



Practical Health and Safety Solutions

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Volatile Organic Compound Testing

Many issues in homes and buildings are caused by the presence of volatile organic compounds (VOCs) that are off gassed by plastics, cleaning products, personal care products, etc. An air test can:

- provide the total VOC value that shows how your building compares to others,
- identify the type of products that are contributing to the VOC level, and
- identify specific compounds in the air.

A sample of the results from a VOC test are provided below.

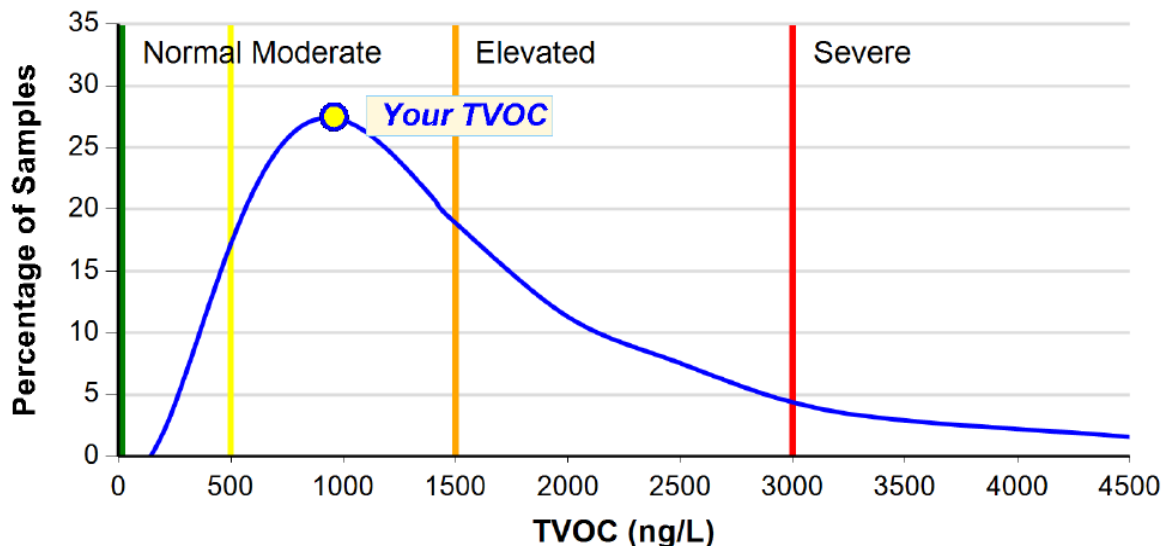
Total Volatile Organic Compound (TVOC) Summary

Your TVOC Level is: 700 ng/L

IAQ is borderline acceptable; some effect on occupants is possible; reduce potential sources and consider increasing ventilation.

Your Indoor Air Quality Level (Highlighted)

Normal < 500 ng/L	Moderate 500 - 1500 ng/L	Elevated 1500 - 3000 ng/L	Severe > 3000 ng/L
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VOCs by Source Category

Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Source Prediction & Suggestions for VOC Reduction
Coatings (Paints, Varnishes, etc.)	310	Moderate	Includes interior and exterior paints (including low- or no-VOC paints), varnishes, lacquers, some sealants, and other products that can be classified as a coating over a surface. Typically, VOCs from these products are in the 10 to 14 carbon size range and can linger for several months, sometimes longer. Ventilate as much as possible during and after application of these products. Dispose of opened but unused products and related supplies if possible or store in areas that will minimize off gassing. Additional sources include fuel oil or diesel fuel.
PVC Cement	0	Normal	PVC cement is used to join pieces of PVC pipe together, usually for plumbing.
Building Materials-Toluene Based	0	Normal	Adhesives and glues used in construction and maintenance, arts and crafts; adhesive removers; contact cement; sealants; coatings (paint, polyurethane, lacquer, thinner); automotive products, including parts cleaners. Additional sources include gasoline and other fuels.
Gasoline	140	Normal	VOCs from gasoline are typically a result of off-gassing from gas containers, small spills, and gas-powered equipment used in facilities maintenance in nearby garage or storage areas. Most vehicles in good operating condition do not emit gasoline vapors due to the tightly sealed gas tank. This category does not include exhaust emissions. Gasoline VOCs can linger on clothing after refueling at a gas station. Gasoline includes chemical compounds that are also included in the Light Solvents category.
Fuel Oil, Diesel Fuel, Kerosene	0	Normal	Typically found in garages and facilities maintenance areas. These fuels are not very volatile so they will not readily get into the air, but they can linger for a long time and produce a strong, unpleasant odor. This category does not include exhaust emissions. Additional sources include coatings such as paints, varnishes, sealants, waxes, etc.
Light Hydrocarbons	9	Normal	Building materials; aerosol cans; liquefied petroleum gas (LPG); refrigerant; natural gas; propellant; blowing agent. Includes chemical compounds such as propane, butane, and isobutane.
Light Solvents	140	Normal	Stoddard solvent; mineral spirits; some coatings (paints, varnish, enamels, etc.); wax remover; adhesives; automotive products; light oils. Typically, VOCs from these products are in the 6 to 9 carbon size range.

Dominant Chemicals Found

Compound	CAS	Estimated VOC Level (ng/L)	Estimated VOC Level (ppb)	Description
Ethanol	64-17-5	77	40	Cleaners, especially antiseptic wipes; personal care; consumable alcohol; some solvents; renewable gasoline component; pharmaceuticals
a-Pinene	80-56-8	35	6	Pine lumber; fragrances and essential oils; solvents; insecticides
Acetone	67-64-1	32	13	Personal care, especially nail care; cleaners; paints and coatings; strippers and thinners; PVC cleaner; caulks and adhesives; wood filler; solvent

Odorants

Compound	CAS	Conc. (ppb)	Odor Range (ppb)	Odor Description
Acetone	67-64-1	13	400 - 11,745,000	sweet, fruity, ethereal
Ethanol	64-17-5	40	90 - 40,334,000	vinous, alcohol