



EXTRACTION OF TEAR GAS

Chloroacetophenone (CS), o-Chlorobenzylidenemalononitrile (CN), and trans-8-methyl-N-vanillyl-6-nonenamide (OC)

From Cloth for GC/MS Analysis Using:

200 mg CLEAN SCREEN[®] EXTRACTION COLUMN

Part #: ZSDAU020 without Tips or ZCDAU020 with CLEAN-THRU[®] Tips

1. PREPARE SAMPLE:

If suspected tear gas is on clothing cut out a portion of the sprayed area and a “negative” control sample. Extract each into hexane. For canisters of suspected tear gas, spray onto a Kimwipe[®] and extract the sprayed area and a negative control into hexane.

2. CONDITION CLEAN SCREEN[®] EXTRACTION COLUMN:

1 x 3 mL CH₃OH.

1 x 3 mL D.I. H₂O.

1 x 1 mL 100 mM phosphate buffer (pH 6.0).

NOTE: Aspirate at < 3 inches Hg to prevent sorbent drying.

3. APPLY SAMPLE:

Load at 1 mL/minute.

4. WASH COLUMN:

1 x 3 mL D.I. H₂O.

1 x 3 mL Hexane.

Dry column (5 minutes at > 10 inches Hg).

5. ELUTE ANALYTE:

1 x 1 mL CH₃OH.

6. DRY ELUATE:

Evaporate to dryness at < 40°C.

7. RECONSTITUTE

Add 200 µL CH₃OH. Mix/vortex. Transfer to GC/MS vial and cap.

8. QUANTITATE

Inject 1-2 µL sample onto GC/MS.

GC/MS Conditions: Column: HP Ultra 1, Crosslink Methyl Silicone 12 m x 0.2 mm I.D. x 0.33 µm film thickness

GC Oven:

Initial Temp. = 100° C Initial Time = 3.00 min.

Ramp = 17°C/min.

Final Temp. = 305°C.

Final Time = 3.0 min.

Injection Port Temp. = 250°C.

Transfer line Temp. = 280°C.

SCAN Acquisition = 41 amu to 400 amu: Start time = 2.00 min.

Retention times:

Compound CN CS OC

RT (min.) @4.9 @7.4 @13.4