

The Swedish Chemicals Agency's Analyses in Conjunction with Enforcement 2014–2015

ENFORCEMENT 7/16



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 and 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 2014 and 2015. 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.

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Summary

The Swedish Chemical 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. A part of the inspection activity includes chemical analyses of products to check that they fulfil the requirements of the legislation. This report is an account of the analyses made by the Enforcement Department during 2014 and 2015.

The products that have been analysed belong to the categories:

- toys and childcare articles
- clothing
- shoes and accessories
- electrical products
- building materials and furnishings
- sports and leisure equipment
- chemical products.

In total, 1,930 products have been tested during 2014 and 2015. The category with the highest percentage of non-compliance was electrical products.

In the cases where restricted substances are found at levels above the limit values, the companies are informed about the result and the Agency may request a ban on sales and a withdrawal of the product from the market. Authorities in other member states of the EU are also informed about these results. In addition, the analytical findings may also be used as background information when new legislation is being developed or when existing rules are reviewed. Other companies and consumers may also make use of these results to avoid use of dangerous chemicals in similar products.

In the future, the Swedish Chemicals Agency will continue to prioritise chemical analyses of products as a part of the enforcement. Especially articles within the appointed categories will be prioritised in these analyses. The Agency will also be testing chemical products and pesticides as a complement to control of warning and safety information.

Sammanfattning

Kemikalieinspektionens tillsynsavdelning inspekterar företag som tillverkar, importerar och säljer kemiska produkter och varor som har behandlats med eller innehåller kemiska ämnen. Som en del av kontrollen utförs kemiska analyser på 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 2014 och 2015.

De produkter som Kemikalieinspektionen har analyserat sorterar under kategorierna:

- leksaker och barnavårdsartiklar
- kläder
- skor och accessoarer
- elektriska produkter
- byggvaror och inredning
- sport- och fritidsvaror
- kemiska produkter.

Totalt har 1930 produkter analyserats under 2014 och 2015. Den varugrupp som hade störst andel varor med otillåtna ämnen i var elektriska produkter.

I de fall då otillåtna ämnen hittas i produkter i halter som överskrider gränsvärden informeras företagen om resultatet och myndigheten kan kräva försäljningsförbud och tillbakadragande från marknaden av produkten. Även myndigheter i andra länder informeras om resultaten. Analysresultaten kan också användas som underlag när nya regler tas fram eller när befintliga regler ses över. Även företag och konsumenterna kan ta del av resultaten för att själva undvika farliga kemikalier i liknande produkter.

Kemikalieinspektionen kommer framöver att fortsätta prioritera analyser av produkter inom tillsynen och framför allt för varor inom de prioriterade varugrupperna. Analyser kommer även att göras av allmänkemikalier och bekämpningsmedel som komplement till kontroller av varnings- och skyddsinformation.

1 Introduction

The Swedish Chemicals Agency's Enforcement Department inspects companies that manufacture and import chemical products (the term also includes pesticides), biotechnical organisms and articles that are treated with or contain chemical substances. In the case of articles, the Swedish Chemicals Agency's enforcement responsibilities also encompass distributors and resellers. The inspections are conducted with the support of the Environmental Code and the Safety of Toys Act. Enforcement activities are one aspect of Swedish market supervision, which checks that articles on the market are safe.

As one aspect of its enforcement activities, the Swedish Chemicals Agency has checked the chemical substances content of articles and chemical products using analyses. These chemical analyses have been conducted partly by using the agency's own XRF instrument¹ and partly by the help of accredited external laboratories. The analyses have been conducted within the scope of product-specific projects and the number of products analysed has increased in recent years. 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 2014 and 2015. 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 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 pesticide. 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 Appendix 2 contains a list of the abbreviations for substances that are listed. A list and short description of the regulations the Swedish Chemicals Agency enforces can be found in Appendix 3.

2 Analyses

The majority of analyses ordered by the Swedish Chemicals Agency over the course of 2014 and 2015 have concerned substances in articles, but chemical products have also been analysed. In some cases, there are separate reports (please refer to section 3.5 *Further information*). Please note that analyses reported here do not provide a representative picture of the market as a whole. The selection of products for testing is conducted from an enforcement perspective. It is not a statistical selection, rather articles and products that are judged to have a greater probability of shortcomings are prioritised.

In the section below, the articles have been divided up into groups of articles that we have prioritised for inspection² and in the work involved in our action plan for a non-toxic everyday environment³. A figure depicting the analytical results appears at the end of this

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 Report no. 4/11 Strategy for the enforcement of legislation concerning environmental and health risks from chemicals in articles

(<http://www.kemikalieinspektionen.se/global/rapporter/2011/rapport-4-11-varutillsyn.pdf>)

³ Action plan for a toxin-free everyday environment 2011–2014 – Better protection for children (<http://www.kemikalieinspektionen.se/global/rapporter/handlingsplan-giftfri-vardag.pdf>)

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 in the Candidate List in REACH (read more about this in Appendix 4) are present in concentrations in excess of 0.1 per cent 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. Products in which none of the substances looked for by the analyses were found are shown in green. The reason why the products are divided up into these four groups is to visualise the substances found on 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 training apparatus, where substances that are restricted in groups such as toys and electronics are permitted.

Those articles containing prohibited concentrations of hazardous substances (coloured red in the figures) may, in some cases, contain substances included on the Candidate List in concentrations over 0.1 per cent by weight. However, these are reported in this report only because they contain prohibited substances. This means that there are a significantly larger number of articles than those shown in orange in the figures contain more than 0.1 per cent by weight of substances included on the Candidate List.

Please note that the selection of article samples for analysis has been made so as to facilitate effective enforcement, not to survey the market. Such products as may be suspected to contain hazardous substances have, as a rule, been selected for testing. Consequently, the results do not reflect all articles or chemical products on the market and do not provide any statistically certain results.

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 refer to *3.5 Further information* or contact the Swedish Chemicals Agency.

2.1 Toys and childcare articles

We have tested 119 different types of toy and childcare articles and have found prohibited concentrations of:

- phthalates, SCCPs and cadmium in plastic toys
- lead in electrical toys
- phthalates and SCCPs in childcare articles.

2.1.1 Plastic toys

In 2015, 70 plastic toys were checked as part of an enforcement project. Seven of these contained prohibited substances in concentrations over the limit values. These substances were short-chained chlorinated paraffins (SCCPs), cadmium and the phthalates DEHP, DBP, DINP and DIDP. Restricted substances in concentrations lower than the limit values were found in 22 of the toys. None of the substances sought were found in 41 of the toys.

2.1.2 Electrical toys

Checks of 27 electrical toys were also conducted as part of the same project as mentioned above with respect to plastic toys. Of these, eight contained lead in concentrations in excess of the limit value. A further three contained restricted substances, but in concentrations under the limit value. None of the substances sought were found in 16 of the toys.

2.1.3 Childcare articles

Twelve childcare articles have been checked over the course of 2014 and 2015, including changing mats, bibs and toilet seats for children. Three of these contained restricted phthalates and SCCPs in concentrations that exceeded the limit values. A further two contained a restricted substance (dimethylformamide, DMFa), but in concentrations under the limit value. None of the substances sought were found in seven of the childcare articles.

2.1.4 Fabric toys

As part of the toy project in 2015, six fabric toys were analysed. One of these contained a low concentration of a restricted substance (bisphenol A in a plastic part), however this was under the limit value. None of the substances sought were found in any of the other toys.

2.1.5 Masquerade toys

Three masquerade toys were also checked as part of the same project. One of these contained low concentrations of restricted substances (DEHP and bisphenol A), however these were under the limit values. None of the substances sought were found in the other masquerade toys.

2.1.6 Metal toys

One metal toy was analysed in the above-mentioned toy project in 2015. According to the analyses, this contained no restricted substances.

2.1.7 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.

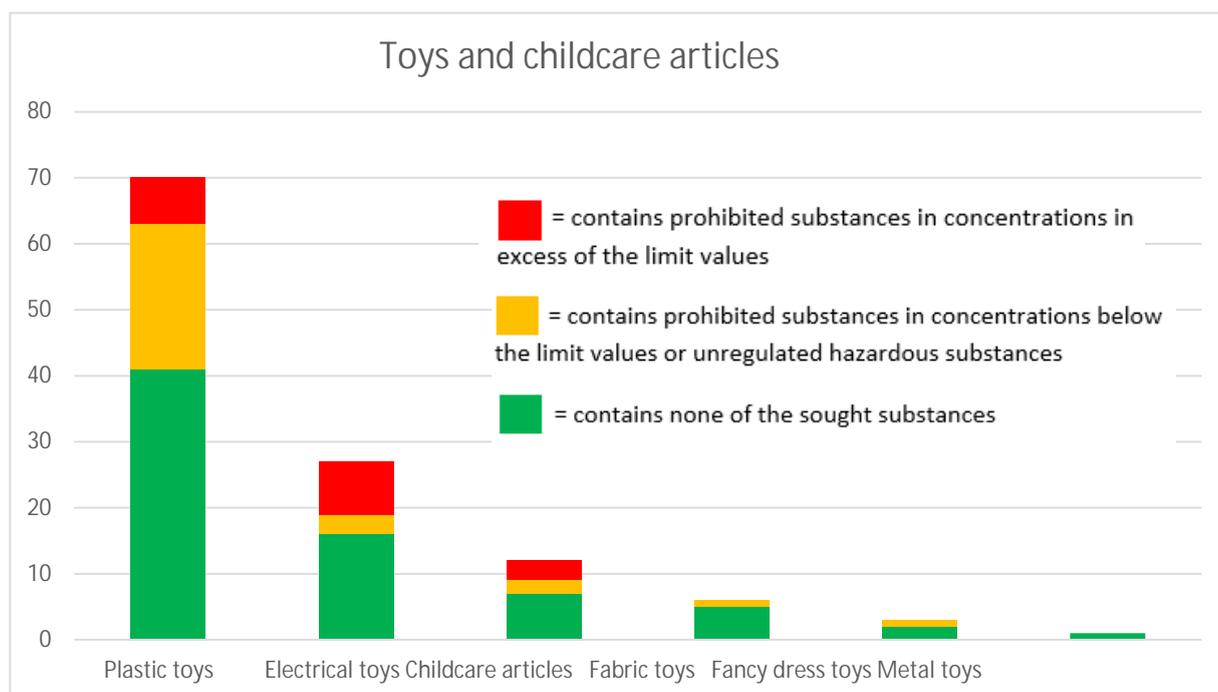


Figure 1. Toys and childcare articles that have been analysed by the Swedish Chemicals Agency over the course of 2014 and 2015.

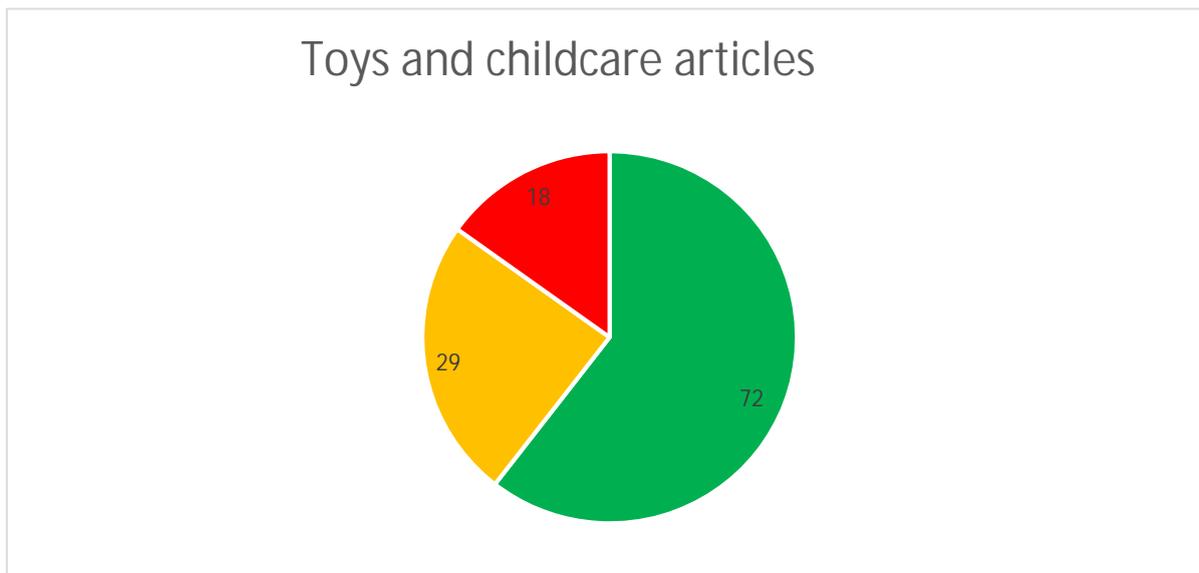


Figure 2. The number of toys and childcare articles that contained restricted substances in excessive concentrations (red), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.2 Clothing, shoes and accessories

We have tested a total of 1,449 articles in the group clothing, shoes and accessories and found prohibited concentrations of:

- cadmium, lead, mercury and nickel in jewellery/costume jewellery
- cadmium and phthalates in shoes
- short-chained chlorinated paraffins (SCCPs), benzidine and phthalates in sports and leisure clothes
- short-chained chlorinated paraffins (SCCPs), cadmium and phthalates in bags and cases made of plastic
- the phthalate DEHP in one pair of work gloves.

2.2.1 Jewellery and costume jewellery

A collaborative project involving Sweden's municipalities analysed 1,162 jewellery/costume jewellery articles. Of these, 211 contained cadmium, lead and mercury or emitted nickel in concentrations in excess of the limit values. In a further 122 articles, these substances were found in concentrations under the limit values or in high concentrations but not encompassed by the legislation as they had been released onto the market prior to the regulation enter into force.

2.2.2 Shoes

A total of 107 shoes were checked as part of a project looking at clothing and shoes in 2015. A concentration of cadmium in excess of the limit value was detected in one of these shoes. Four shoes contained substances included on the Candidate List (the phthalates DEHP and DIBP) in concentrations in excess of 0.1 per cent by weight. Low concentrations of restricted substances or substances that are not restricted were found in a further 28 shoes. None of the substances sought were found in the analyses of the other 74 shoes.

2.2.3 Clothing

In 2015, 86 sports and leisure garments were analysed as part of a project looking at clothing and shoes. One of these, a pair of training gloves, contained SCCPs and benzidine in concentrations in excess of the limit values. The training gloves also contained DEHP, a substance that is included on the Candidate List. Another garment contained more than 0.1 per cent by weight of the phthalate DEHP. Low concentrations of substances or unregulated substances were found in a further 20 garments. None of the substances sought were found in 64 of the garments.

2.2.4 Bags and cases

A total of 83 bags and cases (mobile phone cases, pencil cases, etc.) have been tested by the Swedish Chemicals Agency over the course of 2014 and 2015. SCCPs and phthalates were found in concentrations that exceeded the limit values in 19 of these. Substances on the Candidate List were found in 22 of the bags and cases in concentrations over 0.1 per cent by weight (the phthalates DEHP, DBP and DIBP). A further 21 bags/cases contained substances in low concentrations or unrestricted substances such as lead. The tests did not find any of the substances sought in the remaining 21 examples.

2.2.5 Protective equipment

In 2015, nine different articles of protective equipment, primarily gloves, and protection for hearing and head, were tested as part of an analysis project focusing on plastic articles. The phthalate DEHP, which is included on the Candidate List, was found in one glove in a concentration in excess of 0.1 per cent by weight. Low concentrations of substances or unregulated substances were found in a further six articles. None of the substances sought were found in two of the articles.

2.2.6 Masquerade articles

Two masquerade articles were analysed as part of the plastic project in 2015. None of the substances sought were found when these were analysed.

2.2.7 Overview of the analyses of clothing, shoes and accessories

Figure 3 and Figure 4 contain overviews of how many articles in this group of articles have been tested and the results of the analyses. The bar for jewellery/costume jewellery is reduced in scale because the number of articles analysed in this group was quite high. The correct figures are stated on the bars.



Figure 3. Clothing, shoes and accessories that have been analysed by the Swedish Chemicals Agency over the course of 2014 and 2015.



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 % (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 127 electrical products and in these we have found prohibited concentrations of:

- lead in cheap electronics, tablets, miscellaneous home electronics, mobile phones and hand-held controllers for gaming (primarily in the solders inside the products)
- SCCPs in cheap electronics, tablets, mobile telephones, kitchen apparatus and hand-held controllers for gaming (in soft plastic parts)
- polybrominated diphenyl ethers (PBDE) in miscellaneous home electronics (in plastic parts).

2.3.1 Cheap electronics

Over the course of 2015, 29 different small electronic articles in a lower price category, for example dog collars with lights, earphones and electronic keyrings were analysed. Restricted substances in concentrations exceeding the limit values (lead and SCCPs) were found in 16 of these. None of the substances sought were found in 13 of these articles.

2.3.2 Tablets

The Swedish Chemicals Agency have ordered the testing of 28 tablets in 2014. Ten of these contained restricted substances (SCCPs and lead) in concentrations in excess of the limit values. A concentration in excess of 0.1 per cent by weight of the phthalate DEHP, which is included on the Candidate List, was found in one further tablet. One article contained a low concentration of DEHP. None of substances sought were found in 16 of the 28 tablets.

2.3.3 Miscellaneous home electronics

In 2014, 20 articles in the group miscellaneous home electronics were tested. Six of these contained restricted substances in concentrations in excess of the limit values (lead and PBDE) and a further five contained PBDE in concentrations under the limit value. None of the substances sought were found in the analyses of nine of the articles.

2.3.4 Mobile telephones

In 2014, 19 mobile telephones were tested. Five of these contained SCCPs and/or lead in prohibited concentrations. One further mobile phone contained a low concentration of the phthalate DBP. None of the substances sought were found in 13 of the mobile telephones.

2.3.5 Kitchen apparatus

In 2015, 18 electrical apparatus were tested. Prohibited concentrations of SCCPs were found in five of these. In addition, one apparatus contained the phthalate DEHP (included on the Candidate List) in a concentration in excess of 0.1 per cent by weight. Furthermore, eight apparatus contained low concentrations of restricted substances or unrestricted substances. None of the substances sought were found in four of the 18 kitchen apparatus.

2.3.6 Hand-held gaming controllers

Eleven hand-held controllers for video and computer gaming were tested over the course of 2015. These analyses showed that four of these contained restricted substances (lead and SCCPs) in concentrations in excess of the limit values. Two hand-held controllers contained low concentrations or restricted substances and unrestricted substances. None of the substances sought were found in five of the hand-held controllers.

2.3.7 Chargers

Two chargers for electronics were tested in 2015. Lead in a concentration in excess of the limit value was found in one of these and none of the substances sought were found in the other.

2.3.8 Overview electrical products

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

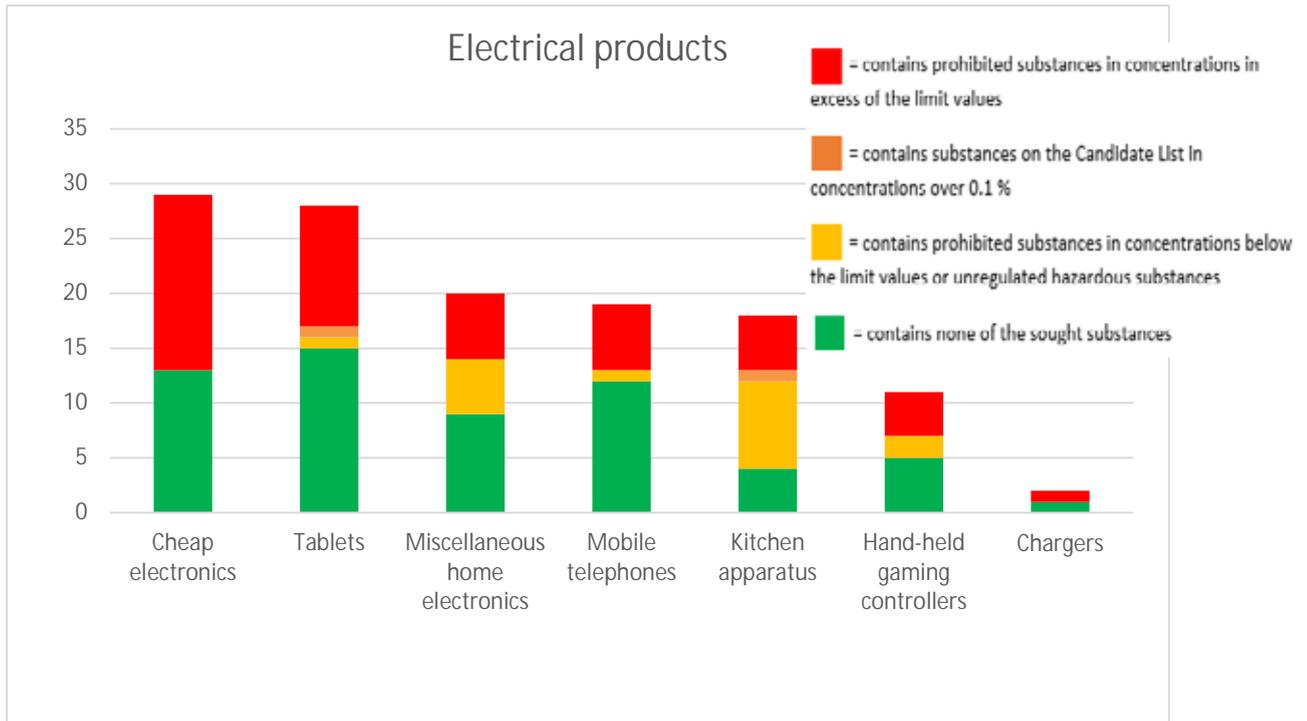


Figure 5. Electrical products that have been analysed by the Swedish Chemicals Agency over the course of 2014 and 2015.

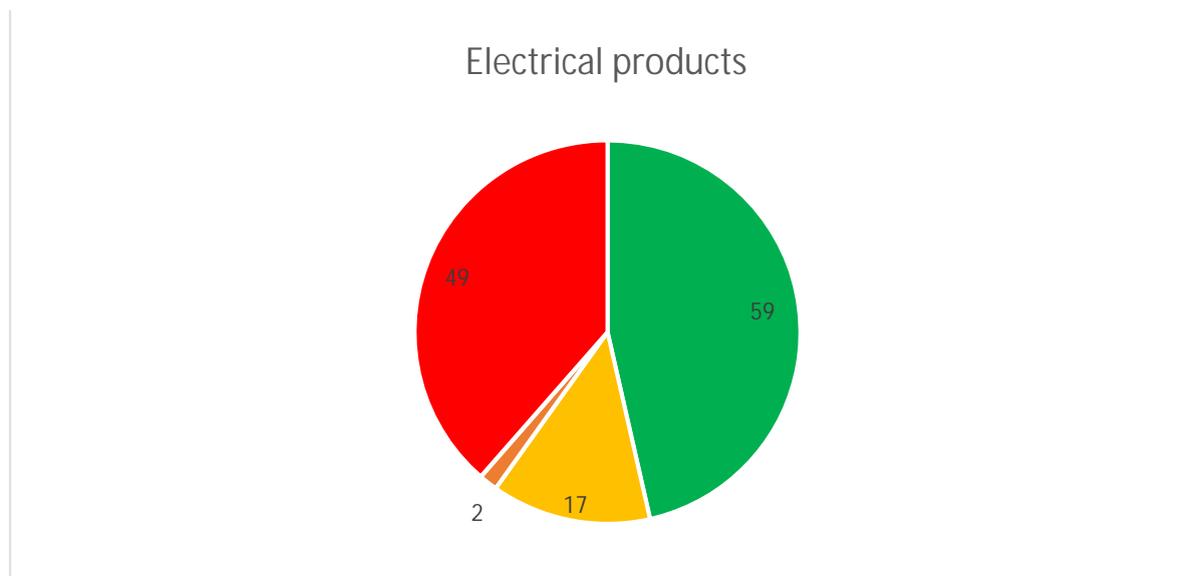


Figure 6. The number of electrical products that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1% (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.4 Building materials and furniture

We have analysed 128 articles in the group building materials and furniture and in these we have found prohibited concentrations of:

- azo dyes and DEHP in textiles for home furnishing
- SCCPs, cadmium and the phthalates DEHP and DIBP in bathroom articles made of plastic
- formaldehyde in wood planks (emission)
- DEHP in other plastic articles.

2.4.1 Textiles for home furnishing

A total of 52 textile articles for home furnishing were analysed as part of a project looking at textiles for home furnishing in 2014 and one looking at plastic articles in 2015. Of these, three contained prohibited concentrations of azo dyes. A high concentration of the phthalate DEHP, which is included on the Candidate List, was found in one tablecloth. A further three articles contained low concentrations of substances for which there is no restriction (NPEOs). None of the substances sought were found in the other 45 articles.

2.4.2 Bathroom articles

In 2015, 43 different plastic articles for the bathroom, e.g. shower curtains, bath mats and shower hoses, were tested. Four of these contained prohibited concentrations of SCCPs and/or cadmium. Six articles contained more than 0.1 per cent by weight of the phthalates DEHP or DIBP, which are included on the Candidate List. A further four bathroom articles contained substances that are not restricted in this group of articles. None of the substances sought were found in 29 of these articles.

2.4.3 Wood planks

Over the course of 2014, the Swedish Chemicals Agency ordered the testing of 18 wood planks looking for emissions of formaldehyde. According to the tests, one of these did not comply with the requirements. The measured concentration of formaldehyde was close to the limit value for two of the wood planks.

2.4.4 Other plastic articles

In 2015, 15 other plastic articles in the group building materials and furniture were analysed as part of a project looking at plastic articles. A concentration in excess of 0.1 per cent by weight of the phthalate DEHP, which is included on the Candidate List, was found in one of these, a drainpipe made of plastic. Low concentrations of substances or unregulated substances were found in a further three articles. None of the substances sought were found in the remaining eleven articles.

2.4.5 Overview building materials and furniture

Figure 7 and Figure 8 contain overviews of how many articles in this group of articles have been tested and the results of the analyses.

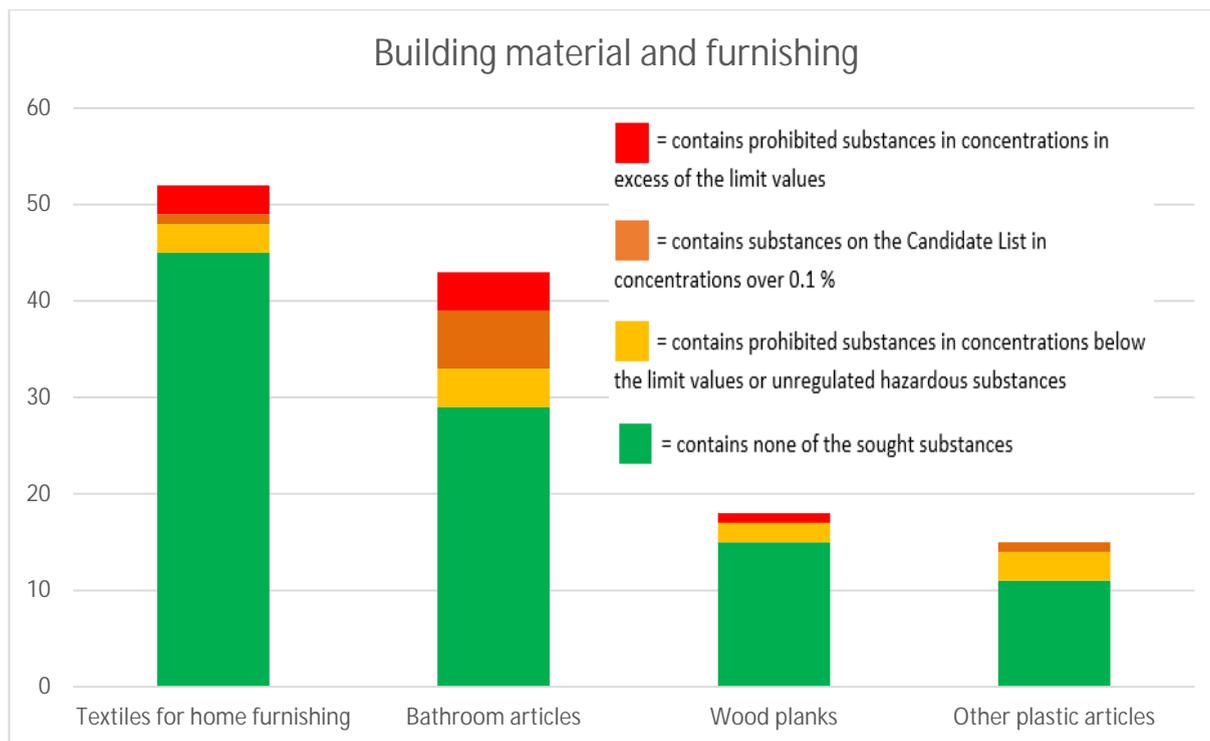


Figure 7. Building materials and furniture that have been analysed by the Swedish Chemicals Agency over the course of 2014 and 2015.

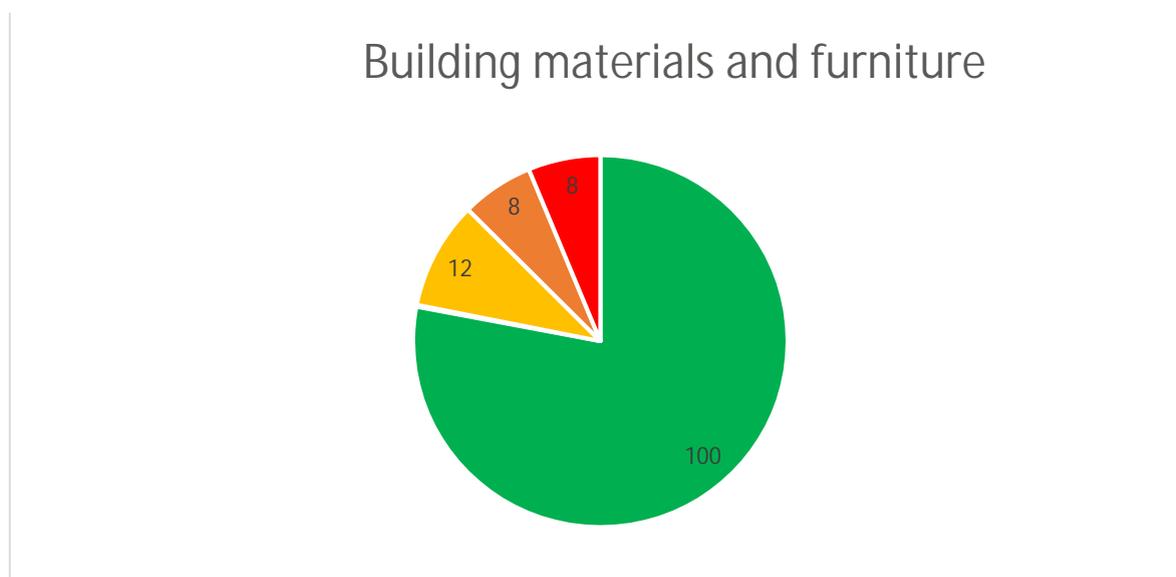


Figure 8. Distribution of building materials and furniture that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1 % (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances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

2.5 Sports and leisure equipment

We have analysed 55 articles in the group sports and leisure equipment and in these we have found prohibited concentrations of:

- SCCPs and DEHP in sports equipment
- SCCPs and DEHP in garden articles
- SCCPs and DMFa in office articles
- the phthalates DEHP and DIBP in articles for animals.

2.5.1 Sports equipment

In 2015, 20 articles of sports equipment such as training tools were analysed. Two of these, one yoga mat and a plastic knife for martial arts, contained prohibited concentrations of SCCPs. Three articles contained the phthalate DEHP (included on the Candidate List) in concentrations in excess of 0.1 per cent by weight. Low concentrations of substances or unregulated substances were found in ten articles. None of substances sought were found in five of the articles of sports equipment.

2.5.2 Garden articles

As part of the plastic project in 2015, 14 garden articles were tested, one of which, a protective cover for growing boxes, contained prohibited concentrations of SCCPs. Three articles contained the phthalate DEHP (included on the Candidate List) in concentrations in excess of 0.1 per cent by weight. Low concentrations of substances or unregulated substances were found in a further three articles. None of the substances sought were found in seven of the garden articles.

2.5.3 Office articles

Twelve plastic office articles were analysed in 2015. One clipboard contained a prohibited concentration of SCCPs. One article contained the substance dimethylformamide (DMFa), which is included on the Candidate List, in a concentration in excess of 0.1 per cent by weight. A further four articles contained restricted substances in low concentrations or unrestricted substances. None of the substances sought were found in six of the twelve office articles.

2.5.4 Articles for animals

In 2015, five plastic articles intended for animals were analysed as part of the plastic project. Two of these contained the phthalates DEHP and/or DIBP (included on the Candidate List) in concentrations in excess of 0.1 per cent by weight. Two others contained low concentrations of a restricted substance or an unrestricted substance. One of the articles contained none of the substances sought.

2.5.5 Bathing accessories

Four bathing accessories, for example air beds and seat cushions for pools, were analysed in 2015. Low concentrations of substances or unregulated substances were found in two articles. None of the substances sought were found in two of the articles.

2.5.6 Overview sports and leisure equipment

Figure 9 and Figure 10 contain overviews of how many articles in this group of articles have been tested and the results of the analyses.

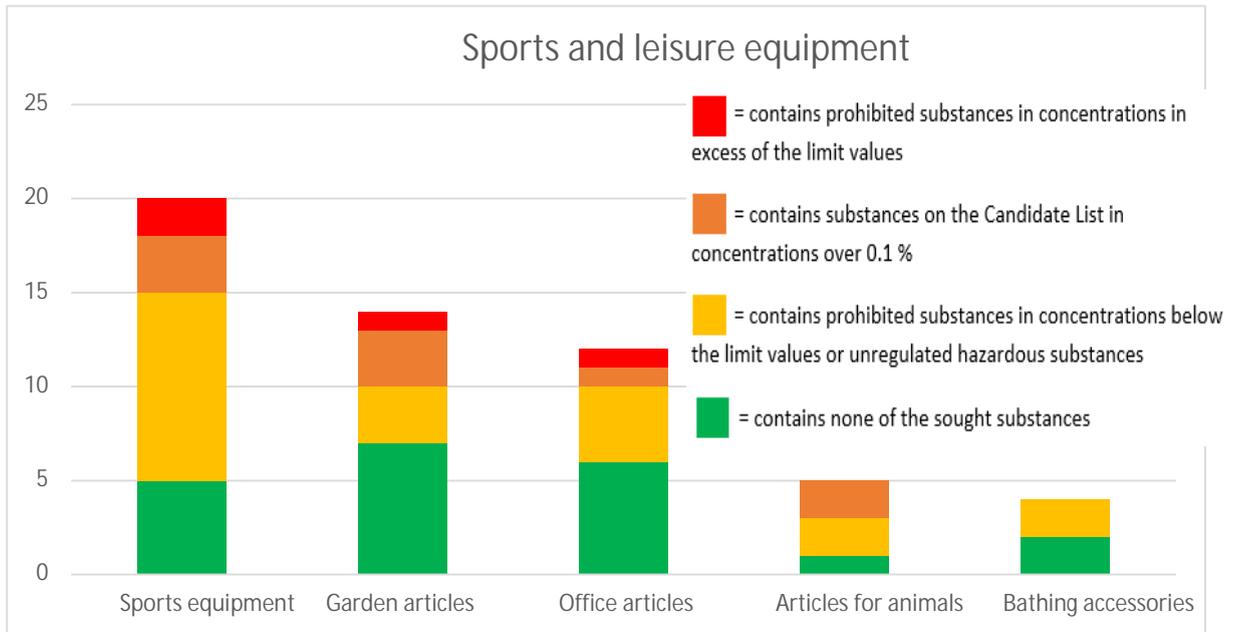


Figure 9. Sports and leisure equipment that has been analysed by the Swedish Chemicals Agency over the course of 2014 and 2015.

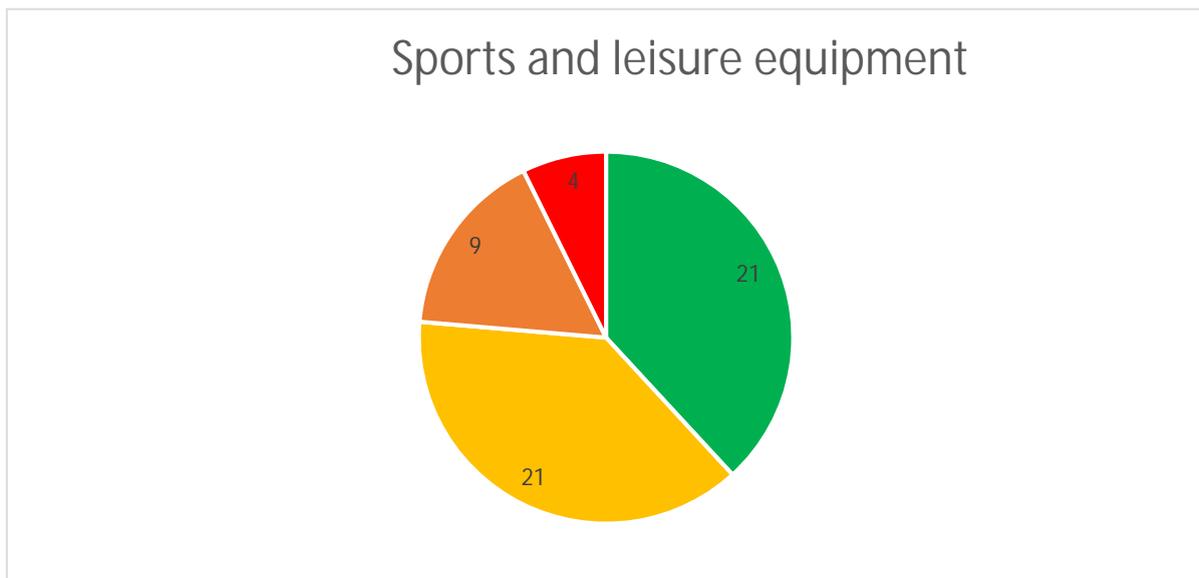


Figure 10. Distribution of sports and leisure equipment that contained restricted substances in excessive concentrations (red), contained substances on the Candidate List over 0.1 % (orange), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought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

2.6 Chemical products

We have analysed 49 chemical products and in these we have found prohibited concentrations of:

- chloroform in nail adhesive
- hexachlorobenzene in fireworks.

2.6.1 Adhesives

In 2014, eight adhesives used for bicycle repair and eight nail adhesives were analysed. Two of the nail adhesives contained prohibited concentrations of chloroform. Five nail adhesives contained chloroform in concentrations under the limit value and one contained none of the substances sought. Seven of the bicycle adhesives contained toluene and/or benzene in concentrations under the limit values and none of the substances sought were found in one.

2.6.2 Fireworks

In 2015, the colourants in 18 fireworks were analysed. Hexachlorobenzene was found in a concentration in excess of the limit value in one of these. None of the substances sought were found in the other 17 fireworks analysed.

2.6.3 Preservatives in paint

As part of a project looking at allergens in paint, 15 paints were analysed for such substances. The intention was to compare the concentrations of these substances with the warning information on the label and the safety data sheet. The substances sought were not restricted substances, rather those that can cause allergic reactions and products that contain these must therefore be labelled with some warning information. The results showed that the warning information was consistent with the content of all products.

2.6.4 Overview of analyses of chemical products

Figure 11 and Figure 12 contain overviews of how many chemical products of various types have been tested and the results of the analyses.

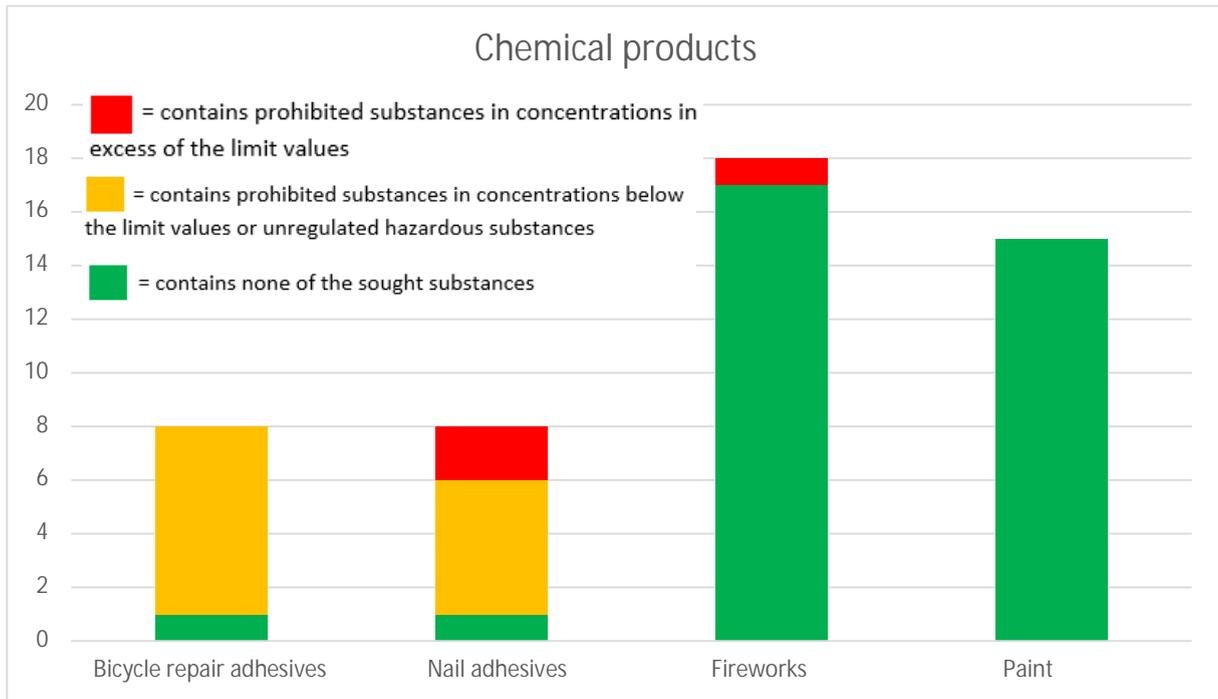


Figure 11. Chemical products that have been analysed by the Swedish Chemicals Agency over the course of 2014 and 2015.

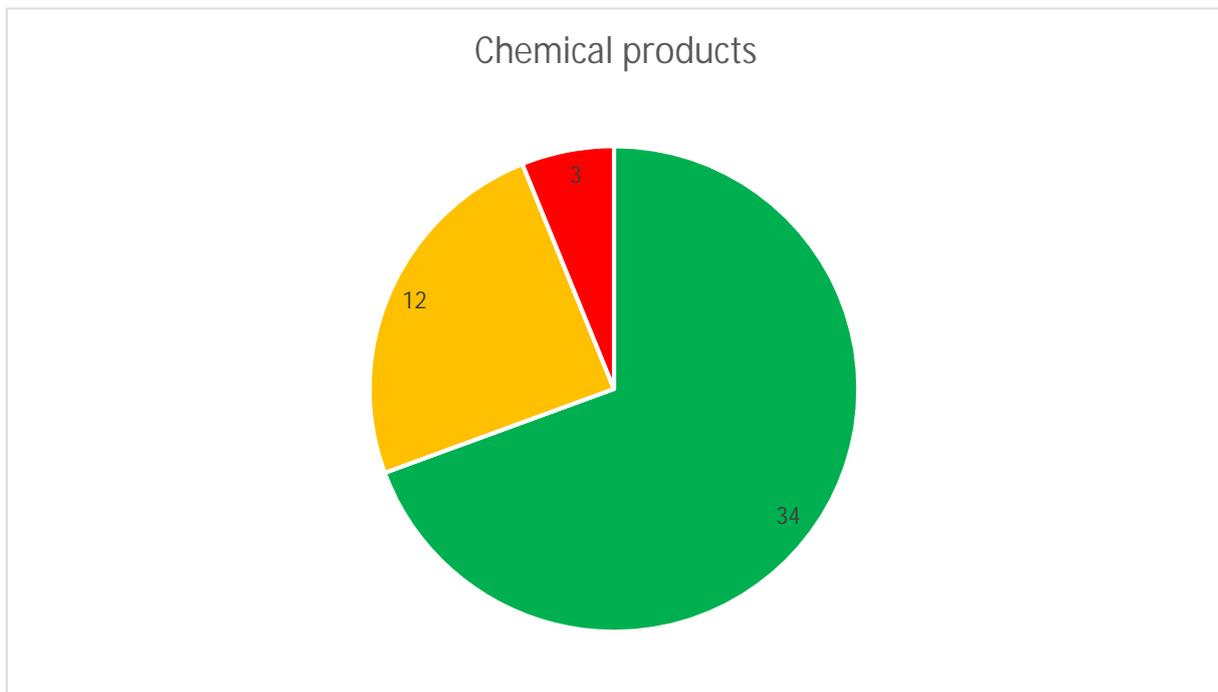


Figure 12. Distribution of chemical products that contained restricted substances in excessive concentrations (red), contained low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

2.7 Packaging

Aside from the above named articles, packaging for these made of PVC plastic has also been analysed. Over the course of 2014 and 2015, cadmium has been found in prohibited concentrations in plastic packaging in three cases.

3 Discussion

3.1 Overview of the Swedish Chemicals Agency's analyses

Over the course of 2014 and 2015, the Swedish Chemicals Agency has analysed 1,930 articles and chemical products. This figure is significantly higher than in the past, which is partly explained by the project regarding jewellery undertaken in partnership with the municipalities. In this project, the municipalities purchased jewellery that was sent to the Swedish Chemicals Agency for analysis and this project is responsible for 1,162 of the total number of articles analysed. In addition, the Swedish Chemicals Agency continues to give high priority to the analysis of articles within its enforcement activities.

The figure below shows how many products in the various categories have been analysed and the results of these analyses. The bar for *Clothing, shoes and accessories* is reduced in scale ten times in order to fit in the diagram. The correct figures are shown in the bar.

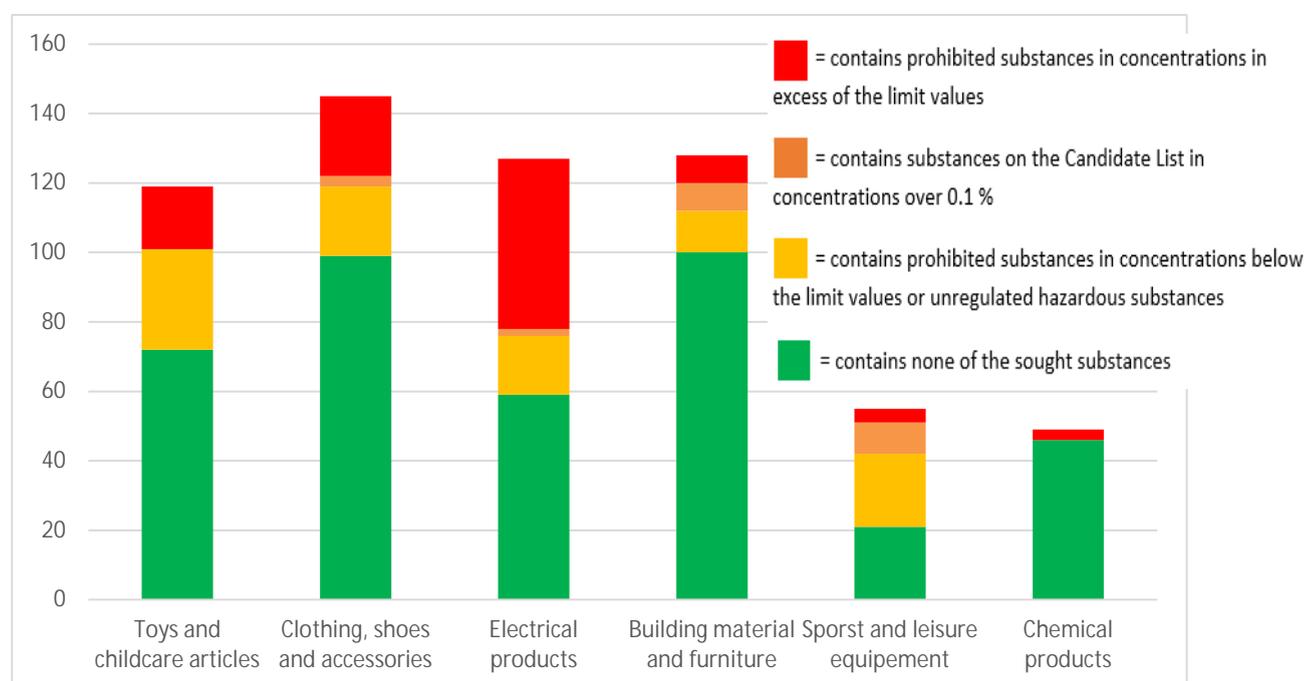


Figure 13. Number of articles of various types and chemical properties that the Swedish Chemicals Agency has analysed over the course of 2014 and 2015.

The group of articles in which the largest number of regulatory violations has been found is *Electrical products*. The number articles that contained prohibited substances in concentrations in excess of the limit values in this category is equivalent to 39 per cent. In some projects, for example the one looking at cheap electronics, the proportion was even higher (55 per cent). One reason for this is that there are specific regulations for this group of articles (the RoHS directive) that restrict certain substances and of these it was primarily lead that was found. In the analyses, SCCPs have also been found in this group of articles. SCCPs are restricted in all types of articles, but are mainly found in softened PVC plastic, which a lot of electronic articles contain.

Substances included on the Candidate List can also be found in concentrations in excess of 0.1 per cent by weight in many of the articles that contain prohibited substances (coloured red in the figure). This means that more articles than those which can be seen in the figures (coloured orange) contain particularly hazardous substances and in such cases, suppliers are obliged to inform the recipient about the content.

In many cases, substances that are not prohibited, but are considered to be particularly hazardous have been found, for example substances on the Candidate List in the REACH regulation. Those companies that supply such articles are obliged to inform the recipient about the content, which is checked as part of our enforcement activities. These substances are those that are in the process of being evaluated and may end up being restricted in future. In addition, many substances that are not restricted in the specific group of articles, but for which there are regulations concerning their presence in other types of articles are also found. One such example are the phthalates DINP and DIDP, which are restricted in toys and childcare articles, but which are often present in other articles made of soft plastic.

In total, 315 of the 1,930 products analysed contained prohibited substances in concentrations that exceeded the limit values, which is equivalent to 16 per cent. The synthesis conducted for the analyses that took place in the years 2008 to 2013 showed that 14 per cent (256 of 1,775) products did not comply with the legislation.

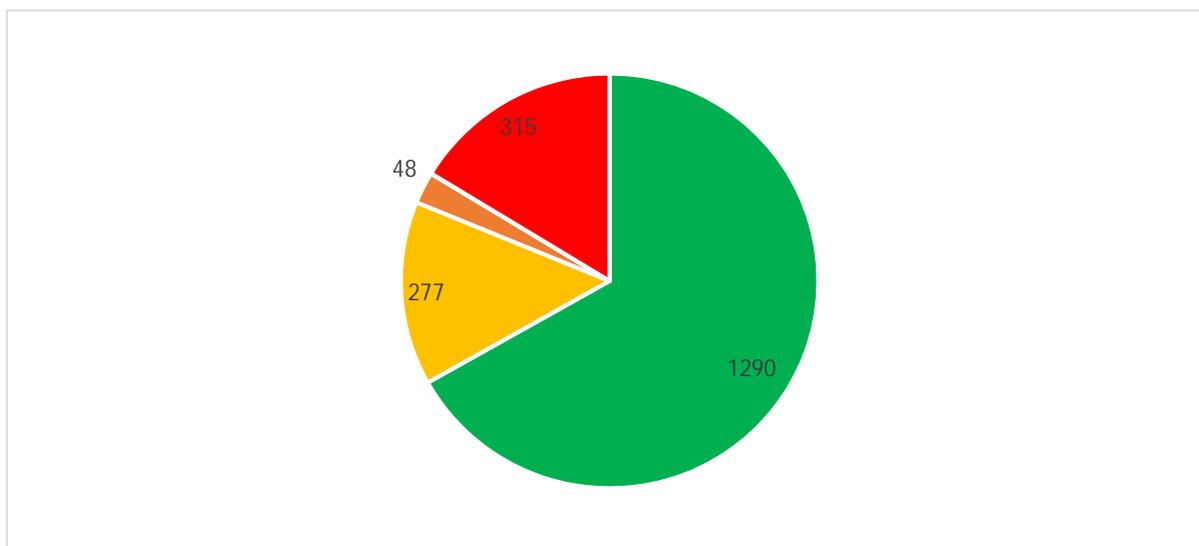


Figure 14. Distribution of all products analysed over the course of 2014 and 2015 that contained restricted substances in excessive concentrations (red), substances on the Candidate List (orange), low concentrations or unrestricted substances (yellow) or did not contain any of the substances sought (green).

3.2 What do the analyses lead to?

The analyses ordered by the Swedish Chemicals Agency within the scope of its enforcement activities become enforcement cases. In some cases, the analyses of random 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, the company from which the products come is informed. 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 action 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 prosecution⁴.

⁴ Further information concerning the Swedish Chemicals Agency's reports concerning prosecution can be found in Enforcement Memo. 1/13.

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 action. Hazardous products are also reported to RAPEX⁵ so that other authorities, companies and consumers can obtain information and take action 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's⁶ working group for restrictions, the EU's 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 material. 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 RAPEX⁷, where EU member states report products that carry a 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 group of articles in which we have conducted the largest number of analyses over the course of 2014 and 2015 is *Clothing, shoes and accessories*, which is due to the collaborative project involving jewellery. Otherwise, the number of analyses is relatively evenly distributed between the various groups of articles.

We have not analysed any pesticides in 2014 and 2015. Such analyses are resource-intensive and previous experience has indicated certain technical problems. However, analyses of pesticides are planned in the years ahead.

The majority of analyses are conducted on articles and only a small proportion are conducted on chemical products. The reason for this is that chemical products have more comprehensive requirements in terms of labelling and product information than articles and can be checked in other ways. For articles, analyses are usually required in order to check that they comply with the legislation. Nevertheless, analysing chemical products may be a good complement in order to check that warning and safety information is relevant and accurate.

⁵ RAPEX = Rapid Alert System for dangerous non-food products. Common EU system to which market surveillance authorities in the EU report dangerous products.

⁶ The forum for information exchange concerning execution coordinates enforcement matters applicable to, for example the REACH and CLP regulations.

⁷ RAPEX = Rapid Alert System for dangerous non-food products.

The Swedish Chemicals Agency will continue working with the action plan for a non-toxic everyday environment and 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 that contain hazardous substances. Generally speaking, articles that are sold to other companies or via public procurement are more likely to comply with legislative requirements concerning chemicals, which is partly due to these customers setting more stringent requirements than consumers. In a forthcoming enforcement strategy concerning articles, the focus of future enforcement will be stated more specifically. The Swedish Chemicals Agency intends to continuously publish the results from enforcement projects involving analyses, partly in the form of reports such as this and partly in the form of shorter reports for individual projects.

3.5 Further information

Further information about substances and regulation is available at www.kemikalieinspektionen.se. Reports from the Swedish Chemicals

Agency's enforcement projects⁸:

- Clothing and shoes 2015
- Plastic 2015
- Enforcement 2/15 – Materials in the interior environment 3, textiles interior
- Enforcement 1/15 – Jewellery in the retail sector
- Enforcement 5/14 – The Swedish Chemicals Agency's analyses in conjunction with enforcement 2008-2013
- Formaldehyde in wood planks – Enforcement project 2014⁹

The Swedish Chemicals Agency's annual reports also contain information about enforcement initiatives¹⁰.

⁸ <http://www.kemikalieinspektionen.se/hitta-direkt/publikationer/tillsynsrapporter>

⁹ <http://www.kemi.se/files/4550befd8a7449e9b1fd942770d21199/formaldehyd-i-traskivor-tillsynsprojekt-2014.pdf>

¹⁰ <http://www.kemi.se/om-kemikalieinspektionen/organisation/sa-har-styrs-vi>

4 Appendixes

Appendix 1 – Glossary

Abbreviation	Explanation
XRF	X-ray fluorescence – an analytical method for screening analyses of elements on the surface of materials.
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals – a common EU chemical regulation.
RoHS	Restriction of the use of certain hazardous substances in electrical and electronic equipment – a common EU directive concerning hazardous substances in electronics.
CMR	Carcinogenic, mutagenic, reprotoxic – substances that may cause cancer, harm the gene pool or disrupt reproduction.
POPs	Persistent organic pollutants – collective term for organic substances that persist in the environment and may cause harm. Also the name of a common EU regulation concerning such substances.
PVC	Polyvinyl chloride – a type of plastic that can be made soft by adding plasticisers.
RAPEX	Rapid Alert System for dangerous non-food products – a system to which enforcement authorities within the EU report hazardous

Appendix 2 – Substances

Group of	Examples of substances	Use
Phthalates	DEHP (bis(2-ethylhexyl) phthalate) DBP (dibutyl phthalate) BBP (benzylbutylphthalate) DINP (diisononyl phthalate) DIDP (diisodecyl phthalate) DNOP (di-n-octylphthalate) DIBP (diisobutyl phthalate)	Used, for example, as plasticisers in plastics, primarily plasticised polyvinyl chloride.
Polybrominated diphenyl ethers (PBDEs)	decaBDE (decabromodiphenyl ether) octaBDE (octabromodiphenyl ether) pentaBDE (pentabromodiphenyl	Used as flame retardants in electronics and textiles, among other things.
Chlorinated paraffins	Short-chained chlorinated paraffins (SCCPs)	Used as plasticisers and flame retardants polyvinyl plastics, for example.
	Dimethylformamide (DMFa)	Used, for example, as solvents when textiles are coated with a PU film.
	Hexachlorobenzene (HCB)	Used, for example, as an colour-intensifying additive in fireworks and as a pesticide.

Appendix 3 – Legislation

The regulation that fall within the Swedish Chemicals Agency's enforcement area are listed below.

Act/Ordinance/Regulation/EU regulation
Act
Environmental Code (1998:808).
Product Safety Act (2004:451).
Safety of Toys Act (2011:579)
Ordinances
Environmental Inspection Ordinance (2011:13).
Ordinance (2007:19) on PCBs etc.
Biocidal Products Ordinance (2000:338).
Plant Protection Products Containing Nematodes, Insects or Arachnids Ordinance (2006:1010)
Prohibition in Certain Cases in Connection with the Handling, Import and Export of Chemical Products Ordinance (1998:944).
Chemical Products and Biotechnical Organisms Ordinance (2008:245).
Product Safety Ordinance (2004:469).
Safety of Toys Ordinance (2011:703)
Hazardous Substances in Electric and Electronic Equipment Ordinance (2012:861).
Regulations
The Swedish Chemicals Agency's Classification and Labelling Regulations (KIFS 2005:7).
The Swedish Chemicals Agency's Chemical Products and Biotechnical Organisms Regulations (KIFS 2008:2).
The Swedish Chemicals Agency's Pesticides Regulations (KIFS 2008:3).
EU regulations
Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (CLP)
Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants (POPs) and amending Directive 79/117/EEC.
Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents and amending regulation (EC) No 907/2006
Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market and Commission Regulation (EU) No 547/2011 of 8 June 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards labelling requirements for plant protection products.
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products .

EU directives/Incorporation into Swedish statutes

Council Directive 1999/13/EC and Directive 2004/42/EC of the European Parliament and of the Council on emissions of volatile organic compounds (**VOCs**)

These directives are incorporated into Swedish legislation within the scope of the Environmental Code, primarily in the Swedish Chemicals Agency's Pesticides Regulations (KIFS 2008:2).

Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (**RoHS 2**).

The directive is incorporated into Swedish legislation with the Hazardous Substances in Electric and Electronic Equipment Ordinance (2012:861). The provisions exist within the scope of the Environmental Code in the Prohibition in Certain Cases in Connection with the Handling, Import and Export of Chemical Products Ordinance (1998:944) and in the Swedish Chemicals Agency's Pesticides Regulations (KIFS 2008:2). In addition, some regulations from the directive are incorporated in the Ordinance (SFS 2005:209) on Producer Responsibility for Electrical and Electronic Products.

Directive 1999/45/EC of the European Parliament and of the Council concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the **classification, packaging and labelling of dangerous preparations**.

The directive is incorporated into Swedish legislation within the scope of the Environmental Code and in the Swedish Chemicals Agency's Classification and Labelling Regulations (KIFS 2005:7).

Council Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the **classification, packaging and labelling of dangerous substances**.

The directive is incorporated into Swedish legislation within the scope of the Environmental Code and in the Swedish Chemicals Agency's Classification and Labelling Regulations (KIFS 2005:7) and the Swedish Chemicals Agency's Chemical Products and Biotechnical Organisms Regulations (KIFS 2008:2).

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) and the Safety of Toys Ordinance (2011:703).

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 limit value that indicates the concentrations of substances that are prohibited. 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 per cent by weight of a particularly hazardous substance (that is included on the **Candidate List**) is to be informed of this.

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 per cent by volume for all the substances except cadmium for which the value is 0.01 per cent by weight. The RoHS Directive 2011/65/EU has replaced the previous RoHS Directive (2002/95/EC) and came into force in 2013.

The Toy Safety Directive (2009/48/EC)

The EU's 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 leach out, 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 the diisobutyl phthalate (DIBP). The directive also contains a requirement that toys not catch fire too easily, which is also within the Swedish Chemicals Agency enforcement area.

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 (EU) No 528/2012

The Biocidal Products Regulation sets out the requirements that must be fulfilled by biocidal products if they are to be released onto the market. Biocidal products are pesticides as they have properties such that they kill living organisms or render them harmless. Examples of biocidal products are rat poison, wood preservatives and disinfectants. The regulations also contains requirements concerning the labelling of articles treated with biocidal products.

The General Product Safety Directive 2001/95/EC

The General Product Safety Directive is a framework for product safety within EU legislation and contains general consumer safety regulations. There are no direct prohibitions or limit values in the directive, but it is possible to make decisions concerning specific restriction on the basis of the directive. The directive can also be used in enforcement when chemical risks involving consumer products are detected that are not regulated in any other legislation.

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.

Regulations that are specific to Sweden

There are a few regulations specific to Sweden that restrict the presence of chemical substances in chemical products and articles. Examples of these are the ban on mercury and the regulation concerning how much formaldehyde may be given off by wood-based planks. These regulations are found in the *Prohibition in Certain Cases in Connection with the Handling, Import and Export of Chemical Products Ordinance (1998:944)* and in the Swedish Chemicals Agency's regulation KIFS 2008:2.



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