



SPECTRA VOC STANDARDS

TO-15/TO-17 Subset

Description SPECTRA VOC standards are part of the HiQ® specialty gases program from Linde and are manufactured using exacting gravimetric techniques with all gravimetric measurements directly traceable to NIST (National Institute of Standards and Technology).

The TO-15/TO-17 Subset Calibration Standard consists of 25 components which are not contained in the TO-14 Calibration Standard. It is available from stock at standard concentrations of one (1) ppm or one hundred (100) ppb in a balance gas of VOC free nitrogen (N₂). Other concentrations are available as custom mixtures.

HiQ® Specialty Gases The HiQ® specialty gases program from Linde supplies high purity gases, gas mixtures, precision engineered equipment and gas distribution systems, and services and support, to a wide range of industries employing specialty gases applications. In addition to the line of SPECTRA high purity gases the HiQ® program includes the REDLINE® and BASELINE® trademarked equipment product ranges and the SPECTRA-SEAL®, ECOCYL® and VERISEQ® specialty gas ranges.

HiQ® products represent Linde's commitment to the highest available quality and global consistency across gases, equipment and services.

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| <p>Compound [CAS#]</p> <ul style="list-style-type: none"> → Acetone [67-64-1] → Allyl Chloride [107-05-1] → Benzyl Chloride [100-44-7] → Bromodichloromethane [75-27-4] → Bromoform [75-25-2] → 1,3-Butadiene [106-99-0] → 2-Butanone (MEK) [78-93-3] → Carbon Disulfide [75-15-0] → Cyclohexane [110-82-7] → Dibromochloromethane [124-48-1] → trans-1,2-Dichloroethene [156-60-5] → 1,4-Dioxane [123-91-1] → Ethyl Acetate [141-78-6] | <ul style="list-style-type: none"> → 4-Ethyltoluene [622-96-8] → n-Heptane [142-82-5] → n-Hexane [110-54-3] → 2-Hexanone (MBK) [591-78-6] → 4-Methyl-2-Pentanone (MIBK) [108-10-1] → Methyl-tert-Butylether (MTBE) [1634-04-4] → 2-Propanol [67-63-0] → Propylene [115-07-1] → Tetrahydrofuran [109-99-9] → Vinyl Acetate [108-05-4] → Vinyl Bromide [593-60-2] → 2,2,4-Trimethylpentane [540-84-1] |
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To enhance your QA/QC procedures, Linde stocks at least two (2) individual batches of each VOC raw material allowing you to order two (2) independent TO-15/TO-17 Calibration Standards.

Specifications

Blend Tolerance	100 ppb to 1 ppm +/- 10%
	>1 ppm to 10 ppm +/- 5%
Analytical Accuracy	100 ppb to 1 ppm +/- 5%
	>1 ppm to 10 ppm +/- 2%
Stability	12 months

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 TO-15/TO-17 Calibration Standard, Linde will perform the initial assay and certification of analysis utilizing regulator and cylinder as a matched set.

Linde's Model 7621 regulator is ideal for use with TO-15/TO-17 Calibration Standards please see equipment section for further information on this and other gas handling equipment.

Standard Available Cylinders

Cylinder Size	Volume	Pressure	CGA
2A	4000 liters	2000 psig	350
6A	104 liters	1800 psig	180

All SPECTRA VOC Calibration Standards are guaranteed for a minimum of 12 months.

Please contact Linde for information on other concentrations, tolerances, and cylinder sizes.

Linde Electronics and Specialty Gases

One Greenwich Street, Suite 100, Stewartsville, NJ 08886 USA
Phone 908-329-9700, Fax 908-329-9740, www.lindeus.com

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