



Food Contact Material Recall Notifications-2024 Report01

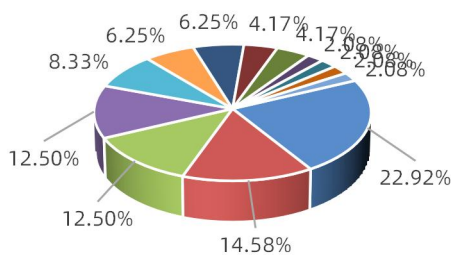
Food safety is closely related to the safety of food contact materials. With the progress of science and technology, the types of food contact materials are increasingly rich, which also brings new safety challenges. The European Union (EU) has implemented strict laws and regulations on all types of food contact materials, and set up an effective early warning and notification system. For products that violate the regulations, the EU will take necessary punishment measures.

In this report, we have summarized the notification information for food contact materials from the EU's Rapid Alert System for Food and Feed (RASFF) for the first quarter of 2024. There were a total of 39 notifications, with 23 of these cases concerning products originating from China, including two cases from Taiwan Province, China. The analysis is as follows:

1. Analysis of the reason for the notification

The reasons for this bulletin mainly come down to three categories: the risk of harmful chemicals, sensory quality defects and the use of unauthorized substances. In this quarter, the notification caused by the risk of harmful chemicals accounted for the vast majority. Specifically, the number of notifications of excessive migration of metal elements is the highest, with a total of 11 times, accounting for 22.92%; Followed by the migration of primary aromatic amines exceeded the standard for 7 times, accounting for 14.58%. For further details, please refer to Figure 1.

Figure1 Distribution chart of notification reasons



- The migration of metal elements exceeds the standard
- The migration of primary aromatic amines exceeds the standard
- The migration of phthalates exceeds the standard
- Sensory or quality defects
- The migration amount of photoinitiators exceeds the standard
- Unauthorized substances are used in plastic products
- Overall migration exceeds the standard
- Formaldehyde migration exceeds the standard
- The migration of 1,3-DCP and 3-MCPD exceeded the standard
- Melamine migration exceeds the standard
- Excessive content of volatile substances
- The migration of bisphenol A exceeds the standard
- Other reasons

◆ Reason for notification "ranking list"

■ No. 1: The migration of metal elements exceeds the standard (22.92%)

Analysis : In this report, the issue of excessive migration of metal elements in paper products, metal products, and ceramic products is more prominent. Excessive migration of metal elements in materials and products that come into contact with food poses a significant risk to human health. For instance, excessive aluminum may affect the health of the nervous system and bones; excessive copper may lead to liver and kidney damage; excessive lead is associated with mental retardation, behavioral issues, and kidney damage in children. Excessive arsenic can cause skin lesions and cardiovascular diseases, and it may also increase the risk of certain cancers. To protect consumer health, the European Union has enacted a series of regulations and standards to strictly control the migration of metal elements in materials that come into contact with food.

■ No. 2: The migration of primary aromatic amines exceeds the standard (14.58%)

Analysis : Primary aromatic amines are a type of toxic and harmful substance that can enter the human body through the skin, gastrointestinal tract, and respiratory tract. They may lead to changes in cell function and structure and, in severe cases, may cause cancer. The main reasons for the presence of primary aromatic amines in materials and products that come into contact with food include the use of raw materials or additives containing these substances during the production process. For example, some polyamide resins and certain inks and colorants, especially azo colorants, may contain primary aromatic amines.

■ No. 3: Excessive migration of phthalate esters & sensory quality defects (each accounting for 12.50%)

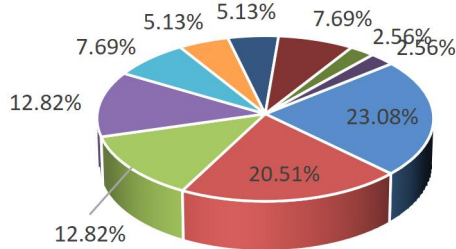
Analysis : Phthalates, which are widely used as additives in the plastics industry, are frequently encountered in both plastic products and materials used for food packaging. They pose potential health hazards, such as disrupting the endocrine system, causing reproductive health issues, and elevating the risk of developing chronic diseases. Defects in the sensory quality of materials and products that come into contact with food are primarily evident through off-odors, discoloration, the presence of foreign objects, and detachment of parts. These defects have the potential to compromise both the taste and safety of the food.



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2. Analysis of the Products for the notification

Figure 2 Distribution of notified product types



- Paper products
- Other plastic products
- Nylon plastic products
- Other products
- Ceramic and enamel products
- Metal products
- Melamine plastic products
- Plastic products containing plant fibers
- Silicone rubber products
- Bamboo and wood products

◆ Materials and products for notification "ranking list"

■ No. 1: Paper products (23.08%)

Analysis : In this report, paper products were notified 9 times, with 7 notifications in France. The reasons for the notifications involved the excessive migration of lead, phthalates, and photoinitiators. Excessive lead migration may be due to raw material contamination or the use of lead-containing pigments and inks. Phthalate esters, used as additives in the plastic industry, are typically sourced from the plastic coatings on paper products and adhesives containing this substance. Photoinitiators, predominantly used in the curing process of inks, are commonly found in cardboard and the adhesives for food packaging. The migration of photoinitiators may pose a threat to food safety and could lead to the risk of carcinogenesis and endocrine disruption.

■ No. 2: Other plastic products (20.51%)

Analysis : Other plastic products refer to all plastic products except for nylon, melamine, and plastic products containing plant fibers. These other plastic products were reported mainly because their total migration and primary aromatic amine migration exceeded the standard. The purpose of the comprehensive migration test is to measure the total amount of non-volatile substances that migrate from food contact products into simulants, which mainly include residual monomers, additives, and fillers. An important reason why the migration of primary aromatic amines in plastic products exceeds the standard is the use of colorants containing azo groups.

■ No. 3: Nylon plastic products (12.82%)

Analysis : Nylon, also known as polyamide, is a type of thermoplastic resin characterized by repeating amide groups (-[NHCO]-) in its main chain. There are various types of nylon, including aliphatic polyamides (PA), aliphatic-aromatic polyamides, and aromatic polyamides. The monomers used in the polymerization of nylon are also among the key raw materials for the synthesis of primary aromatic amines.

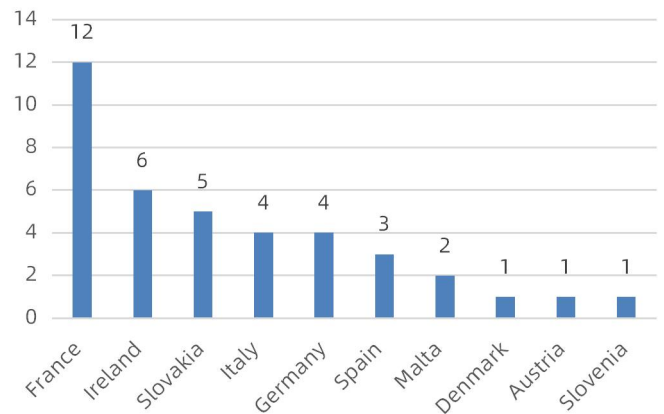
3. Analysis of the Countries for the notification

There were 39 notifications during this period, of which 23 were for products originating from China, representing 58.97% of the total. In terms of the countries issuing notifications, there were 10 involved this quarter. France led with 12 notifications, constituting 30.77% of the total notifications, followed by Ireland with 6 notifications, which made up 15.38% of the total. See Figure 3 & Figure 4 for details.

Figure 3 Notification of Chinese products



Figure 4 Number of notifications by countries





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Appendix: The relevant limit requirements of the notification of chemical risk :

Items	Law/Standard /Command	Limits	Material/Products
Overall migration	(EU)No 10/2011 and its amendments	10mg/dm ² or 60mg/kg	Plastic products
Specific migration of 19 metals		See the regulatory requirements for details	
Specific migration of primary aromatic amines		Not be detected	
Specific migration of phthalates		DBP: 0.12mg/kg; BBP: 6mg/kg; DEHP: 0.6mg/kg; DINP+DIDP: 1.8mg/kg; Sum(DBP+DIBP+BBP+DEHP)(calculated by DEHP): 0.6mg/kg; DAP: N.D.	
Use of unauthorized substances	(EU)No 10/2011 and relevant requirements of member states	Disable	Plastic products containing plant fibers
Specific migration of formaldehyde	(EU)No 10/2011 and its amendments (EU)No 284/2011	15mg/kg	Melamine plastic products
Specific migration of melamine		2.5mg/kg	
Arsenic	Fiche MCDA N°2 (V01-01/05/2016)	Not be detected	Ceramic, glass and enamel products
Aluminium		1mg/kg	
Cobalt		0.02mg/kg	
Volatile substance content	BfR Recommendation XV	0.5%	Silicone rubber products
3-MCPD	BfR Recommendation XXXVI	12µg/L	Paper and paperboard products
1, 3-DCP		Not be detected	
1-Hydroxycyclohexyl phenyl ketone	Fiche MCDA n°4 (V02 - 01/01/2019) 947-19-3	Not be detected (DL=0.01mg/kg)	Paper and paperboard products
Lead		0.01mg/kg	

Referenced Websites:

- <https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm&cleanSearch=1>

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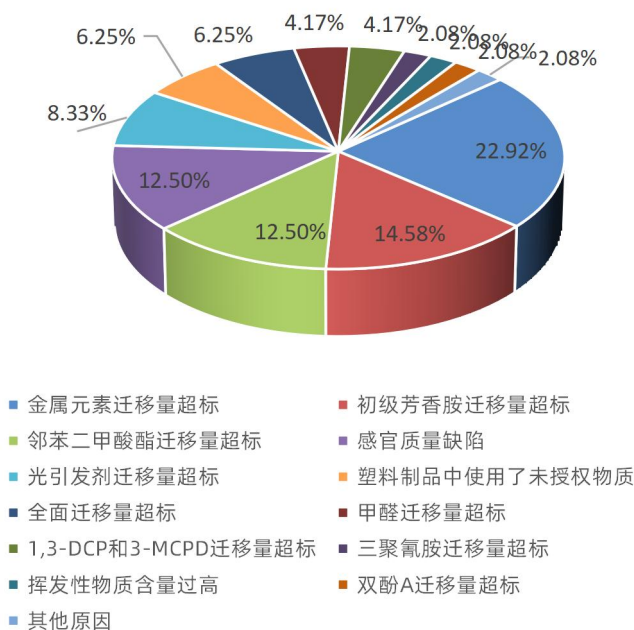
食品安全与食品接触材料的安全性密切相关。随着科技进步，食品接触材料的类型日益丰富，这同时也带来了新的安全挑战。欧盟（EU）针对所有类型的食品接触材料实施了严格的法规监管，并设立了一套有效的预警和通报系统。对于违反法规的产品，欧盟会采取必要的处罚措施。

本期汇总了2024年第1季度来自欧盟食品和饲料类快速预警系统（RASFF）的食品接触材料通报信息，共计39例，其中23例针对中国产品，包括2例中国台湾的产品，分析如下：

1. 通报原因分析

本期通报的原因主要归结为三大类：有害化学物质风险、感官质量缺陷和使用未授权物质。在本季度中，有害化学物质风险所引起的通报占据了绝大多数。具体而言，金属元素迁移量超标的通报数量最高，共计11次，占比22.92%；紧随其后的是初级芳香胺迁移量超标，共7次，占比14.58%。

图1 通报原因次数占比分布图



◆ 通报原因“排行榜”

■ No. 1: 金属元素迁移量超标 (占比22.92%)

风险分析：本期通报中，纸制品、金属制品和陶瓷制品中的金属元素迁移量超标问题较为突出。食品接触材料及制品中的金属元素迁移超标对人体健康构成重大风险。例如，铝元素过量可能影响神经系统和骨骼健康；铜元素过量可能导致肝脏和肾脏损伤；铅元素过量与儿童智力低下、行为问题及肾脏损伤有关；砷元素过量可引发皮肤病变、心血管疾病，并可能增加某些癌症的风险。为了保护消费者健康，欧盟已通过一系列法规和标准，对食品接触材料中的金属元素迁移量进行了严格限制。

■ No. 2: 初级芳香胺迁移量超标 (占比14.58%)

风险分析：初级芳香胺是一类有毒有害的物质，它们可以通过皮肤、胃肠道和呼吸道进入人体，可能导致细胞功能和结构的变化，并在严重时可能引发癌症。食品接触材料及制品中存在初级芳香胺的主要原因包括在生产过程中使用了含有此类物质的原料或助剂，如某些聚酰胺类树脂，以及部分油墨和着色剂，尤其是偶氮类着色剂，可能含有初级芳香胺类物质。

■ No. 3: 邻苯二甲酸酯迁移量超标&感官质量缺陷 (各占比12.50%)

风险分析：邻苯二甲酸酯是一类广泛使用的增塑剂，常见于塑料制品、食品包装材料中，它们对人体健康的潜在危害包括内分泌干扰、生殖健康问题、增加慢性疾病风险。食品接触材料及制品的感官质量缺陷主要表现为产品出现异味、异色、异物和部件脱落等问题，这些问题可能会影响产品的风味和安全性。

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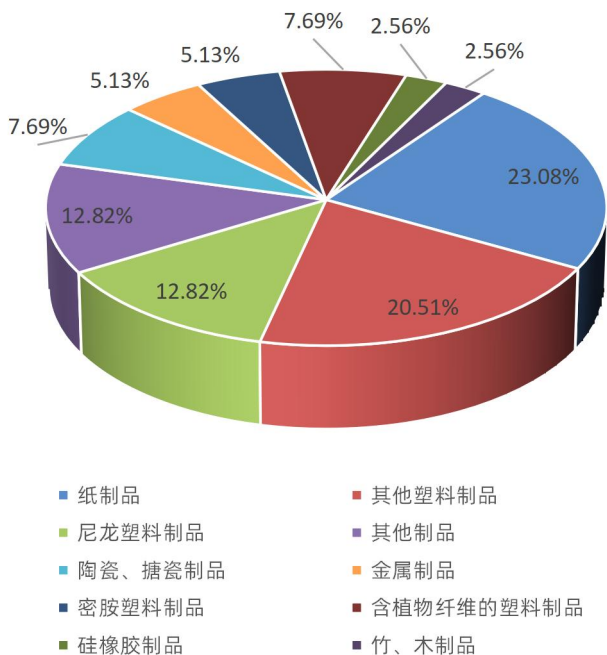
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2. 通报产品分析

图2 通报产品类型分布图



◆ 通报产品类型“排行榜”

■ No. 1: 纸制品 (占比23.08%)

风险分析: 本期通报中, 纸制品共被通报9次, 其中法国占7次。通报的原因涉及铅、邻苯二甲酸酯和光引发剂的迁移量超标。铅迁移量超标可能是由原材料污染或使用了含铅的颜料和油墨所致。邻苯二甲酸酯, 作为塑化剂, 通常来源于纸制品上的塑料淋膜和含有该物质的粘合剂。光引发剂主要用于油墨的固化过程, 常见于食品包装用纸板和粘合剂中。光引发剂的迁移可能对食品安全构成威胁, 带来致癌和内分泌干扰的风险。

■ No. 2: 其他塑料制品 (占比20.51%)

风险分析: 其他塑料制品是指除了尼龙、密胺和含植物纤维的塑料制品之外的所有塑料制品。这些其他塑料制品被通报的原因主要是全面迁移量和初级芳香胺迁移量超标。全面迁移量测试旨在测量食品接触制品迁移到模拟物中的非挥发性物质总量, 这些物质主要包括残留的单体、添加剂和填料。塑料制品中初级芳香胺迁移量超标的一个重要原因是使用了含有偶氮的着色剂。

■ No. 3: 尼龙塑料制品 (占比12.82%)

风险分析: 尼龙, 全称为聚酰胺, 是一类分子主链上含有重复酰胺基团(-[NHCO]-)的热塑性树脂。尼龙的种类繁多, 主要包括脂肪族聚酰胺(PA)、脂肪-芳香族PA, 以及芳香族PA。尼龙的聚合单体也是合成初级芳香胺的重要原料来源之一。

3. 通报国家分析

本期通报案例共计39例, 其中, 来自中国的产品被通报案例共23例, 占比为58.97%。发布通报的国家方面, 本季度共有10个国家。其中, 最多的是法国, 发起通报12例, 占通报总数的30.77%, 其次是爱尔兰, 发起通报6例, 占通报总数的15.38%。

图3 对华产品通报情况

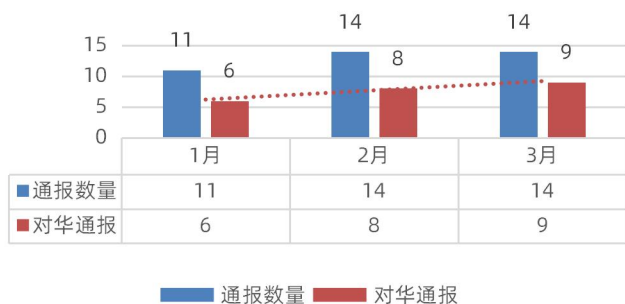
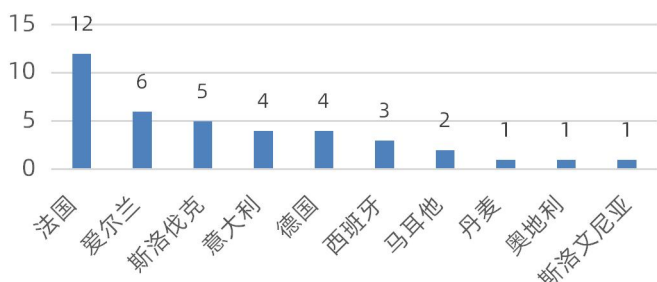


图4 各国通报数量



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附录：通报化学项目中需注意相关限值要求：

项目名称	法规/标准/指令	限值	材料/产品
全面迁移量	(EU)No 10/2011及其修订案	10mg/dm ² or 60mg/kg	塑料制品
金属迁移量19项		详见法规要求	
初级芳香胺迁移量		不得检出	
邻苯二甲酸酯迁移量		DBP: 0.12mg/kg; BBP: 6mg/kg; DEHP: 0.6mg/kg; DINP+DIDP:1.8mg/kg; 总和 (DBP+DIBP+BBP+DEHP) (以DEHP当量计):0.6mg/kg; DAP:N.D.	
未授权物质	(EU)No 10/2011及成员国相关要求	禁用	含植物纤维塑料制品
甲醛迁移量	(EU)No 10/2011及其修订案; (EU)No 284/2011	15mg/kg	密胺塑料制品
三聚氰胺迁移量		2.5mg/kg	
砷	Fiche MCDA N°2 (V01-01/05/2016)	不得检出	陶瓷、玻璃及搪瓷制品
铝		1mg/kg	
钴		0.02mg/kg	
挥发性化合物	BfR Recommendation XV	0.5%	硅橡胶制品
3-氯-1, 2-丙二醇(3-MCPD)	BfR Recommendation XXXVI	12µg/L	纸和纸板制品
1, 3-二氯丙醇(1, 3-DCP)		不得检出	
1-羟基环己基(苯基)酮	Fiche MCDA n°4 (V02 - 01/01/2019) 947-19-3	不得检出 (检出限=0.01mg/kg)	纸和纸板制品
铅		0.01mg/kg	

·参考网站:

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