









**Contamination Index Building Sources**

Use the Contamination Index (CI) below to help you find products in your home that may be affecting your indoor air quality. Removing or reducing these products will improve your air quality. The concentrations reported here are approximate and may not add up to the TVOC value on page 2 of this report. These categories are typically part of the structure of the home and may be more difficult to reduce in the short term. Recent construction or renovation will often cause these categories to be elevated. The CI classifications begin at Normal and progress through Moderate, Elevated, High and Severe. These severity classifications are determined using a combination of statistical data gathered from thousands of samples and health information specific to each CI category. Levels indicated as Elevated, High, or Severe should be immediately addressed, and those listed as Moderate are areas that can be improved over time.

	Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Description and Suggestions for VOC Reduction
Building Related Sources	Coatings (Paints, Varnishes, etc.)	270	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 and dispose of opened but unused products and related supplies if possible or store in areas that will minimize off gassing. There is some overlap between chemical compounds associated with 'Coatings (Paints, Varnishes, etc.)' and those found in 'Fuel Oil, Diesel Fuel, Kerosene.'
	PVC Cement	0	Normal	PVC cement is used to join pieces of PVC pipe together, usually for plumbing.
	HFCs and CFCs (Freons™)	3	Normal	Most often used as refrigerants for air conditioners and refrigerator/freezers and propellants for blown-in insulation, cushions, aerosol cans, etc. Many of these chemical compounds are being phased out because of the Montreal Protocol.

**Contamination Index™ Mixed Building and Lifestyle Sources**

Use the Contamination Index (CI) below to help you find products in your home that may be affecting your indoor air quality. Removing or reducing these products will improve your air quality. The concentrations reported here are approximate and may not add up to the TVOC value on page 2 of this report. These categories could belong to either the Building or Lifestyle groups so additional investigation may be necessary to determine which source is more likely. The CI classifications begin at Normal and progress through Moderate, Elevated, High and Severe. These severity classifications are determined using a combination of statistical data gathered from thousands of samples and health information specific to each CI category. Levels indicated as Elevated, High, or Severe should be immediately addressed, and those listed as Moderate are areas that can be improved over time.

Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Description and Suggestions for VOC Reduction
<b>Building Materials-Toluene Based</b>	0	<b>Normal</b>	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.
<b>Gasoline</b>	17	<b>Normal</b>	VOCs from gasoline are typically a result of off-gassing from gas containers and gas-powered equipment such as lawnmowers, snow blowers, mini-bikes, etc. that are stored in attached garages or basements. Does not include exhaust emissions. These items should be stored externally to the home. Additionally, gasoline VOCs can linger on clothing after refueling an automobile at a gas station. Gasoline includes chemical compounds that are also included in the 'Light Solvents' category.
<b>Fuel Oil, Diesel Fuel, Kerosene</b>	0	<b>Normal</b>	Often found in garages and basements. These fuels are not very volatile so will not readily get into the air, but they can linger for a long time and produce a strong, unpleasant odor. Does not include exhaust emissions. There is some overlap between chemical compounds associated with 'Fuel Oil, Diesel Fuel, Kerosene' and those found in 'Coatings (Paints, Varnishes, etc.)'
<b>Moth Balls (Naphthalene Based)</b>	0	<b>Normal</b>	Naphthalene based moth balls. May be present with p-Dichlorobenzene-based moth crystals.
<b>Moth Crystals (p-Dichlorobenzene Based)</b>	0	<b>Normal</b>	p-Dichlorobenzene based moth crystals. May be present with Naphthalene-based moth balls.
<b>Light Hydrocarbons</b>	1400	<b>High</b>	Building materials; aerosol cans; fuel for cooking/camping/lighters; liquefied petroleum gas (LPG); refrigerant; natural gas; propellant; blowing agent. Recent renovation or construction may increase these levels. Increase ventilation during and after use of these products. Although these chemical compounds typically do not represent significant health impacts, their presence can indicate larger problems. Includes chemical compounds such as propane, butane, and isobutane.
<b>Light Solvents</b>	160	<b>Normal</b>	Stoddard solvent; mineral spirits; some coatings (paints, varnish, enamels); wax remover; adhesives; automotive products; light oils. Typically, VOCs from these products are in the 6 to 9 carbon size range.
<b>Methylene Chloride</b>	0	<b>Normal</b>	Automotive products; degreasing solvent; paint stripper; adhesive remover; aerosol propellant; insecticide.

**Mixed Building and Lifestyle Sources**

**Contamination Index™ Lifestyle Sources**

Use the Contamination Index (CI) below to help you find products in your home that may be affecting your indoor air quality. Removing or reducing these products will improve your air quality. The concentrations reported here are approximate and may not add up to the TVOC value on page 2 of this report. These categories are typically brought into the home by the occupants and can often be readily identified and removed or contained. The CI classifications begin at Normal and progress through Moderate, Elevated, High and Severe. These severity classifications are determined using a combination of statistical data gathered from thousands of samples and health information specific to each CI category. Levels indicated as Elevated, High, or Severe should be immediately addressed, and those listed as Moderate are areas that can be improved over time.

Lifestyle Related Sources	Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Description and Suggestions for VOC Reduction
	<b>Personal Care Products</b>	140	<b>Normal</b>	Soap, deodorant, lotions, perfumes, hair coloring supplies, nail care supplies, oral hygiene products, etc. These products contain many VOCs that will dissipate if use is discontinued or reduced. Consider storing these products in a closed container when not in use, and dispose of unused products. Also, run an exhaust fan or open a window when using these products.
	<b>Alcohol Products</b>	190	<b>Moderate</b>	Household cleaning products, antiseptic wipes, hand sanitizers, some solvents, reed diffusers, consumable alcohol, and some pharmaceuticals. These concentrations will be reduced by removing unnecessary products or proper storage of those materials in closed airtight containers. Promptly rinse empty alcoholic beverage containers and place outside if possible. Consolidate cleaning products to the essentials.
	<b>Odorants and Fragrances</b>	70	<b>Normal</b>	VOCs in this category can be found in scented candles, potpourri, air fresheners, scented cleaning products, and scented personal care products. Consider reducing use of scented products and store unused products in a tight fitting container.
	<b>Dry Cleaning Solvents</b>	0	<b>Normal</b>	Typical dry-cleaning methods employ the use of carcinogenic chemicals. Dry-cleaning should be allowed to vent outside, without plastics bags, before being placed inside.
<b>Medicinals</b>	0	<b>Normal</b>	Ointments and creams, topical first aid/pain relievers.	

## Significant VOCs

Based upon your specific home air analysis, the chemical compounds listed below are significant contributors to the TVOC level reported on page 2 of your IAQ Home Survey Report or are indicative of specific types of products or problems. Compounds from a variety of chemical classes are represented here, although only the most common or most notable are specifically listed. These chemical compounds may come from a variety of sources as shown in the Contamination Index section of this report.

Locating and removing the source of the chemical compound is the most effective way to reduce the concentration of that chemical compound. If removing the source is not possible, try to contain it in some way (e.g., placing the source in an air-tight container when not in use). In addition, many homes have insufficient ventilation so increasing the amount of outside air or filtering or purifying re-circulated inside air will almost always reduce the TVOC. Since VOCs may continue to off-gas even when the sources are stored, ventilation and air-purification methods may need to be employed continuously in order to keep the VOC levels low.

The Chemical Abstracts Service (CAS) registry number after the chemical compound name in the table below is a unique identifier for that chemical compound and is often the best means to search for additional information. The two VOC levels in the table below (ng/L and ppb) are different ways of describing the same concentration.

Compound	CAS	Estimated VOC Level (ng/L)	Estimated VOC Level (ppb)	Description
Isobutane	75-28-5	1300	520	Gasoline and fuel additive; aerosol propellant; refrigerant; cooking/camping/lighter fluids
Ethanol	64-17-5	190	100	Cleaners, especially antiseptic wipes; personal care; consumable alcohol; some solvents; renewable gasoline component; pharmaceuticals
Butane (C 4)	106-97-8	75	31	Aerosol propellant; cooking/camping/lighters fluids; liquefied petroleum gas (LPG); refrigerant; food additive
a-Pinene	80-56-8	32	6	Pine lumber; fragrances and essential oils; solvents; insecticides
Acetone	67-64-1	28	11	Personal care, especially nail care; cleaners; paints and coatings; strippers and thinners; PVC cleaner; caulks and adhesives; wood filler; solvent
Propane	74-98-6	23	13	Fuel, Liquefied Petroleum Gas (LPG); aerosol and spray propellant
Limonene	138-86-3 or 5989-27-5	22	4	Limonene (CAS 138-86-3) or d-Limonene (CAS 5989-27-5)Fragrances; paints and coatings; cleaners; solvent; preservative



**Supplemental Information: Odorants**

Many chemical compounds have odors associated with them, some pleasant and some unpleasant. These odors can combine to create different odors, making odor identification more difficult. The odor descriptions for the compounds reported in this air sample are listed below as well as some of the more common sources.

<b>Compound</b>	<b>CAS</b>	<b>Conc. (ppb)</b>	<b>Odor Range (ppb)</b>	<b>Odor Description</b>
Acetone	67-64-1	11	400 - 11,745,000	sweet, fruity, etherous
Butane (C 4)	106-97-8	31	421 - 5,048,000	natural gas
Ethanol	64-17-5	100	90 - 40,334,000	vinous, alcohol
Limonene	138-86-3 or 5989-27-5	4	2 - 310	lemon, plastic, citrus, rubber, terpeny
Propane	74-98-6	13	1,497,000 - 19,964,000	natural gas

**Supplemental Information: EPA Hazardous Air Pollutants (HAPs)**

Hazardous air pollutants, also known as toxic air pollutants or air toxics, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Listed below are those HAPs that were detected with the IAQ Home Survey VOC test, this list does not include all HAPs. The '<' (less than) symbol in the 'Estimated VOC Level' columns indicates that compound is below the reporting limit for this air sample. For more information about HAPs visit the EPA [Air Toxics website](#). The exposure limits listed below can also be found in the [NIOSH Guide to Chemical Hazards](#). The HAPs in the table below may also be listed as Significant VOCs if the concentration of that chemical compound is greater than the threshold level for a Significant VOC.

Compound	CAS	Estimated VOC Level (ng/L)	Estimated VOC Level (ppb)	NIOSH Exposure Limit	Description
Hexane (C 6)	110-54-3	4	1	180,000 ng/L (50,000 ppb)	Solvent; adhesive; grease; lubricant; paints and coatings; petroleum fuel component
1,2-Dichloroethane	107-06-2	1	0.3	Carcinogen; 4,000 ng/L (1,000 ppb)	PVC production; solvent for rubber, insecticides, oils, waxes, gums, resins; rug and upholstery cleaners
Toluene	108-88-3	2	0.6	375,000 ng/L (100,000 ppb)	Gasoline; adhesives (building and arts/crafts); contact cement; solvent; heavy duty cleaner

*These results pertain only to this sample as it was collected and to the items reported.  
 These results have been reviewed and approved by the Laboratory Director or approved representative.*

This analysis was performed by Enthalpy Analytical, LLC (MTP). The results contained in this report are dependent upon a number of factors over which Enthalpy Analytical, LLC (MTP) has no control, which may include, but are not limited to, the sampling technique utilized, the size or source of sample, the ability of the sampler to collect a proper or suitable sample, the compounds which make up the TVOC, and/or the type of mold(s) present. Therefore, the opinions contained in this report may be invalid and cannot be considered or construed as definitive and neither Prism, nor its agents, officers, directors, employees, or successors shall be liable for any claims, actions, causes of action, costs, loss of service, medical or other expenses or any compensation whatsoever which may now or hereafter occur or accrue based upon the information or opinions contained herein.

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