

Plastic Materials - Hazardous Substances Alert on PAH and Nonylphenol 塑材-警惕危害物质多环芳烃和壬基苯酚

The low cost and variety of physical properties of plastics have made it very popular throughout these centuries. Many consumer products are based on plastic materials. However, there is an increasing awareness of its safety concerns both to human and to the environment recently.

Hazardous chemicals

PAH (polycyclic aromatic hydrocarbons)

PAHs usually exist in plastic or rubber materials. They are primarily formed by incomplete combustion of carbon-based materials or exist as residues of tar oil. Some of them are known to be carcinogenic. They have been found in parts like rubber handle of tools, cable sheath or black pigmented plastics.

Since 2005, PAH-containing products have aroused much public attention after high levels of PAH found in the handle of hammer in Germany. Cases turned up one by one. Recently, a hose of tire pump was found to contain over 1000 mg/kg of PAH!



At present, there is no legal limit restricting the level of PAHs in general consumer products, except the restriction on extender oils and tyres under the EC Directive [2005/69/EC](#)¹.

However, expert in Germany proposed a limit for 16 EPA listed PAHs and the limitations are widely adopted by European retailers in various kinds of Products.

近几个世纪以来，塑料因其低成本和多样化的物理性能而倍受人们的青睐。然而随着塑材在消费品中的广泛应用，现在人们越来越关注其对人类和环境的安全性影响。

危险化学品

PAH(多环芳烃)

多环芳烃通常存在于塑料和橡胶中。它们主要是由碳基物质的不完全燃烧形成或以焦油的残留物形式存在。其中一些具有致癌性。象工具的橡胶手柄，电缆护套或黑色塑料这些部件就含有这类物质。

自2005，在德国发现铁锤的手柄中含有大量的PAH后，含有PAH的产品引起了大众的关注，此后，又不断有此类案例发生，最近，发现一轮胎气泵软管中PAH的含量竟超过1000mg/kg!



目前，除了EC指令[2005/69/EC](#)¹对填充油和轮胎中的PAH含量有限制外，暂时还没有针对日用消费品的法定限量。

然而，德国专家针对16种EPA列出的PAHs提出了一个限量要求，该要求被欧洲各类产品的零售商所广泛采用。

Maximum allowed concentrations of PAHs
 PAHs的最大限量

| Parameter参数 | Skin contact up to 30s 与皮肤接触小于30秒 | Skin contact longer than 30s 与皮肤接触大于30秒 |
|-----------------------------|--------------------------------------|--|
| Benzo(a)pyrene 苯并(a)比 | 20 mg/kg | 1 mg/kg |
| Sum of 16 PAHs 16种PAHs总和 | 200 mg/kg | 10 mg/kg |

NP (Nonylphenol)

Nonylphenol is found in plastics as antioxidants and it could be used as additives in resin products. It is non-biodegradable and has been labeled as hormone disruptors and may cause estrogen sensitive breast cancer cell.

In Germany, large amount of nonylphenol had been discovered in the grasp of handsaw and umbrella.



NP and NPEOs (Nonylphenol ethoxylates) have been restricted to concentration below 0.1% in substances for processing like industrial and domestic cleaning, textile and leather processing, manufacturing of pulp and paper, and in cosmetic products marketed to Europe, under the EC Directive [2003/53/EC²](#) due to its hazard to human and environmental safety concern.

In recent years, some shoes/textiles buyers have also put the restriction on NP / NPEO as targets of compliance to their products.



壬基苯酚

壬基苯酚主要作为塑料的抗氧化剂和树脂的添加剂。由于其非生物降解性而被著以荷尔蒙杀手，甚至可导致乳腺癌。

在德国，手锯和伞的手柄中被发现有大量的壬基苯酚。



出于对人类和环境的安全影响，EC指令2003/53/EC²规定NP(壬基苯酚)和NPEOs(壬基酚聚氧乙烯醚)在以下物质中的最高浓度不得超过0.1%：这类物质主要用于行业和家庭洗涤、纺织和皮革、造纸，以及出口欧洲市场化化妆品的加工过程。

近几年，一些鞋子/纺织的买家也将此限量作为他们所需产品的要求。

¹ 2005/69/EC: http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l_323/l_32320051209en00510054.pdf

² 2003/53/EC: <http://www.eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:178:0024:0027:EN:PDF>

**Get ready on PAH-free and NP-free plastic product for the European market!
准备好了，欧盟市场要求的不含PAH和NP的塑料产品！**

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