocks, microtitre plates and SampleGenie (see Accessories brochure)
- Ultra-compact design, with integrated components, saves precious bench space
- Quiet operation from precision direct drive rotor with out-of-balance and thermal cut-outs as standard
- Standard, Plus and Envi models have integrated high efficiency solvent resistant diaphragm pumps. Elite has external dry scroll pump

## Mechanical Data

	Standard / Envi	Plus	Elite
Max RPM	2000	2000	2000
Max G	500	500	500
Drive system	Direct	Direct	Direct
Max Sample load (including swings)	1.5 kg	1.5 kg	1.5 kg
Max. imbalance	40 g	40 g	40 g
IR lamps (number)	1	1	1
<b>Vacuum System</b>			
Pressure display	0-1200 mbar	0-1200 mbar	0-1200 mbar
Pressure control	automatic, 10 mbar - atmosphere	automatic, 2 mbar - atmosphere	automatic, 0.5 mbar - atmosphere
Bump protection	Yes	Yes	Yes
System ultimate pressure	10 mbar	2 mbar	0.5 mbar
Auto vacuum vent valve	Yes	Yes	Yes
<b>Temperature controls</b>			
Temperature control range	Ambient to 80°C	Ambient to 80°C	Ambient to 80°C
Temperature control accuracy	+/- 2.5°C	+/- 2.5°C	+/- 2.5°C
Temperature sensing	by SampleShield infra red pyrometer	by SampleShield infra red pyrometer	by SampleShield infra red pyrometer
Temperature display range	0° to + 80°C	0° to + 80°C	0° to + 80°C
Chamber temp. range	Ambient (Ambient to 60°C)	Ambient (Ambient to 60°C)	Ambient (Ambient to 60°C)
End of run determination	Automatic	Automatic	Automatic
<b>Condenser Data</b>			
Condenser temperature	Minimum -50°C; Nominal operating temperature -35°C	Minimum -50°C; Nominal operating temperature -35°C	Minimum -50°C; Nominal operating temperature -35°C
Condenser power	70 Watts max load	70 Watts max load	70 Watts max load
Useable capacity - vacuum pot	1 litre	1 litre	∞
Materials - condenser pots	Vacuum insulated Borosilicate glass	Vacuum insulated Borosilicate glass	Vacuum insulated Borosilicate glass
Condenser coils	FEP coated	FEP coated	FEP coated
<b>Solvent compatibility:</b>			
Boiling points	Up to 120°C	Up to 165°C	Up to 220°C
Including: alcohols, DCM/methylene chloride, ethyl acetate, water, TFA, DMSO	Yes	Yes	Yes
DMF	No	No	Yes
HCl	No	Yes	Yes
HNO <sub>3</sub>	EZ-2 standard, only with HCl option	Only with HCl option	Only with HCl option
Diethyl ether	No	Only with HCl option	No
	Only with inert purge option	Only with inert purge option	Only with inert purge option
<b>Dimensions</b>			
Width (max)	597mm (570mm without catchpot)	597mm (570mm without catchpot)	570mm (without pump)
Depth (max)	645 mm	645 mm	645 mm
Height (max)	700mm	700mm	700mm
Weight	82 kg	88 kg	108 kg

### Services

Power supply – 120V (±10%), 60 Hz, 15A (USA), 230V (±10%), 50 Hz, 13A (UK + Europe), 100V (±10%), 50 Hz, 15A (Japan), 100V (±10%), 60 Hz, 15A (Japan).

EZ-2 Standard, Envi and Plus require a single power supply at the above rating.

EZ-2 Elite requires two power supplies at the above rating.

### Safety

Conforms to EN 61010-2-020:1995 for centrifuge safety.



**Genevac Ltd** Farthing Road Ipswich UK IP1 5AP  
Tel +44 (0)1473 240000 Fax +44 (0)1473 742987

**Genevac Inc.** 3538 Main Street Stone Ridge NY 12484 USA  
Tel (1) 845 267 2211 Fax (1) 845 267 2212

[www.genevac.com](http://www.genevac.com)