

## Certificate of Analysis

### ESI + APCI LC Demo Sample

**Agilent Part Number:** G1978-85000      **Sample Lot Number:** 0006684829  
**Storage Condition:** Room Temperature

### Concentration: Weight to Volume and Purity/Grade

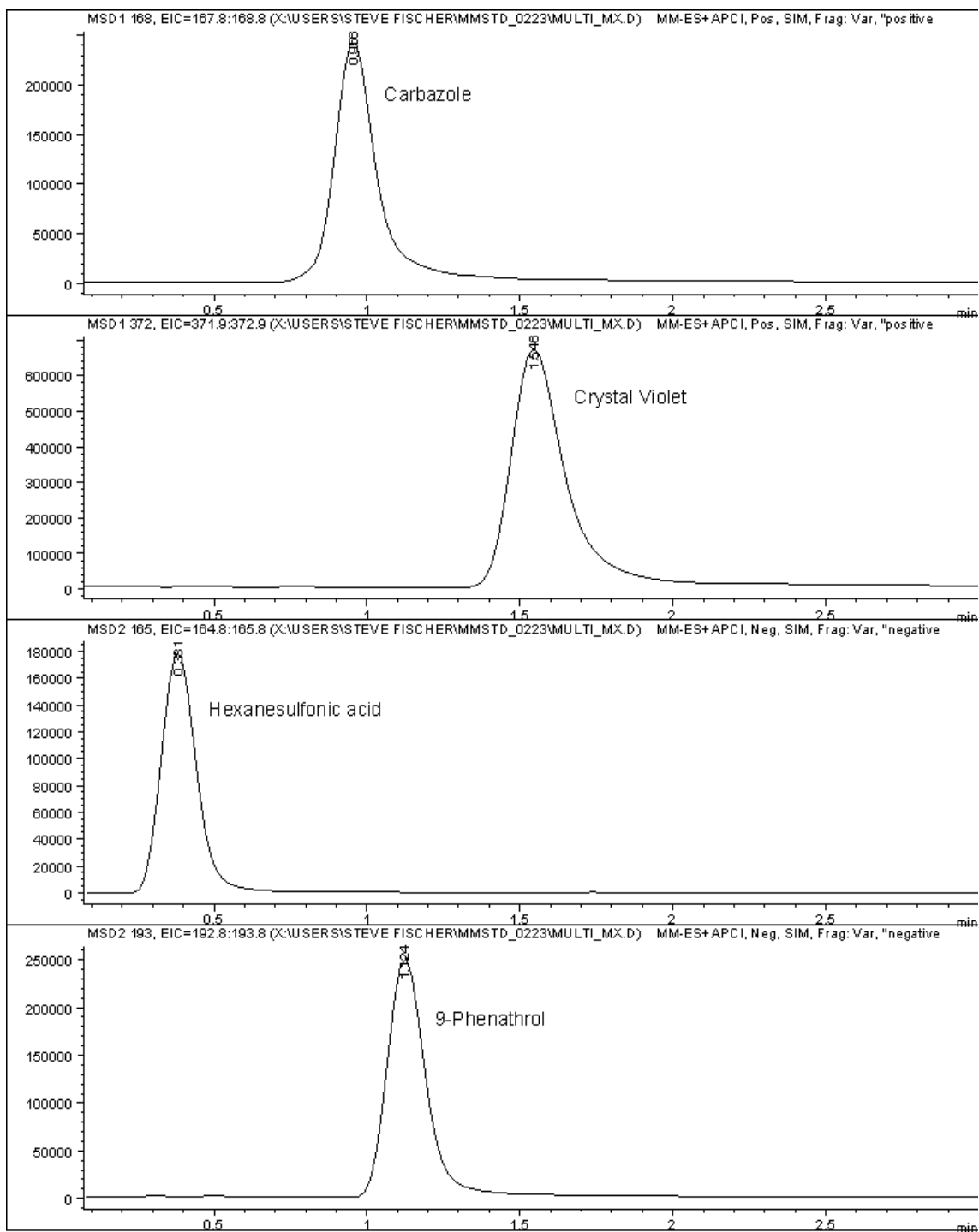
| Neat Material                                             | Gravimetric Conc. | Purity and/or Grade              |
|-----------------------------------------------------------|-------------------|----------------------------------|
| Crystal Violet (CAS NO.: 548-62-9)                        | 0.330 ng/ul       | 98.4% dye content                |
| Carbazole (CAS NO.: 86-74-8)                              | 150.1 ng/ul       | 99.7% HPLC                       |
| 1-Hexanesulfonic acid sodium salt<br>(CAS NO.: 2832-45-3) | 5.01 ng/ul        | 99.2% Carbon, Elemental Analysis |
| 9-Phenanthrol (CAS NO.: 484-17-3)                         | 150.2 ng/ul       | 93.5% HPLC                       |

| Solvent Composition            | Concentration | Neat Material<br>Purity and/or Grade  |
|--------------------------------|---------------|---------------------------------------|
| DI-Water (CAS NO.: 7732-18-5)  | 40.0%         | De-ionized                            |
| Methanol (CAS NO.: 67-56-1)    | 59.0%         | Capillary High Resolution Grade 99.9% |
| Acetic Acid (CAS No.: 64-19-7) | 1.0%          | Reagent Plus >/ 99.0%                 |

### Traceability:

This standard has been produced gravimetrically using ISO9001 quality procedures. NIST traceable weights are used to verify balance calibration with the preparation of each lot. Concentration of analyte in solution is ug/ml +/- 0.5%, uncertainty based upon balance and Class A volumetric glassware.

## Analytical Spectrum:



### NOTE:

- Carbazole ionizes predominantly in the positive APCI mode.
- Crystal violet ionizes only in the positive ESI mode.
- 1-Hexanesulfonic acid sodium salt ionizes only in the negative ESI mode.
- 9-Phenanthrol ionizes predominantly in the negative APCI mode.

**Agilent 1100 Series LC System:**

G1354A Quaternary Pump (incl. degasser)

G1313A Automatic Liquid Sampler (ALS)

G1956B LC/MSD SL

G1978A Multimode APCI+ESI source

Column: Zorbax SB-C18 Rapid Resolution Cartridge 2.1 x 30 mm, 3.5  $\mu$ m

Column Temperature: Ambient

Flow Rate: 0.4 ml/min

Mobile Phase: 65 methanol : 35 Water : 0.2 acetic acid

Ionization Mode: MM-APCI+ESI, pos/neg switching

Nebulizer: 60 psi

Drying gas flow: 5 L/min

Drying gas temperature: 350 C

Vaporizer: 200 C

Charging Voltage: 2000

Capillary Voltage: 1000

SIM Ion positive: 168.1 , 372.2

SIM Ion negative: 165.1, 193.1

**Date of Manufacture:** 23 June 2022

**Date of Expiration:** 31 July 2023



Monica Bourgeois

QMS Representative