減少黏合劑和密封劑
排放揮發性有機化合物

為何要減少黏合劑和密封劑的揮發性有機化合物排放？

揮發性有機化合物是一種容易在室內下形成化合物，可能對多種健康影響，包括：

**減少黏合劑和密封劑使用**

黏合劑一般用於黏接地膠和其他地台，例如玻璃和磁磚，以及用於裝修木製材料、塗料、塗層、鋼鐵、塑膠和鋁材以及複合材料。密封劑一般用於密封縫隙，防止水和其他物質進入。黏合劑和密封劑通常含有礦物油或有機溶劑，並在生產過程中產生揮發性有機化合物，這些化合物可能揮發性有機化合物會在室內造成大氣污染。揮發性有機化合物的主要來源包括：

- 影響室內的環境和健康，對人和物所使用的健康的造成不良影響。

由於黏合劑和密封劑的產品可用於各種用途，如用於工程和建築業。但可以長期儲存揮發性有機化合物，黏合劑和密封劑產品是揮發性有機化合物的主要來源之一，導致大氣室內空氣污染。

揮發性有機化合物如何影響我們？

吸入揮發性有機化合物可能引起急性及慢性健康影響。揮發性有機化合物刺激鼻腔和咽喉，亦有人相關的中樞神經系統影響。有些揮發性有機化合物還可能致癌，並影響生長系統的發育和生育。

如何減少揮發性有機化合物的使用？

通過使用更環保的製造方法，減低生產過程中的揮發性有機化合物含量，並在設計製品時考慮其使用的環境。

使用含低揮發性有機化合物的黏合劑和密封劑有何好處？

與傳統產品相比，目前含低揮發性有機化合物的產品已較為常見，而由於科技進步，這些產品的性能亦大大改善，當中有部分產品已受到國際標準的認可。在不影響建築物質量和使用壽命的情況下，使用低揮發性有機化合物製品，不僅可以減少對環境的影響，亦可降低對用戶的健康影響。

可參考以下製造商的資訊，選購環保產品，如三氯乙烯、丙酮、四氯乙烯及三氯

如欲咭取更多資料，請聯絡：

環境保護署
香港賽馬會行政總署大樓3樓
電話：2936 5111
電郵：irp@epd.gov.hk

環境地點：http://www.epd.gov.hk

於使用少揮發性有機化合物產品後需無味時間，因此延遲清潔，以免減低清潔上的成本和時間。
Why do we need to reduce VOC emissions from adhesives and sealants?

Volatile organic compounds (VOCs) are chemicals that vaporize easily at room temperature and are found in many building materials such as paints, thinners, adhesives and sealants/caulks.

Conventional adhesives (commonly used for gluing down carpeting and other flooring surfaces such as cork and tile, and used in installation of cabinetry, countertops, sub-flooring, wainscotting and plywood decorative paneling, and laminates) and sealants (commonly used for sealing and weatherproofing; floors, sinks, cabinetry and furniture, decking and exterior siding) usually contain petroleum or organic solvents and a high level of VOCs. During drying after application, their solvents, or VOCs, evaporate into the atmosphere. Major harmful effects of these VOCs would include:

- Enhancing the formation of ozone and fine particulates in the atmosphere, thus causing smog and visibility impairment.
- Affecting adversely the indoor air quality and the health of both the workers and occupants.

In fact, VOCs may continue to be released into the environment long after the work is completed. With such a wide range of uses, these products have generally been among the common sources of VOCs which may cause both ambient and indoor air pollution.

How do VOCs affect us?

Exposure to VOCs may result in both acute and chronic health effects. Many of the VOCs are irritants and can cause depression of the central nervous system if inhaled in sufficient quantities. Some VOCs may even be hazardous, reproductive toxins and carcinogenic. VOCs cause smog which can irritate our eyes, nose and throat, or can worsen existing heart and respiratory problems such as asthma. Prolonged exposure to severe smog conditions may cause permanent damage to lung tissues and impair the immune system.

How should I use adhesives and sealants?

In response to growing concern about the harmful effects of the conventional solvent-based adhesives and sealants, many manufacturers have shifted to low-VOC formulation. Nowadays, low-VOC and water-based products are already available. To protect your and your family’s health, the workers’ health and the environment, you should use adhesives and sealants wisely by following these handy tips:

- Use low-VOC or water-based products. You may ask your vendors or the stores for these environmentally-more-friendly alternatives. You can also get more information about these products by referring to their Technical Data Sheets or Materials Safety Data Sheets.
- Specify low-VOC products to your contractors and in construction or specification documents.
- Choose VOC-free designs, such as carpet tiles which do not require adhesives, using nail strips instead of gluing carpet, or adpot other non-adhesive mechanical fastening systems.
- Use finished wood flooring products sealed with low-VOC or water-based sealant at the factory so that no adhesives or sealants are needed on-site.
- Use prefabricated solid wood for making cabinets and counters so that no adhesives or sealants are needed on-site.
- Consider refinishing the existing flooring instead of replacing it. Wood floors can be lightly machine-sanded and coated with low-VOC or water-based sealants.
- Follow manufacturer’s instructions in using and handling adhesives and sealants, and avoid excessive use of these materials and thinners.
- Look for products which do not contain formaldehyde or other toxic chemicals such as chloroform, ethylene dichloride, perchloroethylene and trichloroethylene.

What are the benefits of using low-VOC adhesives and sealants?

Low-VOC products are now more common than they were 10 years ago and their performance is greatly improved due to advancement in technology. Some low-VOC products are actually superior in their ability to adhere in the most difficult circumstances. The cost and curing time of some low-VOC products might even be comparable to conventional ones, while others might cost a bit more and need more time to cure. Nevertheless, using low-VOC alternatives, especially water-based products, would have the following benefits:

- Reduced emissions of smog-forming chemicals leading to reduced air pollution which can cause illnesses, such as asthma.
- Better indoor air quality. The much reduced VOC emissions can help prevent VOC-related odour nuisance and VOC-related incidents of eye and respiratory irritation, headaches, fatigue, and other adverse health effects.
- Reduced fire and explosion risks. There are also fewer restrictions for storage of low-VOC products which do not contain flammable solvents.
- A safer working environment for workers due to reduced exposure to hazardous chemicals, which could result in higher productivity.
- Reduced cost and time for cleaning as solvent is not needed for cleaning when water-based products are used.

For more information, please contact:

Environmental Protection Department
3315, Revenue Tower Gloucester Road, Wan Chai, Hong Kong
Telephone: 2839 3111
Or visit EPD’s website at: http://www.epd.gov.hk

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