

# DANI Blood Alcohol Content (BAC) System

## HS Analysis of Ethanol in Blood

The determination of ethanol content in blood is one of the most important analyses in forensic toxicology.

HS-GC methods provide the most accurate test for blood alcohol content (BAC).

Blood is a very complex matrix, which includes salts, proteins, lipids and other metabolites. Currently, the headspace extraction technique is preferred due to the minimal contamination produced to the injector and column of the gas chromatograph; this technique for the determination of ethanol has been refined over time, to the extent that is now possible to perform these tests **quickly** and **accurately**.

A dual column chromatographic system, fully controlled by software and with complete chain of custody is the solution that DANI offers to the market.

**DEFENDABLE DATA**

**HIGH THROUGHPUT**

**SYSTEM'S ROBUSTNESS**

**ACCURACY OF RESULTS**

**SPECIAL PRICE**

VALID UNTIL SEPTEMBER 30, 2017

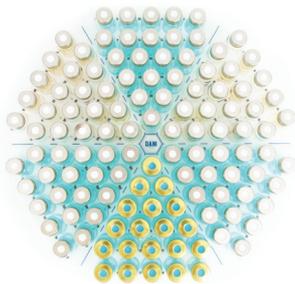
## Master SHS - GC Configuration

0305.100 012	DANI Master GC - Base Unit 240 V
0305.102 240	OPT 024M - LARGE Split Splitless Injector
0305.102 070	OPT 100M FID Flame Ionization Detector
0321.000 001	DANI Master SHS - Static Headspace Sampler - 120 vials
0321.026 001	Start-up kit for SHS
0320.000 012	CLARITY Chromatography Software Single Instrument
0305.000 001	GC Control Module for CLARITY
0305.010 001	Samplers Control Module for CLARITY
0305.046 003	LAN Connection KIT
9012.001 003	Retention Gap
9012.200 016	Press Fit Y 3-ways - fused silica
9414.118 006	GC Capillary Column DN-ALC1 30m, 0.32mm, 1.8 um
9414.118 007	GC Capillary Column DN-ALC2 30m, 0.32mm, 1.2um
1154.500 056	Standard Mixture
9291.100 004	Glass Liner for SL/IN Large [5 pcs]
2306.095 020	Ferrule 4m VGR [10 pcs]
2300.095 012	Nut F 4M SS [10 pcs]
2308.506 953	Septa SIL 16x3 [50 pcs]
1340.406 000	Wrench 6-7 mm
1250.401 002	Syringe
6310.090 061	Support for Columns
<b>OPTION</b>	
0321.014 001	Barcode Reader for Master SHS

## DEFENDABLE DATA

### The DANI instrumentation offered provides:

- Blocked access to user when instrument is under software control;
- Full feedback information to software in case of errors, malfunctions, missed samples;
- **Bar code reading capabilities** for full sample traceability (part of the chain of custody);
- Leak test performed on each single vial to proof sample integrity;
- Dual columns and dual FIDs configuration for ethanol chromatographic peak confirmation/ quantitation;



### The software Data Apex Clarity provides:

- Full control of the integrated system (headspace- gas chromatograph);
- Fully implemented electronic signature for method set-up, sequence set-up and running, data processing and reporting;
- System suitability pass/ fail reports;
- Audit trail to report any change that has been made to the stored analytical conditions;
- Data file checksum to avoid data corruption;

## HIGH THROUGHPUT

- DANI'S headspace with its **120 vials positions** and the **unlimited number of priority samples** provides the highest samples' number capacity in the market. The BAC system can be fed with samples without stopping the workflow, providing the ultimate throughput in the forensic lab.
- **Multiple cycles of SOPs can be pre-defined in a sequence** and the analyst can keep adding samples over time without virtually stopping the workflow during the day.
  - » Effective and rational disposition of the vials with full sample traceability
    - DANI's headspace allows **sampling from ANY vial in the rack**, without the need to follow a pre-defined position. The rack is divided in different segments. This allows a rational and effective disposition of the different types of samples. E.g. one segment for the specimens, one for QC standards, one for blank samples etc.
    - The **bar code allows proper confirmation and traceability** of the sample. This provides workflow flexibility and high throughput.
- DANI's headspace hosts **up to 18 vials in the secondary oven** providing overlapping of thermostating and greatly enhancing system's throughput.
- The use of a **dual column/ dual FID configuration avoids running the same specimen twice for ethanol confirmation**, literally doubling the system's throughput
- **The overall run time is less than 4 minutes** thanks to the ability to electronically control flows in the analytical columns. Since this is an isothermal analysis, column flow can be "pushed to the edge" to minimize analysis' time without affecting resolution.

## SYSTEM'S ROBUSTNESS

- The DANI systems provide **repeatable performance day in, day out**;
- Its pressure controllers are compensating for variation in atmospheric pressure, eliminating variability ;
- The devices provide **easy access to parts that might need routine inspection** like the headspace needle or the headspace rotary valve;
- The use of electronic controllers and the feedback provided by the controllers to the software, provide **instant information on the operational status** of the system;
- The Clarity software provides a **complete audit trail** and a series of error messages that help the user to understand the status of the system, holistically speaking;

## ACCURACY OF RESULTS

- The Dani system is capable to **automatically run suitability tests and provide pass/ fail reports** that are very useful to understand the status of the system and facilitate compliance adherence.
- The Dani headspace, not only uses a thermostatted loop but also allows to control pressure in the injection loop greatly enhancing the precision and the accuracy of sample amount injected. The use of electronically controlled pneumatics allows indeed obtaining high precision in the injection volume and as such, high precision in the peak area results. This is paramount to obtain **accurate (and precise) results**.
- The **analytical path is fully inert** (using coated stainless steel) to avoid secondary interactions with specific solvents (typically the more polar solvents) that might affect precision and accuracy.
- The headspace performs a **leak check test** before doing the injection, to add further confidence in results.