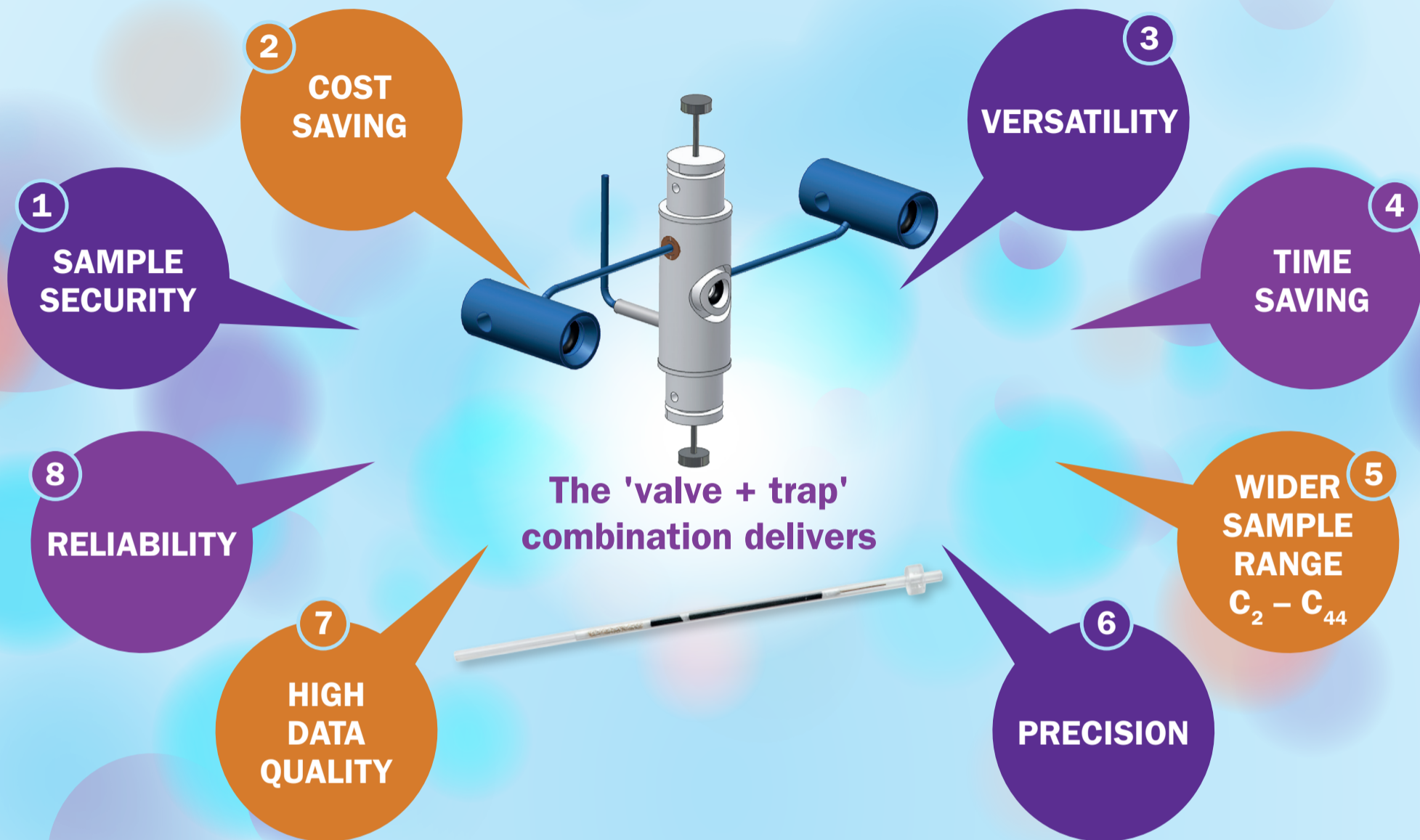


# THERMAL DESORPTION WITHOUT COMPROMISE

## VALVE + FOCUSING TRAP = THE WINNING COMBINATION

The proprietary heated valve inside Markes' thermal desorption (TD) instruments was designed specifically for analytical TD and has proven its exceptional reliability and performance in thousands of TD installations.

Together, the valve and trap confer the following features and benefits:



All Markes International's TD instruments, such as our flagship TD100-xr™ and scalable UNITY-xr™ and systems, use the power of trap-based focusing to concentrate samples into the small volumes needed to ensure highly sensitive GC-MS analysis.

ANALYTICAL CAPABILITY	MARKES' TD SYSTEMS	NON-MARKES TD SYSTEMS	
		ROTARY VALVE	FORWARD FLOW
<b>1 Re-collection</b> – Splitting the sample flow during both the inlet and outlet desorption stages and collecting the unanalysed portion onto a clean sorbent tube overcomes the 'one-shot' drawback of older TD systems and allows your valuable samples to be secured and quantitatively re-analysed.	✓	✗	✗
<b>2 Cryogen-free operation</b> – The electrically-operated Peltier cooler is used to reduce the focusing trap temperature. These have far lower running costs than complicated and high-maintenance liquid cryogen systems.	✓	✓	✗
<b>3 Automated switching between sample types</b> – It's easy to sequence between tubes, canisters, and on-line samples on a single TD-GC instrument. Laboratories then have the option to perform comprehensive VOC and SVOC analyses.	✓	✗	✗
<b>4 Overlap mode</b> – This enables your sample to be prepared on the focusing trap whilst your previous sample is still being run on the gas chromatograph.	✓	✓	✗
<b>5 Backflushing</b> – Trap desorption in the reverse direction enables use of multiple sorbent beds, expanding the range of compounds that can be preconcentrated and analysed from a single sample.	✓	✓	✗
<b>6 Internal standard addition</b> – Automated addition of an internal standard to the focusing trap, or to a tube, during analysis enhances the quality of your data.	✓	✓	✗
<b>7 Leak testing</b> – Automatic leak tests carried out before analysis of each sample ensure confidence in your data quality.	✓	✓	✗
<b>8 Dry-purge or pre-purge</b> – These steps automatically remove water and air from the sample before analysis, avoiding the risk of interference in the gas chromatograph, and extending the lifetimes of your column and detector.	✓	✓	✗