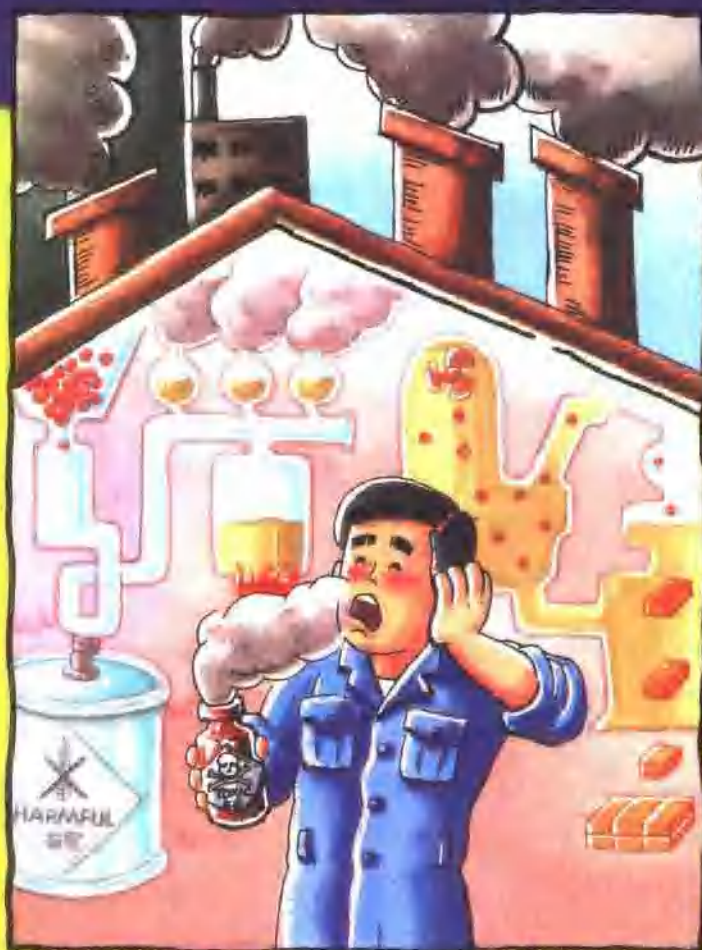


OCCUPATIONAL HEALTH PICTORIAL GUIDE

職業健康圖文簡介

INDUSTRIAL CHEMICALS AND YOU (METALS AND SOLVENTS)

工業化學品與你 (金屬及溶劑)



OCCUPATIONAL SAFETY
& HEALTH COUNCIL
職業安全健康局

LABOUR DEPARTMENT
HONG KONG
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Foreword

With the advance in science and technology, the use of industrial chemicals is increasingly popular. Hence, the growing concern for their potential need for employers and workers to know their precautionary com-

For this reason, an exhibition on "Occupational Health Perspectives on Industrial Chemicals and You" was organized by this Division in 1992. Subsequently, we suggested that the display materials of the exhibition could be re-used to publish a full-colour pictorial booklet, as their concise descriptions and illustrating photographs are easy to understand.

This pictorial guide is intended mainly for the general workers. For those readers who demand for more occupational health information, they may wish to refer to the other booklets published also by this Division (See appendix).

The Labour Department wishes to acknowledge the generous sponsorship of the Occupational Safety & Health Council for the full cost of organizing the said exhibition and printing this booklet.

Occupational Health Division
Labour Department, July 1993

隨著科技的進步，工業化學品的使用日益廣泛，這趨勢使人們關心它們對健康的潛在危害。而僱主與工人實有必要認識如何防範這些危害的控制措施。

勞工處職業健康科有見及此，特於1992年舉辦了「職業健康透視——工業化學品與你」的展覽會。由於展出資料的文字簡淺易明並具圖片說明，故獲建議將這些資料再予使用，出版一本附有彩色圖片的小冊子。

這本圖文簡介主要是為一般工人而設。讀者如需要更詳盡的職業健康資料，可參考本科出版的其他小冊子（見附錄）。

承蒙職業安全健康局資助舉辦上述展覽會及印刷這本小冊子的全部費用，特此鳴謝。

勞工處職業健康科
1993年7月



Metal Hazards

Metallic compounds are commonly handled in manufacture of ceramics, pigments, primers, batteries, PVC, alloys and in industrial processes such as mining, casting, melting, metalizing, electroplating, welding, soldering and brazing.

金屬的危害

經常接觸金屬化合物的工業包括陶瓷、顏料、底層漆、電池、塑膠及合金等的製造。與金屬有關的工序包括採礦、鑄造、熔煉、噴鍍、電鍍、銲接、錫鉛及銅鉛等。

Lead Poisoning

Industrial lead poisoning usually arises from the inhalation of lead dust or fume, although it can also enter the body by swallowing or occasionally through the skin from handling organic compounds. An usual effect of too much lead is on the bone marrow causing anaemia and fatigue. It can also attack the nervous system causing muscle weakness and paralysis such as wrist drop. Abdominal colic and constipation are other symptoms which may occur.

The prescribed occupations are those involving exposure to the dust or fumes of lead or lead compound and the risk is greatest when lead is heated above 500°C as in smelting, ship-breaking and scrap metal recovery.

鉛中毒

在工業界中的鉛中毒通常是由吸入鉛塵或鉛煙所致，雖然鉛亦可以因吞食，或於處理有機化學品時，在偶然的情況下，透過皮膚進入體內。骨髓積聚太多鉛通常是會引致貧血和疲勞。這種疾病亦會侵襲神經系統，因而引致肌肉衰弱和麻痺，例如腕下垂等。而腹部絞痛和便秘便是其他可能出現的症狀。

法例所規定的職業是指那些涉及接觸鉛或鉛化合物的塵埃或煙霧的工作，而最為危險是將鉛加熱至攝氏五百度以上時，例如在熔鉛、拆船和廢鐵翻新等行業。





High temperature lead processing such as melting, purification, welding and cutting may generate fumes and dust. Inhalation of such fumes and dust may cause lead poisoning.

在高溫製鉛工作中，如熔鉛、鍊鉛、鋅鉛及切鉛等，工人會有可能吸入含鉛塵霧而導致鉛中毒。



Tribasic lead, act as stabiliser, may be added to PVC plastics. Inhalation or ingestion of lead compounds may lead to poisoning.

製造 PVC 塑膠產品時，會加入含鉛的穩定劑，工人吸入或誤食這類化學粉末，便會有中毒的可能。

Cadmium Poisoning

Cadmium poisoning is usually the result of breathing fumes. In acute poisoning slight irritation of throat and cough may be followed a few hours later by a flu-like illness with chest tightness and pain, breathlessness, chills, sweating, back and limb pains, headache and dizziness. Severe lung or kidneys disability may arise. In chronic poisoning, symptoms of tiredness, cough may appear and damage to lungs, kidneys, liver or blood become evident.

The occupations at risk are those involving the use of cadmium such as cadmium coating processes, manufacture of plastics, welding cadmium plated metals, and manufacture of cadmium alloys.



Welding may generate metal fumes and toxic gases.

在銲接金屬物料時，高溫會產生各種金屬煙霧，吸入人體後會引致中毒。



鎘中毒通常是由於吸入煙霧所引起。如屬急性中毒，咽喉會感到輕微不適，引起咳嗽。數小時後，出現類似流行性感冒的病徵，包括胸口緊迫及胸痛、呼吸困難、打顫、出汗、背部及四肢疼痛、頭痛及暈眩等。

此外，亦會引致肺部或腎臟嚴重喪失功能。如屬慢性中毒，則會出現疲倦、咳嗽等病徵，而肺部、腎臟、肝臟或血液的功能亦會明顯受到損壞。

有這種危險的職業包括那些使用鎘的工作如塗鎘工序、塑膠製造業、鍍鎘金屬的焊接以及鎘合金製造業等。



Pigments used in ceramic, plastic and glass manufacturing may constitute of metal compounds such as sulphide and sulpho-selenide salts of Cadmium. Toxic dust will be generated if it is not properly handled.

陶瓷、塑膠及玻璃的顏料中，部份會含有金屬成份，例如鎘的硫化物及硫硒酸鹽，不小心處理會產生有毒塵埃。

Nickel Poisoning

Allergic contact dermatitis may occur from contact with nickel at work. Inhalation or absorption of dust or fumes containing nickel can cause pneumonitis. Nickel refinery workers have higher risk of cancer of the paranasal sinuses, the larynx and the lungs.

鎳中毒

工作時接觸到鎳可引致敏感性皮膚炎。吸入含鎳的塵埃或煙霧可能會導致肺炎。從事鎳的提煉工人可能有較高之鼻竇癌、喉癌及肺癌病患率。



Nickel is used for making coins, monel metal and stainless steel. Metal fumes will be evolved during metal casting.

錢幣、蒙銅及不銹鋼都含有鎳，在鑄造過程中釋放的煙霧吸入了可能會導致肺部損壞；而皮膚接觸也會有皮膚炎的可能。



Chrome Ulceration

Chrome particles enter the skin through small scratches or cuts. A round hard lump first appears and progresses to form an ulcer (known as 'chrome hole'). Ulcers may form in the nose as a result of inhalation of chrome salts.

Workers in chrome plating, anodic oxidation, textile, fur-dyeing and tanning industries may be exposed to the risk.

鉻鹽性潰瘍

鉻微粒經由抓損的傷處或微細傷口進入皮膚。最初出現圓形硬塊，繼而形成潰瘍（稱為「鉻孔」）。吸入鉻鹽則可引致鼻部潰瘍。

從事鍍鉻、陽極氧化、紡織、毛皮染色及製革工作的工人均有患病的危險。



Chronic acid mist may be given off in chromium plating process. Special precautionary measures must be taken to avoid workers' health being affected.

電鍍會產生鉻酸霧，我們要採取有效的控制預防措施，避免工人健康受損。



Manganese Poisoning

Inhalation or absorption of dust or fumes containing manganese can produce symptoms of tiredness, stiffness and spasm of muscles of legs, and effects on the nervous system which may affect gait, voice, facial expression and personality.

The occupations concerned are those which use manganese or manganese compound, as dry battery manufacture and glass making.



Some dyes used in leather and textile processing may contain chromium, zinc and manganese compounds. Precautions should be taken when handling these chemicals.

皮革及紡織品的染料，部份會含有鉻、鋅及錳的化合物。在工作過程中，化學品要小心處理。



吸入或吸收含有錳的塵埃或煙霧會產生腿部肌肉疲倦、僵硬和痙攣的症狀。此外，這種疾病又會影響神經系統，對步態、聲音、面部表情和性格造成影響。

與這種疾病有關的職業是那些使用錳或錳化合物的工作，例如製造乾電池和玻璃。



Dust of varying degree of danger may be thrown off from the material during grinding, effective local exhaust ventilation is usually essential.

打磨會令大量有害塵埃從物料上飛脫出來，有效的局部抽氣系統在很多情況下都是必需的。

Organic Solvents Hazards

Organic solvents are used as degreasing agents, diluents, cleaning agents, disinfectants and anaesthetics. Exposure to organic solvents from inhalation, skin absorption and ingestion may constitute health hazards.



Solvents are used in off-set printing for cleaning of ink rollers and blankets. The chemicals enter the body via inhalation and skin absorption.

柯式印刷工人常用多種溶劑來清除墨輪及膠布上的污漬，因此容易吸入溶劑蒸氣或經由皮膚吸收。



有機溶劑可用來作除油劑、稀釋劑、清潔劑、消毒劑及麻醉劑之用。吸入、食入或經皮膚吸收過量有機溶劑便會令健康受損。



Adhesives are used in making wooden furniture. Well ventilation should be maintained in the workshop.

木傢俬的製造過程使用大量黏合劑，工場必須保持良好通風，以保障工人健康。

Organic Solvents Poisoning

The symptoms and signs of poisoning depend on the exact compound involved, but may include a combination of the followings:

- | | |
|--|---|
| (1) Irritation of the upper respiratory tract leading to symptoms such as cough and dyspnoea | (10) Acute renal failure |
| (2) Anaesthetic effects | (11) Hypospermia and hypomotility of sperms |
| (3) Peripheral neuropathy | (12) Menstrual disturbance |
| (4) Encephalopathy | (13) Spontaneous abortion |
| (5) Hepatitis and hepatic cirrhosis | (14) Intrauterine fetal death |
| (6) Anaemia | (15) Infertility |
| (7) Leucopenia | |
| (8) Contact dermatitis | |
| (9) Cardiac dysrhythmia | |



Paint spraying workers may inhale solvents and paint pigments.

工人在噴油過程中，除會吸入溶劑外，還會吸入油漆顏料。



有機溶劑的中毒病徵取決於所吸入之溶劑。一般的病徵如下：

- (1) 刺激上呼吸道——引致咳嗽及氣促
- (2) 麻醉
- (3) 多發性週邊性神經炎
- (4) 溶劑性腦病
- (5) 肝炎、肝硬化
- (6) 貧血
- (7) 白血病
- (8) 接觸性皮膚炎
- (9) 心律失常
- (10) 急性腎衰竭
- (11) 精子過少，活力不足
- (12) 月經失調
- (13) 小產
- (14) 死產
- (15) 不育



Solvent vaporises when mixing and using adhesives.

混和及使用黏合劑也會放出溶劑蒸氣。





'Paint stripper' may constitute highly toxic solvents, precautionary measures should be taken.

「起漆水」屬於含高毒性溶劑，必須小心使用。



The wood dust which used for fur degreasing had absorbed large amount of solvents. Inhalation of the solvents may lead to health problems.

皮草除油的過程中，剝除木糠們含有大量溶劑，所以必須小心處理。





After dry cleaning, small amount of solvent remains in the clothes, the workshop must be kept well ventilated.

衣物乾洗後仍會留有少量殘餘乾洗劑，工場必須保持空氣流通。



Workers involve in paint or ink manufacturing may inhale toxic solvents.

工人在油漆及油墨的製造工場內工作，由於長期吸入溶劑，會引起慢性中毒。