Gel-Pak®
Protecting the World's Valuable Devices

VTX Outgassing Static Headspace

TECHNICAL DATASHEET

Method Summary:
Static Headspace Analysis (outgassing) is performed by subjecting the sample in a sealed container to a controlled temperature for a fixed period of time. This procedure drives volatile compounds from the sample matrix into the atmosphere above the sample, called the headspace. This procedure is commonly used to simulate outgassing. The volatile components are then analyzed and quantified by Gas Chromatography (GC), and Mass Spectrometry (MS).

Test Standard:
IDEMA Microcontamination Standard M8-98
Total Out-gassing by Static Headspace GC/MS

Test Method and Results:
Headspace Solid-Phase Microextraction (HS-SPME) GC-MS was used. Samples were placed in a 20 mL glass GC vial and sealed with a metal screw cap fitted with a PTFE septum. The samples were placed in an incubator heated to 70°C for 2 hr. After preincubation, the sample was extracted with a SPME fiber [Divinylbenzene/Carboxen/ Polydimethylsiloxane (DVB/CAR/PDMS) d_f 50/30 µm] for 30 minutes at 70°C while shaking. The extracted volatiles were then desorbed for three minutes in the Agilent GC split/splitless injector heated to 260°C. Volatiles were injected into an Agilent 30m x 0.25mm x 0.25 µm DB-5MS capillary column at a constant flow rate of 1.0 mL/min. GC peaks were identified by library matching to the NIST11 mass spectra library.

Figure 1. VTX Testing Results

Chemical Family	Low Tack Results, ug/g	Medium Tack Results, ug/g	High Tack Results, ug/g
Silicones/Siloxane	-	-	-
Hydrocarbons	0.32	0.85	27
Phthalates	-	-	-
Total Outgas	0.32	0.85	27
Total outgassing at 70°C for 2hr.			