



Food Contact Material Recall Notifications - 2023report 2

Food safety closely relates to food contact materials (FCM). With the development of FCM, kinds of safety problems accompany to appear too. Many countries lay down strict requirements to regulate FCM, such as EU, and it also build a special warning systems to exchange information about measures taken responding to serious risks detected in FCM.

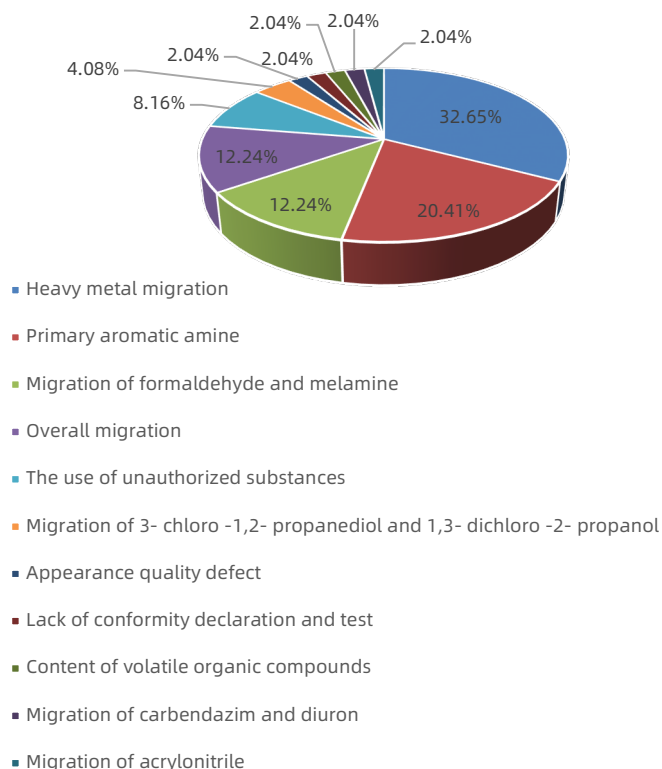
This report summarizes the notifications of food contact materials from Rapid Alert System for Food and Feed (RASFF) of the European Union in the second quarter of 2023. There were total 48 notifications in the second quarter of 2023 with **31 notifications for Chinese products**. The analysis is as follows:

1. Analysis of the reason for the notification

The reasons for the notifications in the first quarter mainly included chemical risks, the use of unauthorized substances and procedure documents. Among these notifications, the largest number of notifications were caused by the chemical risk, in which the excessive migration of heavy metal was notified the most, 16 times in total, accounting for about 32.65%.The second is the excessive migration of primary aromatic amines, a total of 10 times, accounting for about 20.41%.

See Figure 1 for details.

Figure 1 Distribution chart of the number (times) of notification reasons



◆ Reason for notification "ranking list"

■ No. 1: Migration of heavy metal (32.65%)

Analysis: The main notification products are metal products, ceramics, glass and enamel products. The raw materials of these products mainly come from minerals. Inferior mineral raw materials may contain a lot of harmful heavy metals. Secondly, the substandard processing technology may also lead to the easy dissolution of heavy metals in the products.

■ No. 2: Migration of primary aromatic amines (20.41%)

Analysis: The presence of monomer residues (such as nylon products) or specific additives (such as azo toner) in food contact materials may produce primary aromatic amines. The detection limit of primary aromatic amines in the new EU plastics regulation (EU)No. 2020/1245 has dropped to 0.002mg/kg, which makes the above-mentioned high-risk materials prone to unqualified conditions.

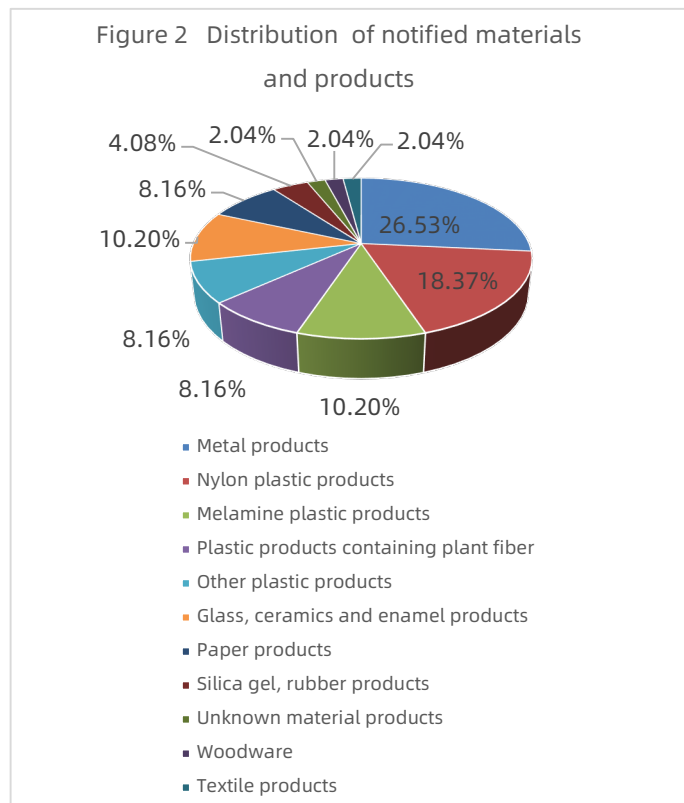
■ No. 3: Migration of melamine and formaldehyde & Overall migration (Each accounting for 12.24%)

Analysis: The main recalled products are melamine tableware and bamboo fiber tableware made of melamine, bamboo, a mixture of corn starch and bamboo fiber. Melamine resin is mainly polymerized by melamine and formaldehyde monomers. Inferior melamine materials will release a large amount of free formaldehyde and melamine monomers. Overall migration refers to the total amount of all non-volatile substances that migrate from food contact materials and products to food or food simulants in contact with them. The higher the overall migration value, the more non-volatile substances that migrate into food during actual use, and the greater the potential harm to human body.



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2. Analysis of the Products for the notification



◆ Materials and products for notification "ranking list"

■ No. 1: Metal products (26.53%)

Analysis: The main reasons for the unqualified metal products are that the manufacturers of metal products use inferior metal raw materials or recycled scrap metal materials; In the process of manufacturing metal products, the operation is not standardized, the process is immature and unstable.

■ No. 2: Nylon plastic product (18.37%)

Analysis: Polyamide is commonly known as Nylon, and its English name is Polyamide (PA for short), which is the general name of thermoplastic resin with repeated amide group $-[NHCO]-$ in the molecular main chain, including aliphatic PA, aliphatic-aromatic PA and aromatic PA. Nylon polymerization monomer is the most common source of primary aromatic amines.

■ No. 3: Melamine plastic products (10.20%)

Analysis: Melamine (MF) plastic products belong to polymer, and its monomers are formaldehyde and melamine. The main foreign notification items of melamine plastic products are that the migration of formaldehyde and melamine exceeds the standard. Inferior melamine raw materials will release a lot of free formaldehyde, and unstable processing environment temperature is more likely to cause high migration of melamine.

3. Analysis of the Countries for the notification

In the second quarter of 2023, there were 48 notifications of contact materials, of which 31 cases were notified for Chinese products, accounting for 64.58%. In terms of countries issuing notifications, there were 15 countries in the second quarter. Among them, Italy and Ireland initiated notification with 10 cases, accounting for 41.67% of the total notification, followed by Germany with 6 cases, accounting for 12.50% of the total notification. See Figure 3 & Figure 4 for details.

Figure 3 Notification of Chinese products

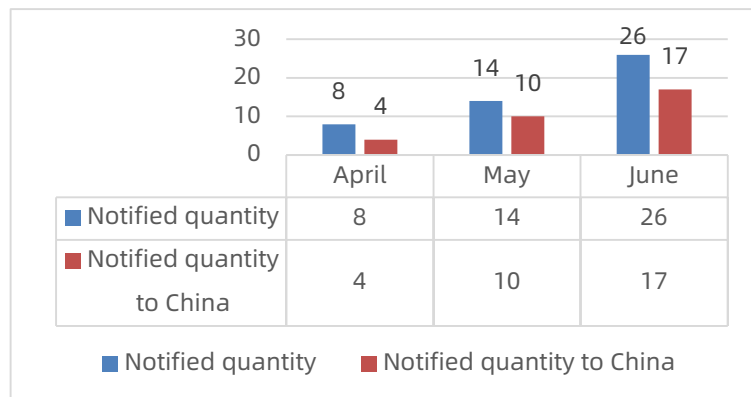
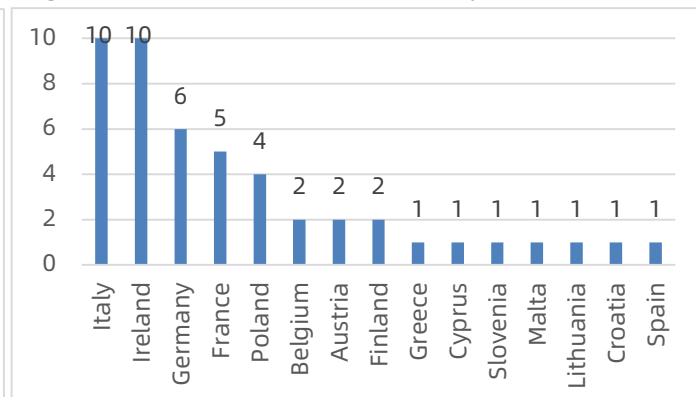


Figure 4 Number of notifications by countries





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

Items	Law/Standard /Command	Limits	Material/Products
Migration of primary aromatic amines	(EU)No 10/2011 and its amendments	Not detected	Plastic product (nylon)
Unauthorised use of substances	(EU)No 10/2011 and relevant requirements of member states	disable	Products containing plant fiber
Migration of formaldehyde	(EU)No 10/2011 and relevant requirements of member states,(EU)No 284/2011	15mg/kg	Bamboo fibreproduct, Plastic product (melamine & other)
Migration of melamine		2.5mg/kg	
Overall migration	(EU)No 10/2011 and relevant requirements of member states	60mg/kg or 10mg/dm ²	Plastic product
Migration of acrylonitrile		Not detected	
Overall migration	Decree of 21 March 1973 and Ministry of health Decree 195 of 6 August 2015 Decree No. 72 of May 9, 2019	8mg/dm ²	Metal products (oven metal frame, baking pan)
Nickel		0.1mg/kg	
Chromium,			
Manganese			
Arsenic	Fiche MCDA N°2 (V01-01/05/2016)	Not detected	Ceramic, glass and enamel products
Aluminum		1 mg/kg	
Cobalt		0.02mg/kg	
Lead	84/500/EEC	0.8mg/dm ²	Ceramic and glass products
Content of volatile constituents	BfR Recommendation XV	0.5%	Silicone products
3-monochlor-1,2-propanediol (3-MCPD)	BfR Recommendation XXXVI	12µg/L	Paper and paperboard products
1,3-dichloropropanol (1,3-DCP)		Not detected	

Referenced Websites:

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

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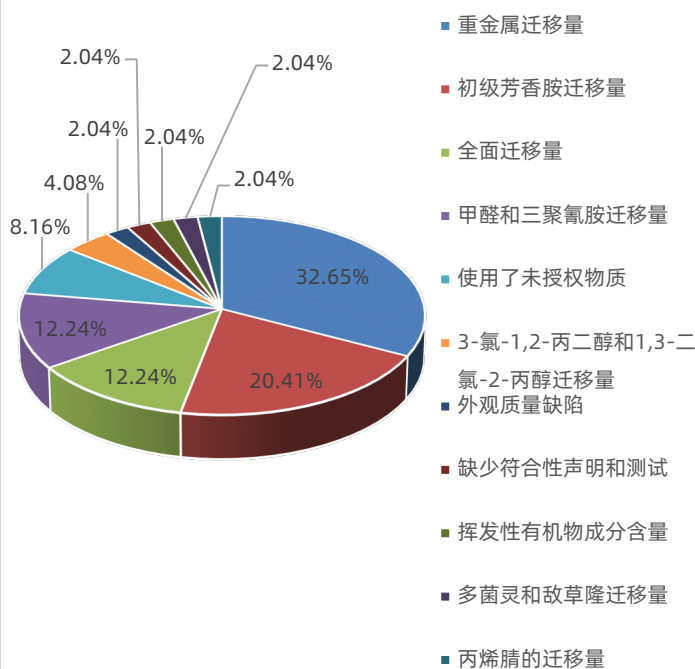
食品安全离不开食品接触材料的安全。随着科技的发展，食品接触材料的种类日益增多，由此引发的安全问题也不断出现。欧盟对各类食品接触材料都有严格的法规进行管控，并建立了一定的预警通报机制，对于不符合法规要求的产品采取相应的处罚措施。

本期汇总了2023年第2季度来自欧盟食品和饲料类快速预警系统（RASSF）的食品接触材料通报信息，共计48例，其中31例针对中国产品，分析如下：

1. 通报原因分析

本期通报的原因主要分为有害化学风险、使用未授权物质和程序文件三类。其中，由化学风险的使用引起的通报最多，其中重金属迁移量超标的通报最多，共16次，占32.65%；其次是初级芳香胺迁移量超标，共10次，占20.41%。详见图1。

图1 通报原因数量（次）占比分布图



◆ 通报原因“排行榜”

■ No. 1: 重金属迁移量（占比均为32.65%）

风险分析：主要通报产品为金属制品、陶瓷、玻璃及搪瓷制品。这些产品原材料主要来源于矿物。劣质矿物原料可能含有大量有害重金属物质。其次，加工工艺不达标也可能导致产品中重金属容易溶出。

■ No. 2: 初级芳香胺迁移量（占比20.41%）

风险分析：食品接触材质中存在单体残留物（如尼龙制品）或特定的添加剂（如偶氮色粉）都可能会产生初级芳香胺。欧盟塑料新法规（EU）No. 2020/1245中初级芳香胺的检出限下降到0.002mg/kg，导致上述高风险材质容易出现不合格情况。

■ No. 3: 甲醛和三聚氰胺迁移量&全面迁移量（占比均为12.24%）

风险分析：主要召回产品为密胺餐具以及由密胺、竹子以及玉米淀粉和竹纤维混合材料制成的竹纤维餐厨具。密胺树脂主要由三聚氰胺和甲醛单体聚合而成，劣质的密胺材料会释放出大量游离的甲醛和三聚氰胺单体。2）全面迁移指从食品接触材料及制品中迁移到与之接触的食品或食品模拟物中的所有非挥发性物质总量。不合格原因是生产企业对原料把控或生产工艺不严格造成。

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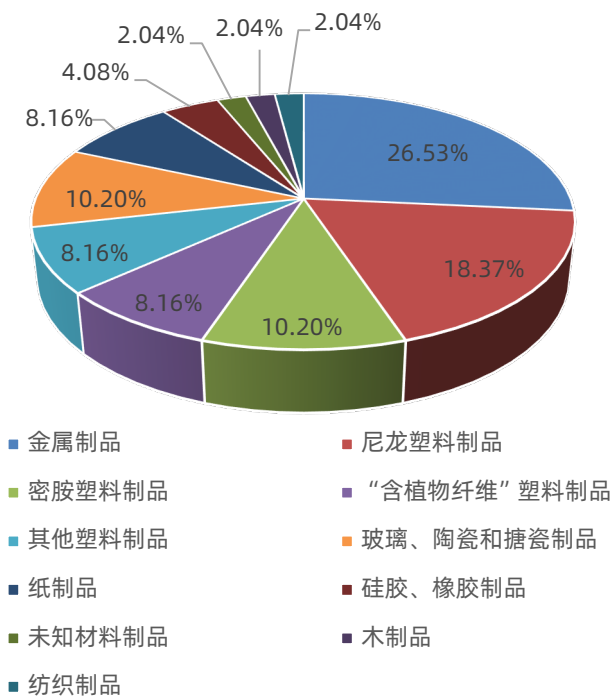
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2. 通报产品分析

图2 通报产品类型分布图



◆通报制品“排行榜”

■ No. 1: 金属制品 (占比26.53%)

风险分析: 金属制品不合格原因主要为, 金属制品的生产企业使用了劣质的金属原料或回收的废金属料; 在制造金属产品过程中, 操作不规范, 工艺不成熟、不稳定等。

■ No. 1: 尼龙塑料制品 (均占比18.37%)

风险分析: 聚酰胺俗称尼龙 (Nylon), 英文名称Polyamide (简称PA), 是分子主链上含有重复酰胺基团-[NHCO]-的热塑性树脂总称, 包括脂肪族PA, 脂肪-芳香族PA和芳香族PA。尼龙聚合单体是初级芳香胺最常见的来源。

■ No. 3: 密胺塑料制品 (占比10.20%)

风险分析: 密胺 (三聚氰胺, Melamine, 简称MF) 塑料制品属于高分子聚合物, 其单体为甲醛和三聚氰胺。密胺塑料制品主要的国外通报项目就是甲醛和三聚氰胺迁移量超标, 劣质的密胺原材料会释放出大量的游离甲醛, 不稳定的加工环境温度更容易引起三聚氰胺迁移量偏高。

3. 通报国家分析

本期通报案例共计48例, 其中, 来自中国的产品被通报案例共31例, 占比为64.58%。发布通报的国家方面, 本季度共有15个国家。其中, 最多的是意大利和爱尔兰, 均发起通报10例, 共占通报总数的41.67%, 其次是德国, 发起通报6例, 占通报总数的12.50%。

图3 对华产品通报情况

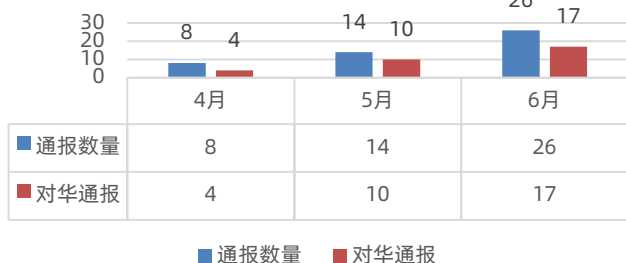


图4 各国通报数量



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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
初级芳香胺迁移量	(EU)No 10/2011及其修订案	未检出	塑料制品（尼龙制品）
未授权物质	(EU)No 10/2011及成员国相关要求	禁用	含植物纤维制品
甲醛迁移量	(EU)No 10/2011及其修订案；	15mg/kg	含竹纤维制品、 塑料制品(密胺&其他)
三聚氰胺迁移量	(EU)No 284/2011	2.5mg/kg	
全面迁移量	(EU)No 10/2011及其修订案	60mg/kg or 10mg/dm ²	塑料制品
丙烯腈迁移量		未检出	
全面迁移量	Decree of 21 March 1973 and Ministry of health Decree 195 of 6 August 2015 Decree No. 72 of May 9, 2019	8mg/dm ²	金属制品（烤箱金属架、烤盘）
镍		0.1mg/kg	
铬			
锰			
砷	Fiche MCDA N°2 (V01- 01/05/2016)	未检出	陶瓷、玻璃及搪瓷制品
铝		1mg/kg	
钴		0.02mg/kg	
铅	84/500/EEC	0.8mg/dm ²	陶瓷和玻璃制品
挥发性化合物	BfR Recommendation XV	0.5%	硅胶制品
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)		未检出	

·参考网站：

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

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