VOC, Toxic Organic and Ozone Precursor Reference Standards

Volatile Organic Compounds (VOCs) and toxic organic chemicals aid in ground level ozone formation in the atmosphere. AREAL (EPA Atmospheric Research and Exposure Laboratory) has developed a number of methods for measuring these components in ambient air. These methods provide a standardized format for sampling and analysis of VOCs.

MATHESON manufactures stable, consistent and accurate Toxic Organic and Ozone Precursor Reference Standards. Each mixture is manufactured and measured using state-of-the-art measuring and mixing techniques such as:

- High precision gravimetric and multi-gravimetric techniques providing the lowest direct weight additions
- Multi-range VOC reference standards from our proven internal standards inventory

• NIST weight traceability
• State-of-the-art GC/MS and GC/FID instruments and U.S. EPA’s GC methods
• VSL PRM VOC reference standards

MATHESON manufactures calibration mixtures for TO-15, TO-14A, and the Ozone Precursor Methods. All are filled in our Microshield treated aluminum cylinders for extra stability, and are guaranteed with a minimum 12-month shelf life. Custom mixtures can be produced depending on your specific chemical and concentration requirements. MATHESON VOC mixture experts will review custom mixture compositions.

TO-14A STANDARD MIXTURE PROFILE

NOTE: All cylinder sizes may not be available for all standard mixtures due to component weight constraints as the cylinder size gets smaller.

Shipping Information

| UN Number: | UN 1956 |
| DOT Proper Shipping Name: | Compressed Gas, nos, (List of Components) |
| DOT Classification: | 2.2 (Nonflammable Gas) |
| DOT Label: | NON-FLAMMABLE GAS |
| TC Shipping Name: | Compressed Gas, nos, (List of Components) |
| TC Classification: | 2.2 |
| TC Label: | NON-FLAMMABLE GAS, NON-POISONOUS GAS |

39 Minor Component TO-14A

- Benzene [71-43-2]
- Bromomethane [74-83-9]
- Carbon tetrachloride [120-96-3]
- Chlorobenzene [108-90-7]
- Chloroethane [75-00-3]
- Chloroform [67-66-3]
- Chloromethane [74-87-3]
- 1,2-Dibromoethane [106-93-4]
- 1,2-Dichlorobenzene (ortho) [92-50-1]
- 1,2-Dichlorobenzene (meta) [541-73-1]
- 1,2-Dichlorobenzene (para) [106-46-7]
- Dichlorodifluoromethane [75-71-8]
- 1,1-Dichloroethane [75-34-3]
- 1,2-Dichloroethane [107-06-2]
- 1,1-Dichloroethane [75-34-3]
- 1,2-Dichloroethane [107-06-2]
- 1,2-Dichloroethane [107-06-2]

40 Minor Component TO-14A

Includes the 39 Component TO-14A PLUS Acrylonitrile [107-13-1] and 1,3 Butadiene [106-99-0]

- Acrylonitrile [107-13-1]
- 1,3 Butadiene [106-99-0]
- 1,2-Dichloroethane [107-06-2]
- 1,2-Dichloroethane [107-06-2]
- 1,2-Dichloroethane [107-06-2]

43 Minor Component TO-14A

Includes the 41 Component TO-14A PLUS 3-Chloroprene (Allyl Chloride) [107-05-1] and 4-Ethyl Toluene [622-96-8]

- 3-Chloroprene (Allyl Chloride) [107-05-1]
- 4-Ethyl Toluene [622-96-8]
- 1,2-Dichloroethane [107-06-2]
- 1,2-Dichloroethane [107-06-2]
- 1,2-Dichloroethane [107-06-2]
WARNING: This product can expose you to chemicals including Ethylbenzene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Styrene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including p-Dichlorobenzene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Ethylene Dibromide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Ethylene Dichloride (1,2-Dichloroethane), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Acrylonitrile, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Tetrachloroethylene (Perchloroethylene), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Carbon Tetrachloride, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Chloroform, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Hexachlorobutadiene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.