

當你進入一個新裝修的房間，或是將一套簇新的木壓製品傢俬包裝拆開，又或是使用影印機時，很可能也曾嗅到一陣難聞的氣味，或感到眼睛和喉嚨不適。你可能對這種情況習以為常了。但其實你已接觸了一些由日用品釋放出來的揮發性有機化合物。如果你願意嘗試改變，是可以避免接觸這些有害物質的。

### 什麼是揮發性有機化合物及它對你有何影響？

揮發性有機化合物（或簡稱VOCs）包含各種可於室溫下揮發的有機化合物。在一般的室內環境中，有著100種以上的VOCs，其中包括甲醛。這些VOCs可由多種不同源頭釋放出來，如建造物料、傢俬、化妝品、清潔劑、殺蟲劑及二手煙等。乾洗後的衣服亦可能殘存VOCs。

與VOCs接觸，可能會對健康造成急性或慢性的不良影響。很多種類的VOCs會容易使人上癮，亦會抑制中樞神經系統。高濃度的VOCs可引致眼睛、鼻子和喉嚨不適，甚至頭痛、暈眩、視力失常及其他多種傷害。有多種可於室內測量的VOCs，已被公認為人類或動物的致癌物質。鑑於現時對VOCs及其混合物的毒理學認識還未足夠，最審慎安全的做法便是盡量減少與其接觸。

### 什麼因素可造成VOCs污染？

你可檢查下列情況有否出現：

- 大廈的通風系統能否提供足夠新鮮空氣？
- 大廈最近曾否進行裝修或添置新傢俬？
- 由印刷公司、儲存化學品地方、影印房或裝修工程等源頭釋放出來的VOCs，會否經過通風系統而散播至大廈的其他地方？有沒有為這些潛在源頭安裝獨立抽氣設備，將VOCs直接抽出室外排放？
- 是否使用低排放量的清潔劑、膠合板、地氈和傢俬、建造物料、辦公室設備如影印機和傳真機等？
- 含有或滲透出VOCs的廢料是否已密封包裝好，並妥善棄置？
- 經乾洗後的衣物在穿著前有沒有晾在通風地方，先讓異味散發？

### 如何減少VOCs污染？

- 最有效的措施是保持大廈空氣流通，並為潛在的VOCs源頭裝設獨立過風設備。
- 在處理油漆、黏合劑、清潔劑及其他含VOCs產品時，應仔細閱讀和小心依照說明的指示；避免在密封及沒有通風設備的空間內使用這類產品；只購買合適量的VOCs產品。
- 裝修工程和防蟲等工作應安排在假日或無人工作的時段內。工程完成後，讓新鮮空氣吹透曾經進行工程的地方，以減低VOCs積存在單位內。監察工程的時間表和進度，確保已採取適當的預防措施以盡量減少VOCs的積聚。
- 應盡可能使用一些低排放的產品及向製造商要求提供有關排放量的資料。在大廈入伙前，應評估各種物料的排放總量和持續時間，以決定是否需要加強通風系統或延長吹風時間，減少大廈使用者接觸到VOCs。
- 如果你有衣物剛進行乾洗，在使用前應確保已經完全晾曬乾透。

### 如何量度室內的VOCs？

要辨別和測量每一種類的VOCs，是非常昂貴和費時的。因此，進行初步評估時，會利用一個「VOCs總量」(TVOC)的概念，將所有VOCs集合起來量度，而不作個別種類區分。

在決定是否需要量度VOCs水平前，應先考慮上述消除VOCs源頭或消滅措施以減少接觸VOCs。若然你決定量度VOCs以辨別家中或辦公室是否存有VOCs問題，應找專業環境人士取樣、分析和解釋結果。

### 有關揮發性有機化合物的規例

空氣污染管制（揮發性有機化合物）規例就建築漆料/塗料、印墨和指定消費品的揮發性有機化合物含量訂明限值，以減少該等產品排放到大氣的揮發性有機化合物總量。

### 如想得到更多資料，請聯絡：

室內空氣質素資訊中心  
香港九龍塘達之路78號生產力大樓一樓  
電話：2 7 8 8 6 1 7 7  
傳真：2 7 8 8 6 1 8 1  
電郵：enquiry@iaq.gov.hk  
網址：<http://www.iaq.gov.hk>

Indoor Air Quality  
Information Centre  
室內空氣質素資訊中心

環境保護署  
ENVIRONMENTAL  
PROTECTION DEPARTMENT

# 揮發性有機化合物 與你 Volatile Organic Compounds and you

*You probably have experienced a slightly unpleasant smell or irritation of the eyes and throat when you entered a newly decorated room, opened the packing of a new set of pressed-wood furniture, or operated a photocopier, and you might have accepted such unpleasant experience as a fact of life. The bad news is you have been exposed to the volatile organic compounds (VOCs) emitting from those products. The good news is you can avoid such exposure if you care to make an effort to make a difference!*

#### **What are VOCs and how do they affect you?**

VOCs are a diverse group of organic compounds that evaporate at room temperature. In a typical indoor environment, there are more than 100 compounds, including formaldehyde, that can be classified as VOCs emitting from many sources such as construction materials, furnishings, cosmetics, cleaning agents, pesticides, and tobacco smoke. Clothes which have been dry-cleaned may also contain residual VOCs.

Exposure to VOCs may result in both acute and chronic health effects. Many of the VOCs are strongly addictive and can result in the depression of the central nervous system. In sufficient quantities, VOCs can cause eye, nose and throat irritations, headaches, dizziness, visual disorder, and many impairments. Many of the VOCs which have been measured indoors are known human or animal carcinogens. As existing knowledge of toxicological effects of VOCs and their mixtures is still incomplete, it is always prudent to minimise exposure to them.

#### **What are the possible causes of a VOCs problem?**

Please check if any of the following conditions exist:

- Is good ventilation with sufficient supply of fresh air being provided to the premises?
- Have the premises been recently decorated or furnished?
- Is there any chance for the VOCs from localised potential sources such as printing shop, chemical store, photocopying room, or redecoration work spreading via the ventilation system to other parts of the building? Is independent exhaust ventilation provided to such potential sources to discharge the VOCs from the areas to an open outdoor environment for dispersion?
- Are low-emitting cleaning agents, plywood, carpet and furnishings, building products, office equipment such as photocopiers and fax machines, etc. being specified /labelled and used?
- Are waste materials containing or soaked with VOCs being packed airtight for proper disposal?
- Have dry-cleaned clothing been adequately aired out before use!

#### **What are the tips to reduce VOCs problem?**

- The most effective measure is to maintain good ventilation for the premises at all times together with independent exhaust ventilation provided to potential VOC sources.
- Read and follow closely the instruction of the manufacturers in handling paints, adhesives, cleaning agents and other VOC products. Avoid using such products in a confined space where no ventilation is provided. Only buy as much as you need at the time.
- Schedule redecoration work, pest control activity, etc. for unoccupied times. Flush the affected area with fresh air to dilute emissions upon completion of work. Monitor the schedules and processes to ascertain that precautions are taken to minimise VOCs.
- Every effort should be made to specify low-emitting products and request emissions data from the

manufacturers. Before a building is occupied, the total amounts and duration of emissions of the various materials should be assessed to determine if increased ventilation or extended flush-out period is needed to avoid exposure of occupants to potentially harmful off-gassing of VOCs.

- If you have clothes or bedding dry-cleaned, make sure they are properly dried and air them thoroughly before use.

#### **How can I measure indoor VOCs?**

Identification and measurement of all individual VOC are expensive and time-consuming. For that reason, the concept of total VOCs (TVOC) is developed to group all the VOCs together without distinguishing them individually for initial assessment.

Before deciding if you need any measurement, you should explore the abatement measures mentioned above to get rid of the sources or reduce the exposure. In case you really want to carry out measurement to assess if there is any VOCs problem in your office or home, you should seek help from environmental professionals to carry out the sampling, analysis and interpretation of the results.

#### **Regulation related to Volatile Organic Compounds**

The Air Pollution Control (Volatile Organic Compounds) Regulation sets limits on the VOC content of architectural paints/coatings, printing inks and selected consumer products to reduce the total emission of VOCs from these products to the atmosphere.

#### **For more information, please contact:**

Indoor Air Quality Information Centre  
1/F, HKPC Building, 78 Tat Chee Avenue  
Kowloon Tong, Hong Kong  
Telephone: 2788 6177 Facsimile: 2788 6181  
E-Mail: [enquiry@iaq.gov.hk](mailto:enquiry@iaq.gov.hk)  
Web Site: <http://www.iaq.gov.hk/>