

食物中的鄰苯二甲酸酯 PHTHALATES IN FOOD

業界諮詢論壇
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塑化劑 Plasticisers (1)

- 鄰苯二甲酸酯(phthalates)是塑膠添加劑，使塑膠變得柔軟，是一類常用的「塑化劑」。
- 塑化劑廣泛應用在塑膠製品中，多種日常消費品例如塑膠器具、玩具和食物接觸物料等均含有不同份量的塑化劑。
- 塑化劑會在使用塑膠產品時釋放到環境中，食物原料及製品可經由環境沾染微量的塑化劑。
- 食物接觸物料（例如聚氯乙烯塑膠）一旦接觸到食物，塑化劑便可能遷移到食物。
- Phthalates are a large group of chemicals that are commonly used to soften plastics polymers (otherwise known as “plasticisers”).
- Plasticisers are used in a wide range of consumer products including but not limited to plastic utensils, toys and food contact materials.
- Being ubiquitous in the environment due to extensive use in plastics, low levels of plasticisers can be transferred from the environment to food materials and products.
- When food contact materials such as PVC come into contact with food, the plasticisers may migrate into foodstuff.



塑化劑 Plasticisers (2)

- 業界不可在食物中刻意添加任何分量的塑化劑。
- 當中七種塑化劑 (DEP, DBP, BBP, DEHP, DNOP, DINP, DIDP) 設有安全參考值。
- Plasticisers should not be added intentionally to food in any quantity.
- Health-Based Guidance Values (HBGVs) are available for the seven phthalates (DEP, DBP, BBP, DEHP, DNOP, DINP, DIDP).



塑化劑 Plasticisers (3)

- 異常高劑量的塑化劑對實驗動物可產生毒性作用。
 - DEHP、DINP及DBP的急性口服毒性低。
 - 長期攝入DEHP會影響實驗動物的肝臟、腎臟及生殖和發育。DEHP已列為"或可能令人類患癌"的物質。
 - 長期攝入大劑量的DBP會影響實驗動物的生殖和發育情況，並導致實驗動物胎兒畸形。
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- Plasticisers have toxicity effects in experimental animals at unusual high doses.
 - The acute oral toxicities of DEHP, DINP and DBP are low.
 - Long-term exposure to DEHP is found to affect the liver and kidney as well as the reproduction and development of experimental animals. DEHP is classified as possibly carcinogenic to humans.
 - Chronic large-dose exposure to DBP was found to affect the reproduction and development and cause birth defect in experimental animals.



以往食物中濫用塑化劑事件

Past Abusive use of Plasticisers in Food

- 在 2011年5月起，台灣當局發現有食品非法添加塑化劑 (DEHP, DINP, DBP) 用作起雲劑，以圖降低生產成本和提高產品的穩定性。
- 食物安全中心當時在本港發現相關食品(主要涉及飲品)，塑化劑水平可高達 200,000 $\mu\text{g}/\text{kg}$ 以上。
- Starting in May 2011, authorities in Taiwan announced that they had found illegal use of plasticisers (DEHP, DINP, DBP) as a clouding agent in order to reduce cost and increase stability.
- CFS found that relevant products (mainly drinks) can contain plasticisers up to level exceeding 200,000 $\mu\text{g}/\text{kg}$.



以往食物中濫用塑化劑事件(2)

Past Abusive use of Plasticisers in Food

- 食物安全中心自此為該四種塑化劑設立行動水平，以便快速篩選濫用塑化劑的產品，盡快通知市民停止食用和業界停止售賣和進口有關產品。塑化劑自此納入恆常的食物監察計劃內。
- CFS had since established action levels for the four plasticisers in order to quickly screen out products abused with plasticisers, to inform the public to stop consumption and to remove the affected products from the market. Plasticisers were included in the Center's regular Food Surveillance Programme since.



食物安全中心以往的風險評估研究

Previous Risk Assessment Study conducted by CFS

- 食物安全中心曾進行一項有關“食物中的鄰苯二甲酸酯”(塑化劑)的研究, 檢測市面超過310個食物樣本中七種的塑化劑的水平。
- 是次研究顯示, 就算是塑化劑攝入量較高的成年市民, 每種塑化劑所攝入的分量, 都跟相關的安全參考值的距離甚遠 (最高只達13%)。因此市民無需過分擔心。
- 整體而言, 市民因攝入七種塑化劑的健康風險不高。
- CFS has conducted a research on “Phthalates in Food” and analysed over 310 samples for the level of seven types of phthalates.
- The results showed that even for the exposure to consumers that has higher plasticiser intake, the values were well within the corresponding HBGVs for individual phthalate (maximum 13%). Therefore, there is no point to worry unnecessarily.
- Overall, the health risk posed by the intake of the 7 plasticisers is low.



國際標準 International Standard

- 食品法典委員會尚未就食物或食物接觸物料中鄰苯二甲酸酯的含量訂立任何標準。
- 只有少數個別地區有就食物中可含的塑化劑訂定參考水平。
- The Codex Alimentarius Commission (Codex) has yet to establish any standard for phthalates in food or in food contact materials (FCMs).
- Only limited places have established reference levels/values for plasticisers in food.



本地情況 Local Situation

- 《公眾衛生及市政條例》（第132章）第54條訂明所有供出售擬供人食用的食物必須適宜供人食用。
- 食物安全中心由2011年就數種鄰苯二甲酸酯訂定食物中的行動水平。在2011年的事故後，鄰苯二甲酸酯已經被列入恆常的食物監察計劃中。
- Section 54 of the Public Health and Municipal Services Ordinance (Cap. 132) provides that all food intended for sale for human consumption must be fit for human consumption.
- CFS has established action levels on a number of phthalates in food since 2011. Phthalates were included in the food surveillance programme after the 2011 incident.

($\mu\text{g}/\text{kg}$)	DBP	DEHP	DINP	DIDP
行動水平 Action levels	300	1500 (食物 food) 5000 (烈酒 distilled spirits)	DINP + DIDP: 9000	



總結及建議 Conclusion & Recommendation

- 由於以往曾出現刻意在食物中添加塑化劑，而異常高劑量的塑化劑對實驗動物可產生毒性作用，故備受公眾關注。
- 政府、食物業界及市民三方通力合作是確保食物安全的重要元素。中心提醒業界選用合適的食物包裝及接觸物料，以盡量減少塑化劑轉移至食物的機會。
- Phthalates draw public concerns because of a history of deliberate abuses and their toxicity effects in experimental animals at unusual high doses.
- An active tripartite collaboration of the Government, the food trade and the public is essential in enhancing food safety. The CFS reminds the trade to choose the right food packaging and contact materials in order to minimise the transfer of plasticisers to food.



~ 多謝 Thank you ~

