

GreyScan's ETD-100L



> The proven technology of the ETD-100 with the added capability of a liquid injector

> PRODUCT OVERVIEW

GreyScan's ETD-100 is the world's first automated explosive trace detection (ETD) device capable of detecting the inorganic anions (nitrate, chlorate, perchlorate) commonly found in homemade explosives with a high degree of sensitivity and in under a minute.

Independently tested by the Fraunhofer Institute (Germany) and industry leading ETD manufacturers, GreyScan® sets the global standard for inorganic ETD and extends the current security capabilities by complementing commercially available Ion Mobility Spectrometry (IMS) explosive trace detectors.

GreyScan has now further elevated the proven technology of the ETD-100 with the introduction of a liquid injector option, the ETD-100L.

> APPLICATIONS

The ETD-100L is designed for customers who need to work beyond the limits of conventional laboratory instrumentation.

This includes Forensic Laboratories, as well as other laboratory applications where the ability to accurately analyse a liquid sample in less than a minute for the target analytes is required, and/or where a rapid, semi-quantitative determination is needed.



> TECHNOLOGY PERFORMANCE

GreyScan brings laboratory-grade capability to the field in a user-friendly format. Our innovative and proven portable core CZE technology provides rapid, accurate and easy to use decision making power at the point of need.

The ETD-100L is a manually operated liquid injector system designed for forensic & other laboratory applications. It can be used as a stand-alone unit, or as a quick at-site field triage unit enabling faster, time-critical decision making.

The liquid injector allows for an aliquot to be taken from a stock solution, retaining the remainder of the stock solution for further testing or as a retention sample where required. Furthermore, the accuracy and precision of the ETD-100L liquid injector allows for a semi-quantitative result when a sample response is compared to the response of a standard solution.

The ETD-100L provides high accuracy, selectivity and sensitivity, providing a new level in performance, robustness and ease-of-use for the most challenging of trace analyses.

For example:

Linearity	R ²		
	Nitrate	Chlorate	Perchlorate
0.5 ppm to 3ppm	0.998	0.999	0.997

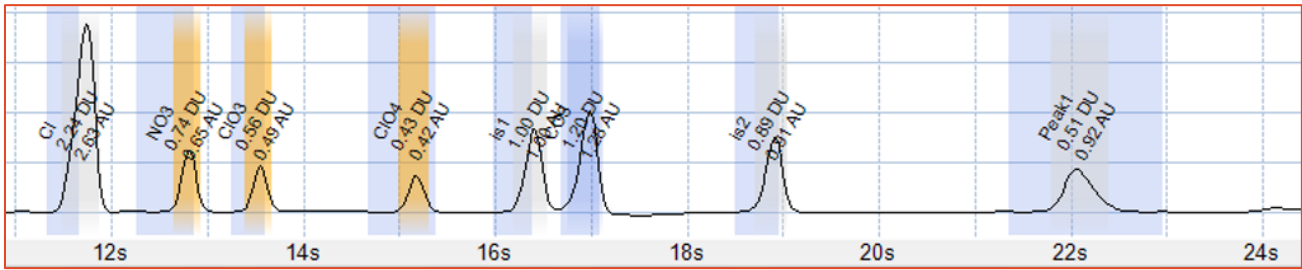
R² ≥ 0.995 (accepted correlation coefficient limit for quantitative analysis)

Repeatability

Post-blast sample	SD (n = 6)		
	Nitrate	Chlorate	Perchlorate
Improvised pyrotechnic mixture	0.11	0.07	0.04
Improvised chlorate & icing sugar	N/A	0.02	N/A

The ETD-100L correctly identified the target analyte with each replicate, and with excellent repeatability.

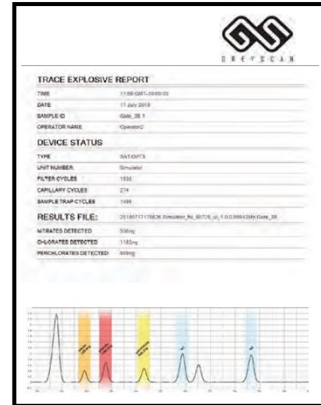




SOFTWARE CAPABILITIES

At its simplest, the ETD-100 features an intuitive touch screen operation that triggers real time data in the form of red screen/green screen audible alarms for each targeted ion, requiring minimal training for front line operators. However, the software capability also provides an expanded functionality where needed, with the ability for customers to streamline data acquisition and analysis, as well as an integrated workflow solution.

Also, GreyScan software can output data in a format that can be inputted into a LIMS system if needed.



CRITICAL CAPABILITY GAP

The GreyScan ETD-100 has been developed in response to the increasing global threat from homemade explosives based on inorganic salts (fertilizer and other compounds) with US and Australian Federal Government support.

However, in response to demand from various forensic agencies and laboratory groups, GreyScan has now added ETD-100L to its capability framework.

KEY BENEFITS & CAPABILITIES

- Able to detect homemade inorganic salt based explosives (nitrate, chlorate, perchlorate)
- Capable of analysing liquid samples
- Highly sensitive, accurate, precise and robust
- Suitable for forensic lab applications
- Designed for mobile and stationary applications
- Simple to operate
- Non-radioactive - Liquid Phase Capillary Zone Electrophoresis (CZE)
- Uses standard 23-gauge commercially available needles
- User replaceable reagent cartridge and septum
- Remote connectivity enabled (Wi-Fi or wired network)
- Detailed Electropherogram PDF report
- Battery or mains power operation

KEY TECHNICAL SPECIFICATIONS*

Connectivity	Ethernet, Wi-Fi, USB2.0
Weight	14.5kg (32.0 lbs)
Analysis time	< 1 Minute
Warm-up Time	< 15 minutes
Dimensions	(W x D x H) 48.8 x 38.6 x 22.9cm (19.20" x 15.20" x 9.00")
Operating temperature	-5°C to +40°C (23°F to 104°F)
Explosives detection	Nitrates, Chlorates, Perchlorates
Limit of detection	20-60 ng range
Power	AC: 100—240 VAC, 50-60 Hz DC:24VDC. 3.75A MAX
Reagent cartridge capacity	Approximately 1500 scans

*Specifications subject to change

GreyScan's ETD-100L is a game-changer

We bring laboratory-grade capability to the field in a user-friendly format. Our innovative and proven portable core CZE technology provides fast, accurate and easy to use decision making power at the point of need.

The ETD-100L is designed to operate within the rigours of forensic and other laboratory applications, delivering a world-first, portable ETD targeting inorganic explosives.