

**The Swedish Chemicals Agency's
Analyses in conjunction with
Enforcement 2017**

ENFORCEMENT 6/18



The Swedish Chemicals Agency is supervisory authority under the Government. We work in Sweden, the EU and internationally to develop legislation and other incentives to promote good health and improved environment. We monitor compliance of applicable rules on chemical products, pesticides and substances in articles and carry out inspections. We review and authorise pesticides before they can be used. Our environmental quality objective is A Non-toxic Environment.

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Preface

The Swedish Chemicals Agency is the central enforcement authority for regulations within the field of chemicals. One aspect of the Agency's supervisory activities consists of conducting chemical analyses of products in order to check that they do not contain hazardous chemical substances to which legal restrictions apply. This report is a synthesis of the analyses conducted by the Swedish Chemicals Agency's Enforcement and Registries Department over the course of 2017. The report does not encompass those analyses that other parts of the Agency have requested. The synthesis has been performed by Frida Ramström at the Unit for Enforcement of Rules – Pesticides and Articles.

Contents

Summary	5
Sammanfattning	6
1 Introduction	7
1.1 About the Swedish Chemicals Agency	7
1.2 Background	7
2 Analyses	7
2.1 Toys and childcare articles.....	9
2.2 Clothing, shoes and accessories	11
2.3 Electrical products	13
2.4 Building materials and furnishings	15
2.5 Sports and leisure equipment	17
2.6 Chemical products	19
2.7 Packaging.....	19
3 Discussion	20
3.1 Overview of the Swedish Chemicals Agency's analyses	20
3.2 What do the analyses lead to?.....	22
3.3 How can the results be used?.....	23
3.4 Future analytical requirements.....	23
3.5 More information	24
4 Appendixes	25
Appendix 1 - Glossary	25
Appendix 2 - Substances.....	26
Appendix 3 - Legislation	27

Summary

The Swedish Chemicals Agency's Enforcement and Registries Department makes inspections of companies manufacturing, importing and providing chemical products and articles that have been treated with or contain chemical substances. One part of the inspection activity is chemical analyses of products to check that they fulfil the requirements of the legislation. This report is an account of analyses made by the Enforcement Department during 2017.

The products that have been analysed are within the categories *toys and childcare articles, clothing, shoes and accessories, electrical products, building materials and furnishings, sports and leisure equipment* and *chemical products*. In total, 512 products have been tested during 2017 and 17 percent of these contained restricted substances in levels above the limit values in legislation. This proportion is at the same level as previous years.

The category with the highest portion of forbidden substances was *electrical products*. *Sports and leisure equipment* was the category where we found the lowest portion of forbidden substances.

We informed the companies that had sold the products containing forbidden substances and in most cases, they made a voluntary withdrawal from the market. In the cases when they did not do this, we made a decision on ban on sale. We share the results from the analyses with other enforcement authorities and the public also receive some information. In this way, others may use the results and focus their effort on the products with the highest risk of containing hazardous and forbidden substances.

In the future, we will continue to prioritize enforcement of the product categories mentioned in this report and focus on the products that we estimate have the highest risk of containing dangerous substances. Chemical analysis of articles and chemical products is an important part of this work. We will continue to publish the results in separate reports for single projects and in annual compilations like this one.

Sammanfattning

Kemikalieinspektionens tillsynsavdelning inspekterar företag som tillverkar, importerar och säljer kemiska produkter och varor som innehåller eller har behandlats med kemiska ämnen. Som en del av kontrollen utförs kemiska analyser av produkter för att kontrollera att produkterna klarar de krav som finns i lagstiftningen. Denna rapport är en sammanställning av de analyser som tillsynsavdelningen har gjort under 2017.

De produkter som Kemikalieinspektionen har analyserat sorterar under kategorierna *leksaker och barnvårdsartiklar, kläder, skor och accessoarer, elektriska produkter, byggvaror och inredning, sport- och fritidsvaror samt kemiska produkter*. Totalt har 512 produkter analyserats under 2017 och 17 procent av dessa innehöll begränsade ämnen i halter över gränsvärdena i lagstiftningen. Det är ungefär samma nivå som tidigare år.

Den varugrupp som hade störst andel varor med otillåtna ämnen i var *elektriska produkter*. *Sport- och fritidsvaror* var den kategori varor som vi hittade minst otillåtna ämnen i.

Vi informerade företagen som hade sålt de varor som vi hittade förbjudna ämnen i och i de flesta fall valde de att frivilligt dra tillbaka varorna från marknaden. I de fall de inte gjorde det tog vi beslut om försäljningsförbud. Analysresultaten delas med andra länders tillsynsmyndigheter och allmänheten får också ta del av viss information. På så sätt kan andra aktörer dra nytta av resultaten och själva rikta insatser mot de varor där det finns stor risk att hitta skadliga och förbjudna ämnen.

Vi kommer även fortsättningsvis att prioritera tillsyn av de varugrupper som beskrivs i denna rapport och fokusera på de varor som vi bedömer har störst risk för innehåll av farliga ämnen. Att göra analyser av varor och kemiska produkter är en viktig del av vårt arbete. Vi kommer att publicera resultaten i enskilda rapporter för enskilda projekt samt i årssammanställningar som denna.

1 Introduction

1.1 About the Swedish Chemicals Agency

The Swedish Chemicals Agency is a supervisory authority under the Government of Sweden. We work in Sweden, in the EU and internationally to develop legislation and other instruments to reduce the risks of chemicals to humans and the environment. The Enforcement Department inspects that companies comply with the legislation for chemical products, pesticides and articles. We also provide guidance regarding enforcement and inspections to municipalities and county administrative boards and we cooperate with enforcement authorities in other member states within the EU. The Swedish Chemicals Agency is responsible for the national goal *A non-toxic environment* set by the Swedish Government.

1.2 Background

As one aspect of the enforcement activities, the Swedish Chemicals Agency has checked the content of chemical substances in articles and chemical products using analyses. These chemical analyses have been conducted partly by using the Agency's own XRF¹ instrument and partly by the help of accredited external laboratories. The aim of this report is to synthesise and provide an overview of information and results from the analyses ordered by the Swedish Chemicals Agency over the course of 2017. The report does not encompass those analyses that other parts of the Swedish Chemicals Agency have ordered, for example surveys of chemical substances in articles.

The regulations that the Swedish Chemicals Agency enforces are largely common to the entire EU. The legislation differentiates between *chemical products* and *articles*. Chemical products are individual chemical substances or mixtures of substances, commonly in liquid or powder form. Examples of these are paint, glue and various types of pesticides. Articles are objects where the physical form, surface or design has greater significance to their function than the chemical content, with examples being clothing, electronics and dolls.

Appendix 1 contains a glossary explaining abbreviations that appear in the report and a short description of the substances mentioned in the report can be found in Appendix 2. A list and short description of the regulations mentioned in this report can be found in Appendix 3.

Conjunctions of the chemical analyses made by the Swedish Chemicals Agency can be found in reports for 2008-2013², 2014-2015³ och 2016⁴.

2 Analyses

The majority of analyses ordered by the Swedish Chemicals Agency over the course of 2017 have concerned substances in articles, but a few chemical products have also been analysed. In some cases, there are separate reports (see section 3.5 *Further information*). Please note

¹ XRF (X-ray Fluorescence) is a technique based on X-rays that is able to measure the content of elements in certain materials.

² Tillsyn 5/14 – Kemikalieinspektionens analyser i samband med tillsyn 2008-2014, juni 2014 (<http://www.kemi.se/global/tillsyns-pm/2014/tillsyn-5-14-analyser-2008-2013.pdf>)

³ Tillsyn nr 1/16 – Analyser i samband med tillsyn 2014-2015, februari 2016 (<http://www.kemi.se/global/tillsyns-pm/2016/tillsyn-1-16-kemikalieinspektionens-analyser-i-samband-med-tillsyn-2014-2015.pdf>)

⁴ Tillsyn nr 6/17 – Analyser i samband med tillsyn 2016, mars 2017 (<https://www.kemi.se/global/tillsyns-pm/2017/tillsyn-6-17-kemikalieinspektionens-analyser-i-samband-med-tillsyn-2016.pdf>)

that analyses reported here do not provide a representative picture of the market as a whole. We select products for testing based on highest risk of containing hazardous chemicals and not on random sampling.

In the section below, the articles have been divided into groups of articles that we have prioritised for inspection⁵ and involved in our action plan for a non-toxic everyday environment⁶. A figure depicting the analytical results appears at the end of each section. The number of products that do not comply with the legislative requirements is stated in red. Orange indicates the number of articles in which substances included on the Candidate List in the REACH Regulation (read more about this in Appendix 3) are present in concentrations in excess of 0.1 percent by weight. In the case of these articles, the recipient must be provided with information about the content of such substances. Yellow bars show how many articles contain restricted substances in concentrations below the limit values or substances that are not regulated for the specific group of articles but which still have hazardous properties. In a few cases, yellow may also indicate that there is an exemption for some applications or that the product was put on the market before the substance was forbidden. Products which did not contain any of the substances looked for in the analyses are shown in green. The reason why the products are divided into these four groups is to visualise the substances found in the analysis even though they are not prohibited. For some groups of articles, there are very few substances that are restricted, but substances with hazardous properties can still be found in these. One such example is sports equipment, where substances that are restricted in groups such as toys are permitted.

In addition to restricted substances, during 2017, we have also been searching for active substances with biocidal function in some articles. Active substances can be added to an article to give it anti-bacterial properties, for example “anti-odour”. Only active substances approved for use in certain types of articles may be added and if an article is marketed with claim about biocidal function, the article must be labelled in a certain way. When we requested the articles, there was still an exemption in the regulation meaning that approval for the substances was not needed yet. Because of this, the active substances that we found were allowed in all cases, although the articles could lack the required labelling. When we have found active substances, these are shown in yellow colour.

The review below does not contain a detailed account of the quantity of different substances found or in which specific products these are found. For more detailed information, please see section 3.5 *Further information* or contact the Swedish Chemicals Agency.

⁵ Tillsyn nr 4/16 - Strategi för effektiv tillsyn över kemikalier i varor, March 2016 (<http://www.kemi.se/global/tillsyns-pm/2016/tillsyn-4-16-strategi-for-tillsyn-over-kemikalier-i-varor.pdf>)

⁶ Handlingsplan för en giftfri vardag 2011-2014 – Skydda barnen bättre (<http://www.kemikalieinspektionen.se/global/rapporter/handlingsplan-giftfri-vardag.pdf>)

2.1 Toys and childcare articles

We have tested 93 different types of toys and childcare articles and found prohibited concentrations of:

- Phthalates and SCCPs in five plastic toys
- Lead, cadmium and SCCPs in nine electrical toys
- Nickel in one metal part in one toy
- Phthalates and SCCPs in one childcare article

2.1.1 Plastic toys

During the year, we controlled 48 toys made of plastic, mostly soft plastic. Five of these contained too high levels of phthalates (DEHP and DINP) and/or SCCPs. Seven of the plastic toys contained restricted substances in low levels (DEHP, DIBP and SCCPs). In the remaining 36 plastic toys, we could not find any of the substances that we sought for.

2.1.2 Electrical toys

24 electrical toys were controlled and in nine of these, we found unallowed substances (lead, cadmium and SCCPs) in high concentrations. In four electrical toys, we found low concentrations of restricted substances (lead, cadmium and DIBP) and in one case the level of lead was allowed due to an exemption in the regulation. In ten electrical toys we did not find any of the substances that we were looking for.

2.1.3 Colour, slime and modelling clay

During 2017, we tested 13 toys that were colour, slime or modelling clay in regard to some allergenic preservatives. In five of these, we found the preservatives that we were looking for (MIT, CIT, BIT). In one case, the concentration was high enough to require a warning on the packaging. These controls were made before the new limit values for these substances was adopted in November 2017. In the five toys, the levels of preservatives were higher than the new limit values. In the remaining eight toys, we did not find the preservatives.

2.1.4 Metal toys

We controlled five toys made of metal during the year. From one of these, a key ring, the nickel release was above the limit value. In the other four, we did not find the substances sought for.

2.1.5 Childcare articles

During the year, we tested three childcare articles, one mattress for changing table, one bedcover made of plasted terry and one nursing pillow. In the mattress, we found DEHP and SCCPs in concentrations above limit values. In the other two articles, we did not find the substances that we sought for.

2.1.6 Overview of toys and childcare articles

Figure 1 and Figure 2 contain overviews of how many of the various types of toys and childcare articles that have been tested and the results of the analyses.

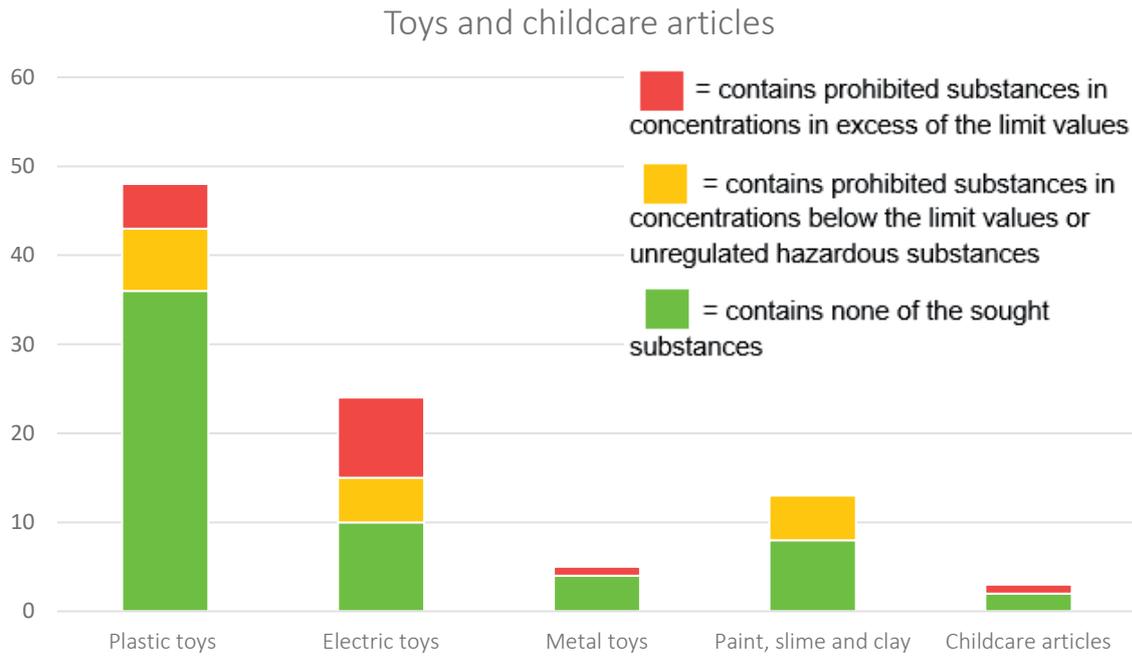


Figure 1. Toys that have been analysed by the Swedish Chemicals Agency during 2017.

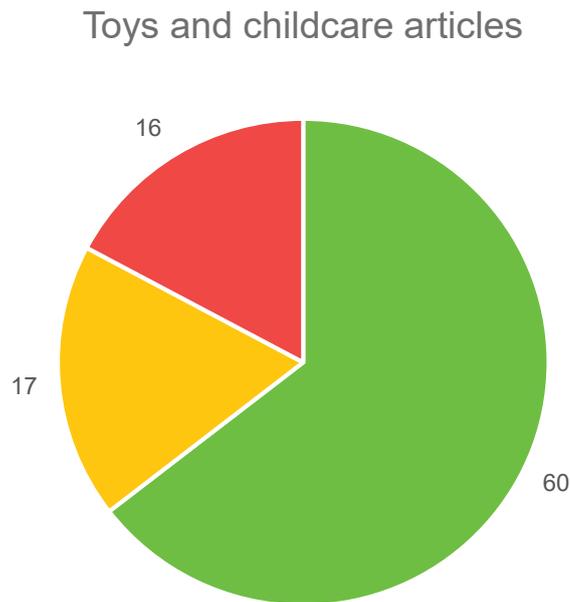


Figure 2. The number of toys and childcare articles that contained restricted substances in excessive concentrations (red), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.2 Clothing, shoes and accessories

In the category clothing, shoes and accessories, we have tested 111 articles and found prohibited concentrations of:

- Lead and SCCPs in eight bags and casings
- Lead in a watch and in a bracelet
- SCCPs in a working glove

2.2.1 Bags and casings

During the year, we have analysed 57 bags, accessories to bags or other kinds of casings. Eight of these contained too high levels of the restricted substances lead and SCCPs. In 16 bags and casings we found more than 0.1 percent by weight of DEHP and SCCPs (concentration below the limit value) that are listed on the Candidate List. 14 bags and casings contained low concentrations of the substances DEHP, DBP, bisfenol A, DMFa, DMAC, lead and the phthalates DINP and DIDP. The last two are not restricted for this type of product. In the 19 other articles, we did not find any of the substances that we were looking for.

2.2.2 Clothing

We tested 27 clothes during the year and in four of these we found copper, zinc pyrithione, silver, titan dioxide and MIT which were used as biocides. These substances were allowed for use in clothes at the moment when they were put on the market. In the other 23 clothes, we did not find the substances sought for.

2.2.3 Shoes and soles

During 2017, we controlled the chemical content in 13 shoes and soles. In four of these we found the biocidal substances copper, BIT and zinc pyrithione. These substances were allowed for use in shoes and soles at the moment when they were put on the market. In the other nine shoes and soles, we did not find the substances sought for.

2.2.4 Jewellery and watches

We have tested nine pieces of jewellery and watches and two of these contained prohibited concentrations of lead. One jewellery made of plastic contained low levels of the substances DMFa and DMAC. In the six other jewellery and watches, we did not find any of the substances that we sought for.

2.2.5 Working gloves

During the year, we controlled five working gloves and in one we found an unallowed level of SCCPs. One pair of gloves contained more than 0.1 percent of the substance DEHP that is on the Candidate List. One pair of gloves contained the phthalates DINP and DIDP that are not restricted for this category of articles. Two pair of gloves did not contain any of the substances looked for.

2.2.6 Overview of clothing, shoes and accessories

Figure 3 and Figure 4 contain overviews of how many of the various types of articles in this product group that have been tested and the results of the analyses.



Figure 3. Clothing, shoes and accessories that have been analysed by the Swedish Chemicals Agency during 2017.

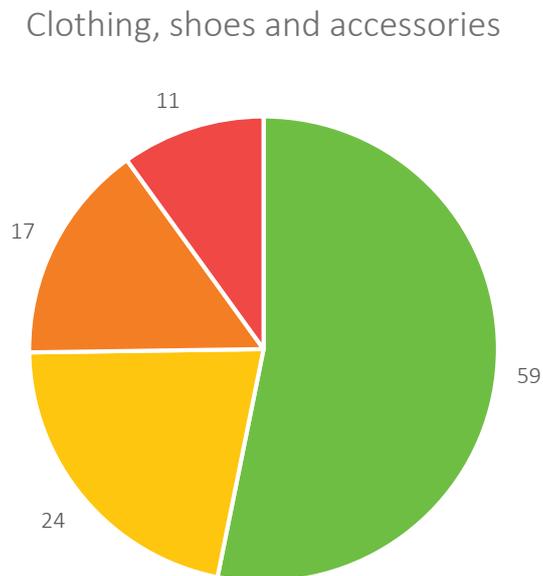


Figure 4. The number of articles in the group clothing, shoes and accessories that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1 percent (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.3 Electrical products

We have analysed 108 electrical products and we have found prohibited concentrations of:

- Lead, cadmium and SCCPs in 14 lighting products
- Lead and SCCPs in eight household appliances
- Lead and SCCPs in one pair of headphones

2.3.1 Lighting

During the year, we have tested 34 electrical lighting products. 15 of these contained lead, cadmium, and SCCPs in concentrations above limit values. Five of the products contained low levels of lead, SCCPs, DEHP, DINP and DIBP. In the remaining 14 products, we did not find the substances that we sought for.

2.3.2 Household appliances

We have controlled 21 electrical household appliances and eight of these contained too high concentrations of lead and SCCPs. Three contained low levels of SCCPs, DEHP, DBP and DIBP or the phthalates DINP and DIDP. The last two are not restricted for this product group. In ten household appliances, we did not find the substances that we searched for.

2.3.3 Headphones

During 2017, we have analysed 13 headphones and of them, one contained prohibited concentrations of lead and SCCPs. Another headphone contained DEHP above 0.1 percent, which means that recipients of the article should be given information about the content. Three headphones contained low levels of DEHP and DIBP or the unrestricted phthalates DINP and DIDP. In eight of the tested headphones, we did not find any substances.

2.3.4 Cables

We controlled 13 cables during the year and five contained the substances lead and/or SCCPs in concentrations above limit values. Three cables contained low levels of SCCPs, DEHP and DIBP or the unrestricted phthalates DINP and DIDP. The remaining five cables did not contain any of the substances sought for.

2.3.5 Other electronics

During the year, we have tested 27 articles in the category other electronics. In ten of these, we found lead and cadmium in concentrations that are prohibited. Two articles contained DEHP and SCCPs in concentrations that activates the requirement for information in the REACH Regulation. In four articles, we found lead, DEHP, DIBP and DBP in low levels or the unrestricted phthalates DINP and DIDP. In eleven articles, we did not find any of the substances that we searched for.

2.3.6 Overview of Electrical products

Figure 5 and Figure 6 contain overviews of how many articles in this group of electrical products that have been tested and the results of the analyses.

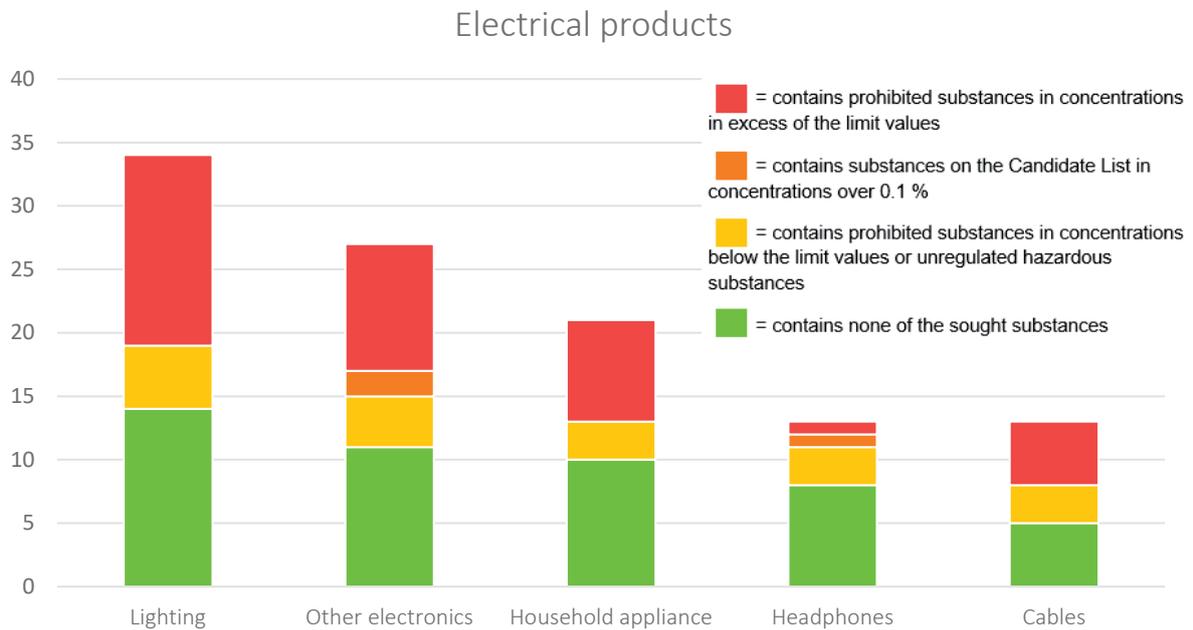


Figure 5. Electrical products that have been analysed by the Swedish Chemicals Agency during 2017.

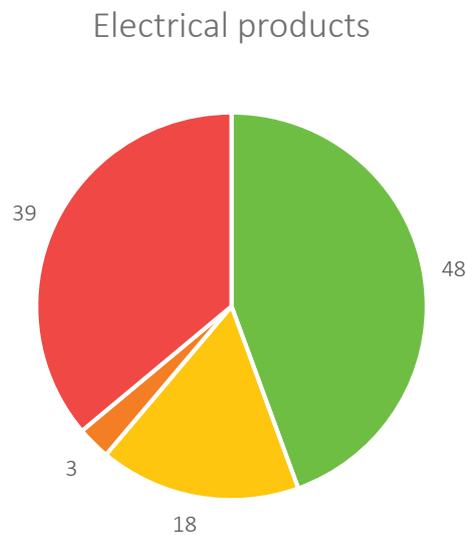


Figure 6. The number of electrical products that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1 percent (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.4 Building materials and furnishings

We have analysed 69 building materials and furnishings. In these, we have found prohibited concentrations of:

- Lead, PAH and SCCPs in four bathroom products
- Lead and SCCPs in four other furnishings

2.4.1 Bathroom products

During the year, we have analysed 18 bathroom products, mostly made of soft plastic. In four of these, we found prohibited concentrations of lead, PAH and SCCPs. Six bathroom products contained more than 0.1 percent of the substance DEHP that is on the Candidate List, which means that a recipient of the article shall be given information about the content. One article contained a low concentration of DEHP and another contained the biocide triclosan, which was allowed in this type of article since it was put on the EU market before the 1st of March 2017. After this date, the substance is not allowed to be used in this type of article. Six articles did not contain any of the substances sought for.

2.4.2 Other furnishings

We controlled 51 other furnishings during 2017 and of these, four contained lead or SCCPs in concentrations above limit values. One article contained DEHP and SCCPs in levels that require that the recipient of the article shall be given information about the substances. Eight articles contained low levels of DEHP, SCCPs and lead or DINP, BPA and copper. The last three are allowed in these articles. In the remaining 38 articles, we could not find any of the substances that we searched for.

2.4.3 Overview of Building materials and furnishings

Figure 7 and Figure 8 contain overviews of how many articles in the group building materials and furnishings that have been tested and the results of the analyses.

Building materials and furnishings

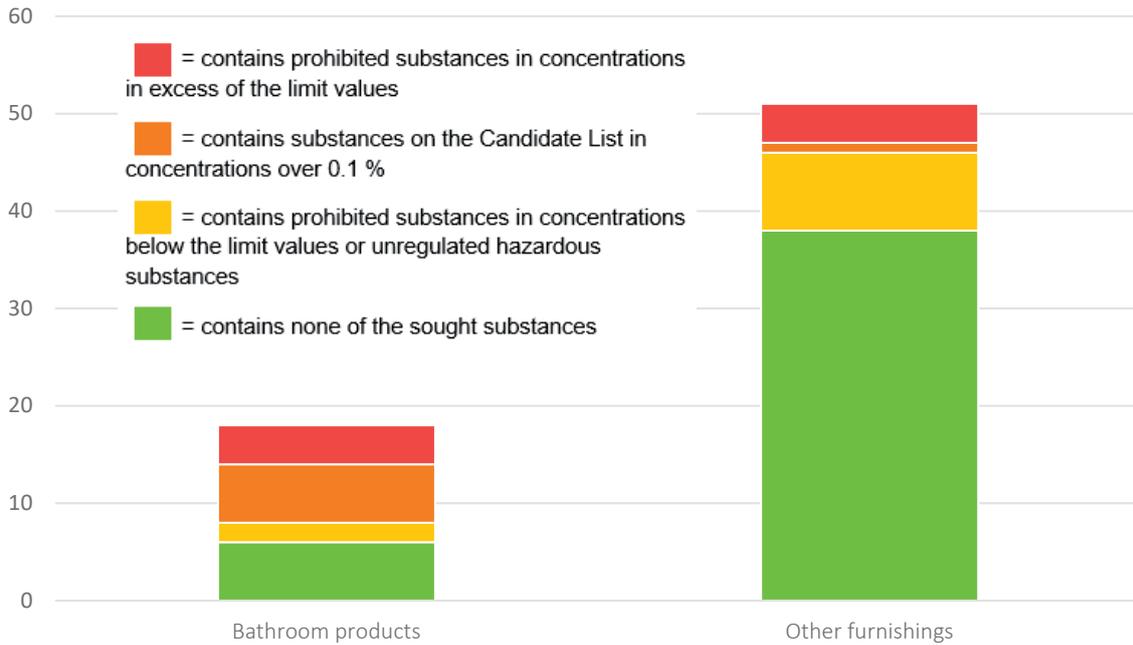


Figure 7. Building materials and furniture that have been analysed by the Swedish Chemicals Agency during 2017.

Building materials and furnishings

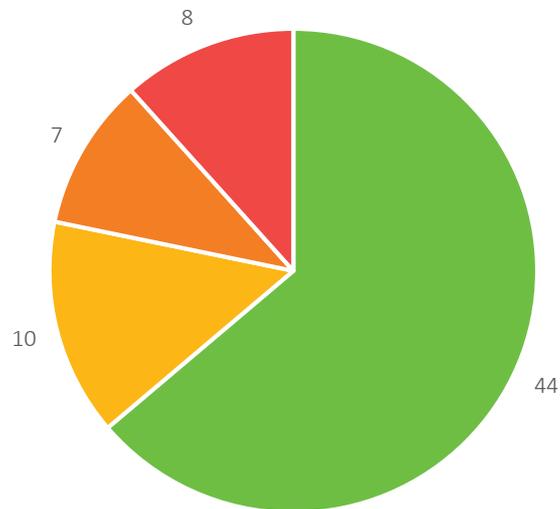


Figure 8. Distribution of building materials and furniture that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1 percent (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.5 Sports and leisure equipment

We have analysed 126 sports and leisure equipment and in these we have found prohibited concentrations of:

- SCCPs in four sports equipment
- SCCPs and lead in two tools
- SCCPs and lead in five other sports and leisure equipment

2.5.1 *Feminine care products*

During 2017, we controlled feminine care products such as sanitary pads, tampons and menstrual cups. For these products, there are very few substances that are restricted and therefore, the most substances that we searched for are not restricted, but have hazardous properties. In 33 of the 35 articles, we found one or more of the substances sought for. Our estimations show that the concentrations measured do not pose a significant risk for negative health effects.

2.5.2 *Articles for animals*

We controlled 27 articles for animals during the year and none of these contained restricted substances above limit values. Two of the articles contained the substances DEHP, DIBP and SCCPs in levels that means that recipients of the articles should be given information about the content of these substances. One article contained low concentrations of DEHP and DIBP. The remaining 24 articles did not contain any of the substances that we looked for.

2.5.3 *Sports equipment*

During the year, we have tested 24 sports equipment and four of these contained SCCPs in levels that are forbidden. Three contained more than 0.1 percent by weight of DEHP and DIBP that are on the Candidate List, which means that there is a requirement to inform customers. Six of the articles contained low levels of DEHP or the phthalates DINP and DIDP that are not restricted for this product category. In the eleven other sports equipment we did not find any of the substances that we searched for.

2.5.4 *Tools*

We have controlled six tools during the year, and two of these contained SCCPs and lead in concentrations above limit values. In the four other tools, we did not find any of the substances that we looked for.

2.5.5 *Vehicle accessories*

During 2017, we tested three vehicle accessories and one contained a low level of DEHP and the unrestricted substance DINP. In the other two articles, we did not find any of the substances sought for.

2.5.6 *Other sports and leisure equipment*

During the year, we controlled 31 other sports and leisure equipment and five of these contained SCCPs and lead in levels exceeding the limit values. Two of the articles contained the phthalates DEHP and BBP in concentrations above 0.1 percent by weight, which means that the requirement for information according to the REACH Regulation apply. Five of the

articles contained low levels of DEHP, lead and DMFa or the unrestricted substances DINP and DIDP. The remaining 19 articles did not contain any of the substances sought for.

2.5.7 Overview of sports and leisure equipment

Figure 9 and Figure 10 contain overviews of how many articles in the group of sports and leisure equipment that have been tested and the results of the analyses.

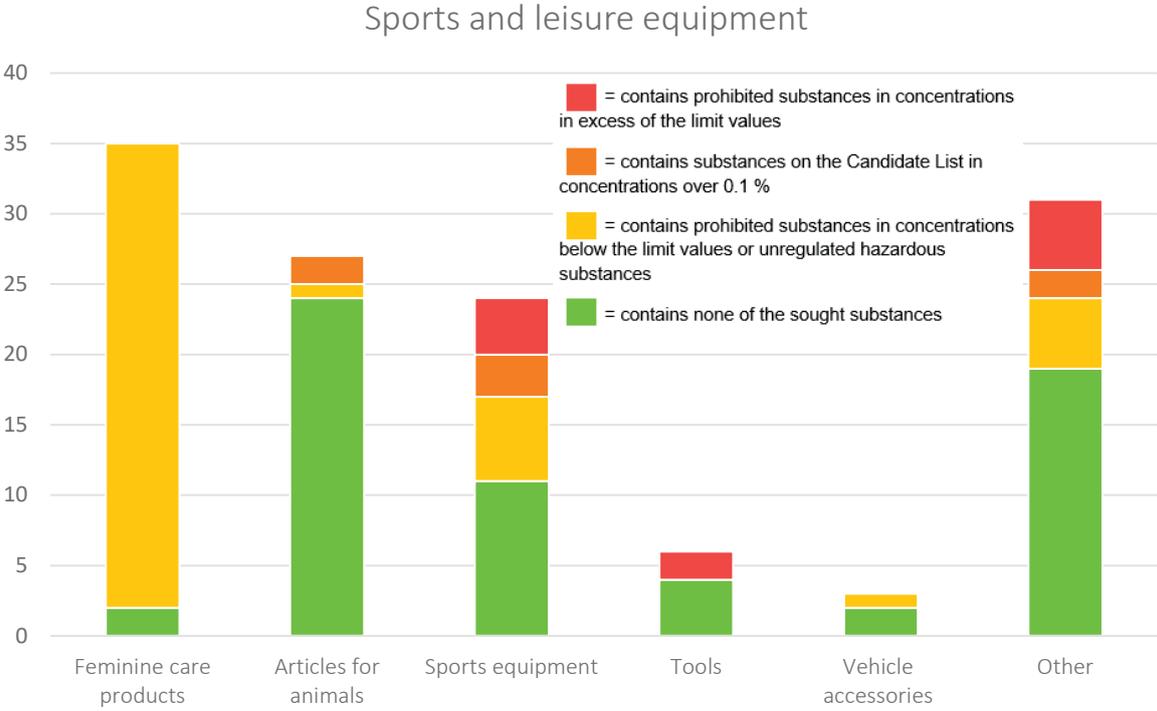


Figure 9. Sports and leisure equipment that has been analysed during 2017.

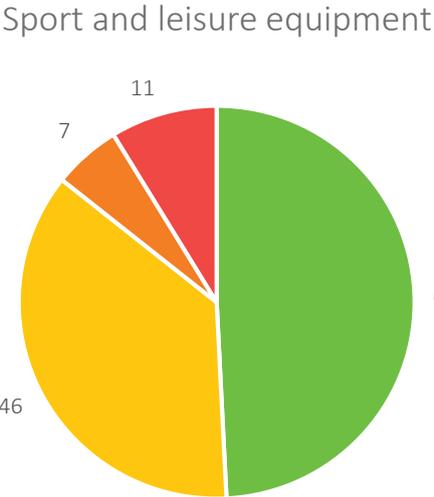


Figure 10. Distribution of sports and leisure equipment that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1 percent (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.6 Chemical products

We have analysed three chemical products and in these we have not found any prohibited substances.

2.6.1 *Paint and glue*

In conjunction with a control of toys during the year, we also tested two glue products and one hobby paint that were not toys. In the analyses, we searched for allergenic preservatives (MIT, CIT and BIT). In the two glues, we found BIT respectively MIT, CIT and BIT, but the concentrations were allowed. In the hobby paint, we did not find any of the preservatives sought for.

2.7 Packaging

We have analysed two packagings and in these we found prohibited concentrations of cadmium.

2.7.1 *Packaging*

When we test products, we also test the packaging of the articles. During 2017, we found two packaging made of plastic that contained cadmium in concentrations that are prohibited. We only register packagings when we find prohibited levels, which means that we control more packagings than is shown in these report. The most of the packaging we test do not contain prohibited levels of restricted substances.

3 Discussion

3.1 Overview of the Swedish Chemicals Agency's analyses

During 2017, we have analysed 512 articles and chemical products in conjunction with enforcement. The figure below shows how many products in the different categories that we have analysed and the results.

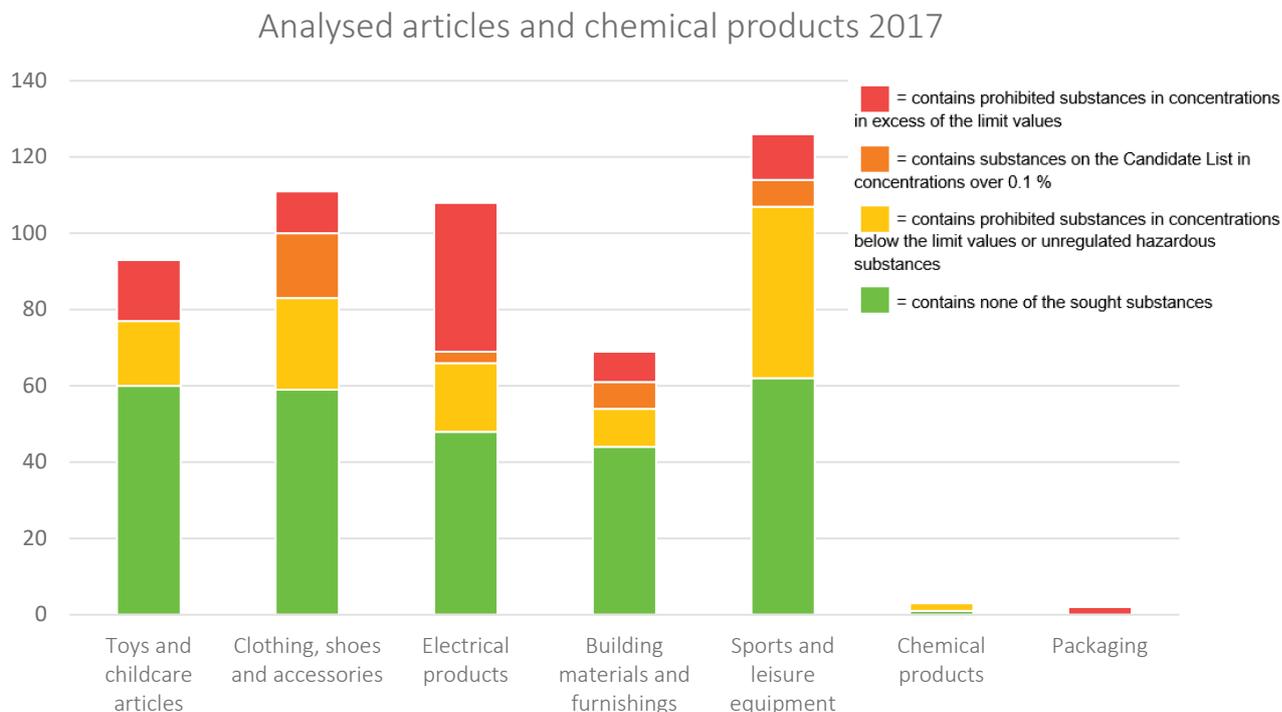


Figure 5. Number of articles of various types and chemical properties that the Swedish Chemicals Agency has analysed during 2017.

The categories where we have analysed most articles are *sports and leisure equipment*, followed by *clothing, shoes and accessories* and *electrical products*. The lowest number of analysed products is in the category *chemical products*. One reason for this is that there are several rules for chemical products that can be controlled without chemical analysis, and that is not the case for articles. Examples on rules for chemical products are regarding classification and labelling, safety data sheets and authorization.

The category in which we found most non-compliant products is *electrical products*. The articles that contained restricted substances in concentrations above limit values corresponds to 36 percent. The category with the lowest portion of articles containing forbidden substances (approximately nine percent) was *sports and leisure equipment*. The articles in this category were for example feminine care products, articles for animals and sports equipment. One reason for the low portion of articles with forbidden substances is that there are relatively few substances that are restricted for these type of articles.

Many of the articles that contain prohibited substances (red color in the figure) may also contain substances on the Candidate List in concentrations above 0.1 percent by weight. This means that more articles than are shown in the figures (orange color) contain substances of very high concern. It is mainly in articles made of plastic (soft PVC plastic) that we find substances on the Candidate List. Companies that supply such an article are obliged to inform

the recipients about the content and at our inspections, we control if they have done that. These substances are under investigation and may be restricted or need authorization in the future. We also find a lot of substances that are not restricted for the specific type of article, but are restricted for other types of articles. One example is the phthalates DINP and DIDP that are restricted in toys and childcare articles but are present a lot in other types of articles made of soft PVC plastic. In these cases, we inform the companies about the presence of the substances, but since they are not restricted, we do not put demand on corrective measures.

In total, 88 of 512 articles and chemical products that we analysed during 2017 contained restricted substances above limit values, which corresponds to 17 percent. Previous overviews of our analyses during 2008-2013, 2014-2015 and 2016 showed that 14 percent (256 of 1775), 16 percent (315 of 1930) respectively 18 percent (126 of 692) of the analysed articles and chemical products did not fulfill the requirements in the legislation. This means that the portion of articles and chemical products where we find prohibited substances is at the same level from year to year, even though there may vary a lot within different product categories depending on our selection of samples. Figure 12 shows the distribution of analysed products during 2017 that contain or do not contain different substances that we have been looking for.

Analysed articles and chemical products 2017

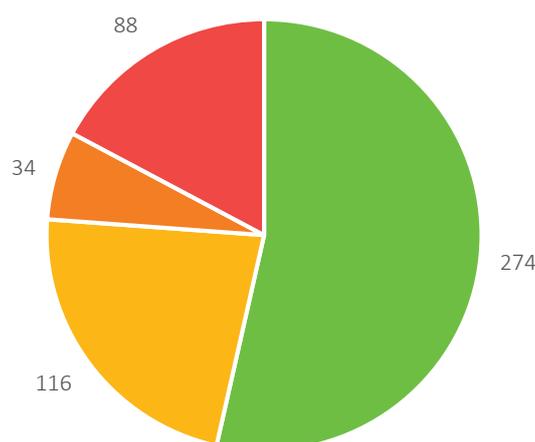


Figure 12. Distribution of all products analysed during 2017 that contained restricted substances in excessive concentrations (red), substances on the Candidate List (orange), low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

Figure 13 shows the portion of products within different product categories that our analyses have shown contain too high level of restricted substances during 2014-2015, 2016 and 2017. The category that has had the highest portion of non-compliance every year is *Electrical products*. One reason for this high portion of non-compliant products is that the restricted substances are still in use in the countries where the manufacturing takes place. Enforcement activities for this specific product group should be prioritized for the Swedish Chemicals Agency. Enforcement may also be complemented with different types of supporting activities for the companies to raise the level of compliance.

The categories *Chemical products* and *Building materials and furnishings* has the lowest portion of products with substances above limit values. Concerning chemical products, we do relatively few analyses since the main part of the enforcement is to control the products classification and safety information. In the cases when we have done analyses, we have

mostly done it to control that the level of hazardous substances in the products corresponds to the classification and safety information and we have found relatively few cases with high concentration. Concerning *Building materials and furnishings*, the low portion of non-compliant products is probably due to the fact that there are relatively few substances that are restricted for these articles. This is also the case for *Sports and leisure equipment*, which leads to that we find less non-compliant articles in that category. Concerning *Electrical products*, *Toys and childcare articles* and also in some aspects *Clothing, shoes and accessories*, there are more rules with restricted substances that may be present in the products and that is probably the reason why these categories have higher portions of non-compliant products in our analyses.

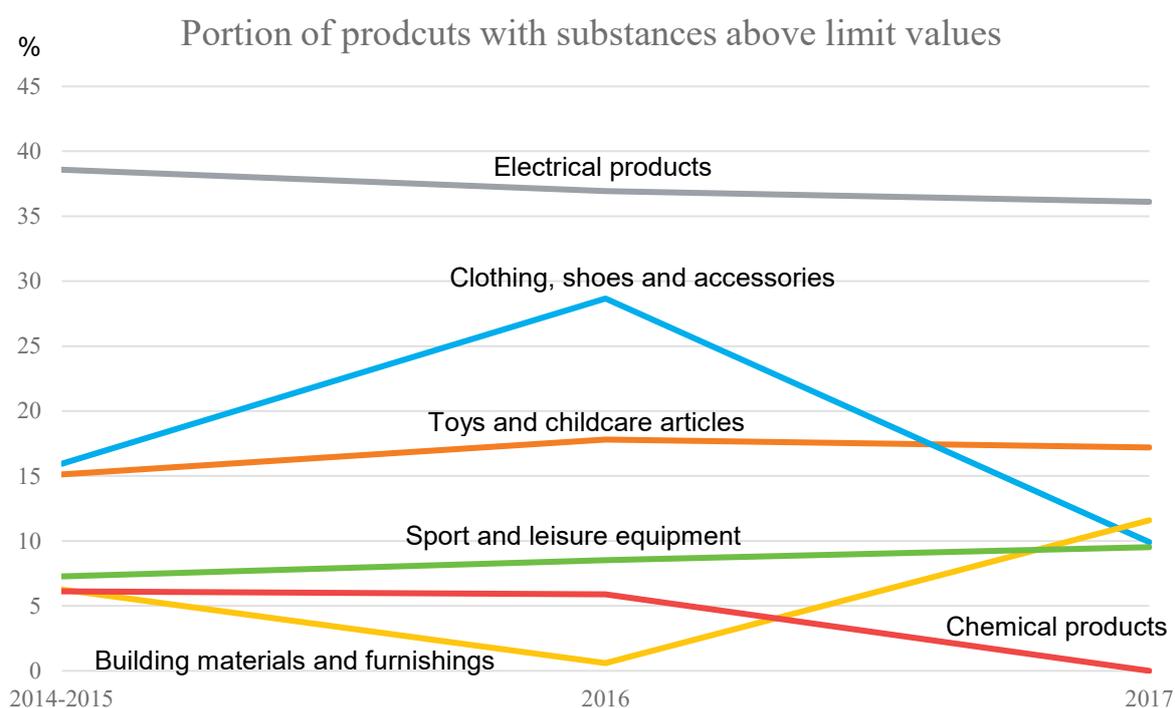


Figure 63. The portion of products in different categories that our analyses have shown contain too high levels of restricted substances during 2014-2015, 2016 and 2017.

3.2 What do the analyses lead to?

The main purpose with our analyses is to control if companies and others that put products on the Swedish market comply with the legislation. In some cases, the analyses of samples are part of a larger inspection effort in which the company's internal controls are also reviewed. In other cases, the analyses are the primary focus of the inspection.

When the analytical results are ready, we inform the company about the results. In those cases where substances have been found in concentrations that exceed the limit value set out in the legislation, the company has to provide an account of the measures it will be taking. In those cases a company does not recall its product from the market voluntarily, the Swedish Chemicals Agency can order a sales ban. For those regulatory violations that are within the scope of the Environmental Code, the Agency is obliged to submit a report to the

environmental prosecutor. The prosecutor then assesses whether a preliminary investigation is to be initiated. In some cases, this leads to the company being fined or to a prosecution⁷.

If companies in other countries are affected by the analytical results (e.g. if the supplier of the product is in another EU country) the Swedish Chemicals Agency makes contact with the enforcement authority in the country in question so that it can also take measures. Hazardous products are also reported to RAPEX⁸ or ICSMS⁹ so that other authorities, companies and consumers can obtain information and take measures themselves.

3.3 How can the results be used?

The analytical results are primarily used within the Swedish Chemicals Agency's operational enforcement activities, which involve checking whether articles and products comply with the requirements of the current provisions. The analytical results can also be used to develop legislation. This may be done when regulations are being drawn up or reviewed by the Swedish Chemicals Agency and in an EU context. In the REACH Forum's¹⁰ working group for restrictions, the EU member states are to provide their points of view on proposals for future restrictions. The Swedish Chemicals Agency's experience is that analyses and enforcement results make a major contribution to providing good feedback on new proposed restrictions.

Analytical results can also be distributed to other actors that may have an interest in them. One example is companies that need to ensure that their own articles do not contain prohibited substances. The Swedish Chemicals Agency's analytical results can provide information about which substances can be found in different types of articles and materials. The economic actors can use this information to focus their internal control resources on those articles, products and provisions that are most relevant. Comprehensive analyses are relatively expensive for an individual business and help to target the correct areas is thus of value.

Other enforcement authorities may also find this information of use. This is done through channels such as RAPEX, where EU member states report products that pose a serious risk. The Swedish Chemicals Agency can also distribute information about analytical results in its enforcement guidance to municipal enforcement authorities, which may have use of this information.

3.4 Future analytical requirements

The Swedish Chemicals Agency will continue working with the action plan for a non-toxic everyday environment and we will continue to check the groups of articles prioritised in this. In terms of analyses, these will also continue to be primarily performed on consumer articles, mainly those that have a lower price. Experiences from previous enforcement activities show that it is mainly the cheaper articles and/or low quality articles that contain hazardous substances.

⁷ More information in report no. 10/17 Kemikalieinspektionens åtsanmälningar 2012-2016 (Swedish) <https://www.kemi.se/global/tillsyns-pm/2017/tillsyn-10-17-kemikalieinspektionens-atsanmalningar-2012-2016.pdf>

⁸ Rapid Alert System for dangerous non-food products (http://ec.europa.eu/consumers/consumers_safety/safety_products/rapex/index_en.htm)

⁹ Information and Communication System for market Surveillance (<https://webgate.ec.europa.eu/icsms/public/consumer.jsp?locale=en>)

¹⁰ REACH Forum coordinates information exchange for market surveillance authorities regarding the REACH regulation and the CLP regulation

We have published a strategy for enforcement of chemicals in articles¹¹ and in this we prioritize different categories of articles, the same categories found in this report. Analyses will continue to be made primarily on articles in these prioritized categories.

The Swedish Chemicals Agency intend to continuously publish the results from the analyses in our enforcement projects. Partly in a conjunction such as this report and partly as separate reports for each project.

3.5 More information

Further information about substances and regulation is available at www.kemikalieinspektionen.se.

Reports from the Swedish Chemicals Agency's enforcement projects¹² that are referred to in this report (available in Swedish with an English summary):

- Rapport 3/18 – Kartläggning av farliga kemiska ämnen i intimhygienprodukter (Mapping of hazardous chemical substances in feminine care products)
- Tillsyn 4/18 – Tillsyn av små varor som barn kan stoppa i munnen (Enforcement of small articles that children can put in the mouth)
- Tillsyn 1/18 – Återkontroll av tidigare åtalsanmälda företag (Follow-up on companies reported to the prosecutor)
- Tillsyn 7/17 – Analyses in conjunction with enforcement 2016 (English)
- Tillsyn 7/16 – The Swedish Chemicals Agency's analyses in conjunction with enforcement 2014-2015 (English)
- Tillsyn 5/14 – Kemikalieinspektionens analyser i samband med tillsyn 2008-2013 (The Swedish Chemicals Agency's analyses in conjunction with enforcement 2008-2013)

There is also more information on our enforcement activities in our annual reports.¹³

¹¹ Report no. 4/16 Strategi för tillsyn över kemikalier i varor (in Swedish) (<http://www.kemi.se/global/tillsyns-pm/2016/tillsyn-4-16-strategi-for-tillsyn-over-kemikalier-i-varor.pdf>)

¹² <http://www.Kemikalieinspektionen.se/hitta-direkt/publikationer/tillsynsrapporter>

¹³ <http://www.kemi.se/en/about-us/organisation/ruling-documents>

4 Appendixes

Appendix 1 – Glossary

Abbreviation	Explanation
ICSMS	Information and Communication System on Market Surveillance – a system where enforcement authorities in the EU report controlled products.
PVC	Polyvinyl Chloride – a type of plastic that can be made soft by adding plasticisers.
RAPEX	Rapid Alert System for non-food dangerous products – a system where enforcement authorities in the EU report hazardous products.
REACH	Registration, Evaluation, Authorisation and restriction of Chemicals – a common EU chemical regulation.
XRF	X-Ray Fluorescence – an analytical method for screening analyses of elements on the surface of materials.

Appendix 2 – Substances

Substance/group of substance	Abbreviations	Description
Phthalates	DEHP (bis(2-ethylhexyl)phthalate) DBP (dibutyl phthalate) BBP (benzyl butyl phthalate) DINP (diisononyl phthalate) DIDP (diisodecyl phthalate) DIBP (diisobutyl phthalate)	Phthalates are used as plasticizers in plastic, mostly polyvinyl chloride. Some phthalates are toxic for reproduction, toxic for the environment or may have other negative effect on human body. These are restricted in toys and childcare articles and some are on the Candidate List.
Short-chain chlorinated paraffins	SCCPs	Plasticizer and flame retardant that are used in plastic, mostly polyvinyl chloride. SCCPs are toxic to aquatic organisms, are persistent in the environment and are suspected to cause cancer. Restricted in all types of articles.
Perservatives/biocides	MIT (2-methylisothiazol-3(2OH)-one) CIT (5-chloro-2-methylisothiazol-3(2OH)-one) BIT (1,2-benzisothiazol-3(2OH)-one) Copper Zinc pyrithione Silver Titan dioxide	Used in chemical products or articles as a biocide and is added to prevent bacterial growth, unwanted odour or prevent other organisms. Some may cause allergy and some are toxic for the environment. Requirement on classification and labelling of chemical products and treated articles may apply.
Solvents	DMFa (dimethylformamide) DMAC (dimethylacetamide)	Used as solvent, for example when fabric is coated with polyuretan plastic. The substance is on the Candidate List.
Polycyclic aromatic hydrocarbons	PAH	May be present in petroleum products and in carbon black and may be present in articles made of rubber or black plastic. A large group of substances and many of them have carcinogenic properties. Restricted in consumer products.
Bisphenol A	BPA	Used in different plastics (mainly poly carbonate and epoxy) and is suspected to be endocrine disrupting. Restricted in feeding bottles and food packaging for small children. The substance is on the Candidate List.
Metals	Lead Cadmium Nickel	The metals are used in different alloys or as salts in plastic or other materials. Lead may affect the central nervous system, cadmium may harm the kidneys and the skeleton and nickel may cause contact allergy. Restricted in for example jewellery, toys and electrical products (not nickel).

Appendix 3 – Legislation

Legislations regulating the substances in the report are listed below.

EU Regulations
Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 850/2004 of the European Parliament and of the Council concerning Persistent Organic Pollutants (POPs)
Regulation (EC) No 528/2012 of the European Parliament and of the Council concerning the making available on the market and use of biocidal products
EU Directives implemented in Swedish legislation
Directive 2011/65/EC of the European Parliament and of the Council of 8 June 2011 on restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) The Directive is incorporated into Swedish legislation with the Hazardous Substances in Electric and Electronic Equipment Ordinance (2012:861) and in the Swedish Chemicals Agency's Regulation for Chemical Products and Biotechnical Organisms (KIFS 2017:7).
Directive 2009/48/EC of the European Parliament and of the Council of on the safety of toys The directive is incorporated into Swedish legislation within the scope of the Safety of Toys Act (2011:579), the Safety of Toys Ordinance (2011:703) and in the Swedish Chemicals Agency's Regulation for Chemical Products and Biotechnical Organisms (KIFS 2017:8).
European parliament and council directive 94/62/EC on packaging and packaging waste The directive is incorporated into Swedish legislation within the scope of the Prohibition in Certain Cases in Connection with the Handling, Import and Export of Chemical Products Ordinance (1998:944).

The REACH Regulation (EC) No 1907/2006

The REACH regulation is the EU's main regulation for chemicals and it contains regulations governing individual substances, substances in mixtures and substances in articles.

The regulation contains provisions including over sixty restrictions where specific substances are restricted in various types of products and articles. These restrictions can be found in Annex XVII and in the majority of cases there is a maximum concentration value tolerated.. Examples of restrictions the Swedish Chemicals Agency has checked with the help of analyses are phthalates in plastic toys, toluene in adhesive, azo dyes in textiles and nickel in jewellery.

The REACH regulation also contains requirements regarding information about certain substances in chemical products and articles.

- For chemical products, there are regulations concerning safety data sheets that are to provide the user with, for example, safety information.
- For articles, there are requirements that the recipient of an article containing more than 0.1 percent by weight of a particularly hazardous substance (that is included on the Candidate List) is to be informed of this.

The POPs Regulation (EC) No 850/2004

This regulation prohibits a number of persistent organic pollutants (POPs). The prohibition applies to pure substances, substances in mixtures and substances in articles. In the majority of cases, there are no limit values, but very low concentrations of unintentional trace pollutants are not prohibited. Examples of substances that are restricted are hexachlorobenzene (HCB), which can be found in fireworks, and short-chained chlorinated paraffins, which are present in, for example, softened plastics.

The Biocidal Products Regulation (EC) No 528/2012

In the EU Regulation on biocidal products, there are, among other things, rules concerning authorisation for biocidal products and articles that have been treated with biocidal products. There is a requirement that the biocidal substance that a treated article has been treated with is approved for that product type and there is also requirement on the labelling if the article is promoted with some kind of biocidal claim.

The RoHS Directive 2011/65/EU

The RoHS Directive contains regulations restricting the presence of certain substances in electrical and electronic products. The substances that are restricted are cadmium, lead, mercury, hexavalent chromium and the two groups of brominated flame retardants polybrominated biphenyls (PBB) and polybrominated diphenylether (PBDE). The limit values are 0.1 percent by weight for all the substances except cadmium for which the value is 0.01 percent by weight.

The Toy Safety Directive (2009/48/EC)

The EU Toy Safety Directive contains several requirements concerning the chemical content of toys. For example, there are limit values for how much of certain metals may migrate, restrictions on the content of CMR substances (substances that may cause cancer, harm genes or the ability to reproduce) and perfumes. One example of a CMR substance that may be found in toys is diisobutyl phthalate (DIBP). The directive also contains a requirement that toys should not catch fire too easily, which is also within the Swedish Chemicals Agency enforcement area.

The Packaging and Packaging Waste Directive 94/62/EC

There are regulations governing collection of and restrictions on chemical substances in packaging and packaging waste. Lead, cadmium, mercury and hexavalent chromium are substances that are restricted in packaging.

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