

## Massachusetts APH Calibration Standards

In February 2000, The Massachusetts Department of Environmental Protection, (MADEP) published the "Method For The Determination Of Air-Phase Petroleum Hydrocarbons (APH)." This method is designed to measure the gaseous-phase concentrations of volatile aliphatic and aromatic petroleum hydrocarbons in air and soil gas.

This method, based on the collection of whole air samples in SUMMA<sup>®</sup> passivated stainless steel canisters, with subsequent analysis by gas chromatography/mass spectrometry (GC/MS), is designed to complement and support the toxicological approach developed by the MADEP to evaluate human health hazards that may result from exposure to petroleum hydrocarbons (MADEP, 1994).

In response to this method, Spectra now produces the following APH calibration standard, with all components at 1 ppmV in either size 2A or 6A cylinders:

### COMPOUND [CAS#]

1,3-Butadiene [106-99-0]	m- & p- Xylenes [108-38-3] [106-42-3]
Isopentane [ 78-78-4]	o-Xylene [ 95-47-6]
Methyl-tert-Butylether [1634-04-4]	n-Nonane [111-84-2]
n-Hexane[110-54-3]	Isopropylbenzene [ 98-82-8]
Benzene [ 71-43-2]	1-Methyl-3-ethylbenzene [ 620-14-4]
Cyclohexane [110-82-7]	1,3,5-Trimethylbenzene [108-67-8]
2,3-Dimethylpentane [565-59-3]	n-Decane [124-18-5]
n-Heptane [142-82-5]	1,2,3-Trimethylbenzene [526-73-8]
Toluene [108-88-3]	p-Isopropyltoluene [99-87-6]
Toluene-d8 (IS) [2037-26-5]	Butylcyclohexane [1678-93-9]
n-Octane [111-65-9]	n-Undecane [1120-21-4]
Ethylbenzene [100-41-4]	n-Dodecane [112-40-3]
2,3-Dimethylheptane [3074-71-3]	

**NOTE:** CAS numbers are in square brackets, i.e. [00-00-0]

To enhance your QA/QC procedures, Spectra stocks at least two (2) individual batches of each VOC raw material. This allows you to order two (2) independent **MA DEP Calibration Standards** from Spectra.

### Regulator Recommendation

Various independent and Agency laboratories have indicated that to ensure repeatability with low level calibration gases it is best to utilize the same regulator for initial assay and for daily usage, thus minimizing the sources for potential variances and possible cross contamination. If a regulator is purchased along with the MADEP standard, Spectra Gases will perform the initial assay and certification analysis utilizing the regulator and cylinder as a matched set.

Spectra Gases' model 7621 regulator is ideal for use with the MADEP standard. Please see the equipment section for information on this and other gas handling equipment.

