

RoHS Adco Joint project 2019

Products with LED lamps and batteries

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KEMI

Swedish Chemicals Agency

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Executive Summary

The purpose of RoHS AdCo is to share enforcement experience on RoHS (2011/65/EU) with colleagues on market surveillance authorities in the EU. The group has carried out several coordinated projects over the last years. The joint project of 2019 was focused on products which include LED-lamps and batteries. The aim of the project was to assess compliance levels and to work together in order to ensure harmonisation of enforcement of RoHS across Europe. In total 114 products were analysed.

29 of the 114 tested products (25 per cent) contained more than the tolerated maximum concentration of a RoHS restricted substance. The most common non-compliance was lead in solders. The results also showed findings of cadmium and DEHP. The latter were however found in products put on the market before the restriction for phthalates came into force.

For some market surveillance authorities this project also included enforcement of substances restricted in the Batteries Directive (2006/66/EC) and in Regulation (EU) No 2019/1021 (POPs). Mercury was found in one battery and SCCP, which is a POPs substance, was found in two products.

Labels were controlled for 74 products and 20 of these were reported in the project as poor labelled (27 per cent). 8 (11 per cent) of the 74 products were CE-marked despite substance failure. In these cases, the manufacturer has put the CE-marking on a product which is not RoHS compliant. This is highly unfortunate as it is false and misleading.

1 Introduction

The RoHS AdCo group is a network of RoHS enforcement authorities in the EU. The objective of the group is to ensure the harmonisation of the enforcement of the RoHS Directive by sharing best practise amongst market surveillance authorities (MSAs) in EU member states. In addition, the network has joint projects where MSAs share data and information to provide an overview of compliance in a particular product category. Joint projects are planned and performed by the AdCo group members to enhance cooperation between MSAs. By sharing results and enforcement experiences a more harmonised enforcement in general and of RoHS in particular can be provided.

This report presents the results of a joint project carried out during 2019 on LED lamps and batteries. The participating states in this project were Finland, Belgium, Luxembourg, Norway, The Netherlands and Sweden. Sweden has been the project leader.

1.1 The RoHS directive

The RoHS Directive¹ entered into force the 1 July 2006 and for electric and electronic equipment (EEE) it restricts the use of cadmium, lead, mercury, hexavalent chromium, the groups of brominated flame retardants polybrominated diphenyl ethers (PBDE) and polybrominated biphenyls (PBB). From 22 July 2019 the four phthalates DEHP, BBP, DBP and DIBP are also covered by the directive. All these substances except cadmium has a maximum concentration value of 0.1 per cent by weight in homogenous materials. The maximum concentration value of cadmium is 0.01 per cent by weight.

By the 2 of January 2013 the scope of the directive was enlarged and more EEE products were covered. Requirements of CE marking, and technical documentation were also put into the new revised directive².

The aim of the RoHS directive is to prevent hazardous substances in electric and electronic products from causing harm to health and environment during production, use and when the products become waste.

1.2 EEE with LED lamps and batteries

At the RoHS AdCo meeting in Utrecht 2018 it was decided that EEE products which include LED lamps and batteries would be the scope of this joint project. The focus should be on the RoHS directive, but member states could choose whether including enforcement on batteries and the battery directive³. Some member states also included enforcement of substances restricted in the POPs-regulation⁴.

Rather cheap EEE products with LED lamps can easily be purchased on the web or at retailers. Often these products are imported from outside of EU where the RoHS legislation may not be known. Most MS involved in this project has experiences of imported EEE that do not fulfil the requirements in the EU legislation.

¹ Directive 2002/95/EC of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

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.

³ Directive 2006/66/EC

⁴ Regulation (EU) No 2019/1021 of the European Parliament and of the Council concerning Persistent Organic Pollutants (POPs)

2 Aim

The aim of the project was to assess the levels of compliance of products that include LED lamps and/or batteries. Another objective with enforcement is to encourage economic operators to work preventively to comply with the legislation.

3 Method

The participating countries decided themselves how to carry out the enforcement. Products were bought or demanded for by the participating MSAs from different economic operators.

The products were tested for substances restricted in RoHS and in some cases for substances covered by the battery directive and the POPs regulation. Some MSAs have the possibility to use an XRF instrument, often as a help to choose which components that can be sent to external laboratories for accredited analyses.

The discovered non-compliances were addressed with the responsible economic operator.

The data from the participating member states were collected in a Google spreadsheet and the results were compiled by Sweden

4 Results

In total 114 products were analysed. 29 of the 114 tested products (25 per cent) contained more than the tolerated maximum concentration of a RoHS restricted substance. The most common non-compliance was lead in solders which was found in 19 products (16 per cent).

Cadmium was found in 10 products (9 per cent).

The results also showed findings of DEHP in two products. However, these products were placed on the market before the restriction for phthalates came into force.

Two batteries contained too much mercury.

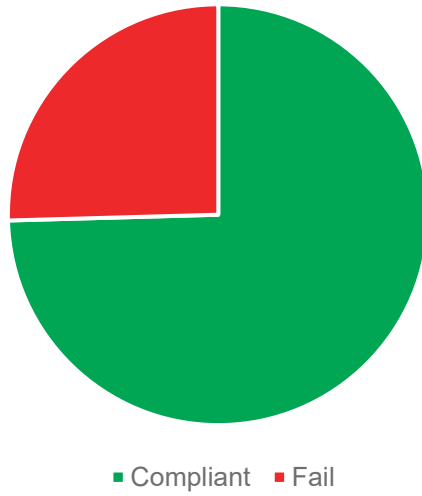
SCCP were found in two products.

The SVHC substances 1,2-dimethoxyethane and 1,3-propanesultone were found in concentrations over 0,1 per cent in seven and two batteries respectively.

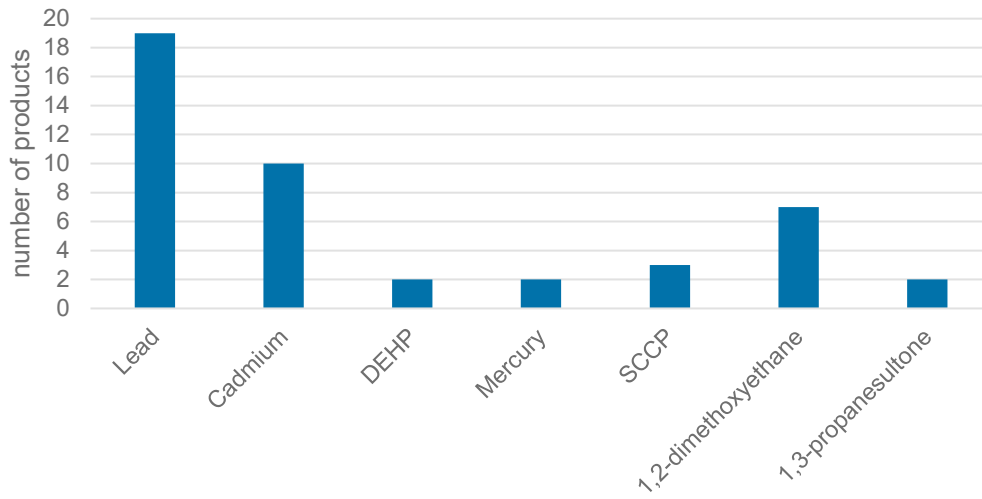
Labels were controlled for 74 products and 20 of these were reported in the project as poor labelled (27 per cent).

In cases where both labelling and substances were checked, 11 per cent of the products were CE-marked despite substance failure.

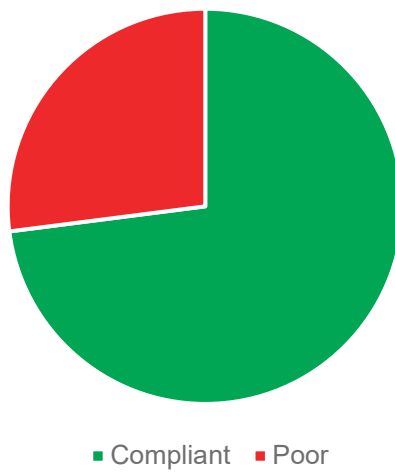
Products checked: Compliant/Fail



Found substances



Labelling



5 Conclusion

25 per cent of the controlled products did not meet substance requirements in European legislation (RoHS, the battery directive or POPs). The percentage does not differ much (one percent more) from the last ADCO-project when USB cables were targeted.

Products which includes LED lamps and batteries are often products that the customer may find in the cheaper product segment. Most products controlled in this project were manufactured in China.

As in the previous project, lead remains to be the most found substance that exceeds the maximum concentration value in RoHS. Cadmium, Mercury and DEHP were found in few products.

The phthalates had not been adopted in RoHS when the controls were performed. The figure might not be representative as the restricted phthalates were not in focus by the participating countries. Since July 22 2019 four phthalates, DEHP, DBP, BBP and DIBP, are restricted in RoHS.

Among the products that were controlled both for substances and labelling, 11 per cent of them had a CE-mark although restricted substances were found. In these cases the manufacturer has put the CE-marking on a product which is not RoHS compliant. This is highly unfortunate as it is false and misleading.

In this product segment of cheap electronics most of the products are imported. 27 per cent of the products were reported as poor labelled which could mean lack of CE-marking, lack of an address to the importer and the manufacturer or a combination of this.

5.1 Recommendations

1. MSAs need to continue their enforcement of electronics. Future projects will include the four phthalates that now are restricted in RoHS.
2. The results of this enforcement project need to be spread to economic operators. Economic operators need to be informed of the fact that electronic products show a rather high percentage fail in controls made by authorities. It is also important that their products must meet both material restrictions and the requirements on labelling and documentation. A short summary of the results together with recommendations on where to find more information on how to work preventively with RoHS should be published. Perhaps an article on the subject can be published on the commission website, in branch magazines and on the web pages of market surveillance authorities.
3. Collaboration with customs can help MSAs in finding non-compliant products. Especially the labelling can be controlled by customs. Some member states already have elaborated collaboration with customs. Others are still starting up and can perhaps be advised by more experienced colleagues on how a collaboration can be done.
4. If possible Chinese authorities should be contacted and informed of the results. Most of the analysed products in this project were made in China.

1 Appendix, compiled data

Country	Product nr	Testing of RoHS restricted substances	Pass/Fail	Document check	Pass/Fail	Label check	Pass/Fail	Comment	Comment
Norway	1	XRF, lab analysis	Fail	X	Fail	X	Fail	Withdrawn from the market	
	1.3 (battery)					X	Fail		
Norway	2	XRF, lab analysis	Pass	X	Pass	X	Pass		
Norway	3.1	Lab analysis	Fail			X		Withdrawn from the market	Pb in solder
Norway	3.2 (battery)	Lab analysis	Fail						Hg
Norway	4 (battery)	Lab analysis	Fail						Cd
Norway	5.1	Lab analysis	Fail			X	Fail	Withdrawn from the market	Pb in solder, DEHP in cable
Norway	5.3 (battery)	Lab analysis	Pass					Withdrawn from the market	
Norway	6	Lab analysis	Pass						
Norway	7	Lab analysis	Pass			X	Fail	No name or address to importer	

Norway	8	Lab analysis	Fail			X	Fail	Withdrawn from the market	Pb in solder, DEHP in cable
Norway	9	Lab analysis	Fail					Withdrawn from the market	
Luxembourg	10	XRF, Lab analysis	Fail					Publish sales ban and online	Pb in solder
Luxembourg	11	XRF, Lab analysis	Pass						
Luxembourg	12	XRF, Lab analysis	Pass						
Luxembourg	13	XRF, Lab analysis	Pass						
Luxembourg	14	XRF, Lab analysis	Fail					Publish sales ban and online	Pb, Cd in solder. Hg in battery
Luxembourg	15	XRF, Lab analysis	Pass						
Luxembourg	16	XRF, Lab analysis	Fail					Publish sales ban and online	SCCP in cables
Luxembourg	17	XRF, Lab analysis	Pass						
Luxembourg	18	XRF, Lab analysis	Fail					Publish sales ban and online	SCCP in cables
Luxembourg	19	XRF, Lab analysis	Pass						

Luxembourg	20	XRF, Lab analysis	Pass						
Luxembourg	21	XRF, Lab analysis	Pass						
Luxembourg	22	XRF, Lab analysis	Pass						
Luxembourg	23	XRF, Lab analysis	Pass						
Luxembourg	24	XRF, Lab analysis	Pass						
Luxembourg	25	XRF, Lab analysis	Fail					Publish sales ban and online	Pb, Cd in solder
Luxembourg	26	XRF, Lab analysis	Pass						
Luxembourg	27	XRF, Lab analysis	Pass						
Luxembourg	28	XRF, Lab analysis	Pass						
Luxembourg	29	XRF, Lab analysis	Pass						
Luxembourg	30	XRF, Lab analysis	Pass						
Luxembourg	31	XRF, Lab analysis	Pass						
Luxembourg	32	XRF, Lab analysis	Pass						
Luxembourg	33		Pass						
Luxembourg	34	XRF, Lab analysis	Fail						Pb in solder

Luxembourg	35	XRF, Lab analysis	Pass						
Belgium	36	XRF	Pass			X	Pass		
Belgium	37	XRF	Pass			X	Pass		
Belgium	38	XRF	Pass			X	Pass		
Belgium	39	XRF	Pass			X	Pass		
Belgium	40	XRF	Pass			X	Pass		
Belgium	41	XRF	Pass			X	Pass		
Belgium	42	XRF	Pass			X	Pass		
Belgium	43	XRF, Lab analysis	Fail			X	Fail	No CE-marking, no addresses	Pb, Cd in solder
Belgium	44	XRF	Pass			X	Pass		
Belgium	45	XRF	Pass			X	Pass		
Belgium	46	XRF	Pass			X	Pass		

Belgium	47	XRF	Pass			X	Pass		
Belgium	48	XRF	Pass			X			
Belgium	49	XRF, Lab analysis	Fail			X			Pb in solder
Belgium	50	XRF	Pass			X	Pass		
Belgium	51	XRF	Pass			X	Pass		
Belgium	52	XRF	Pass			X	Pass		
Belgium	53	XRF	Pass			X	Pass		
Belgium	54	XRF	Pass			X	Pass		
Belgium	55	XRF	Pass			X	Pass		
Belgium	56	XRF	Pass			X	Fail		
Belgium	57	XRF, Lab analysis	Fail			X	Fail		Pb in solder
Belgium	58	XRF	Pass			X	Fail		
Belgium	59	XRF	Pass			X	Fail		
Finland	60	XRF	Pass			X	Pass		
Finland	61	XRF	Pass			X	Pass		
Finland	62	XRF, Lab analysis	Pass			X	Pass		
Finland	63	XRF, Lab analysis	Pass			X	Pass		
Finland	64	XRF, Lab analysis	Pass			X	Pass		
Finland	65	XRF	Pass			X	Pass		

Finland	66	XRF	Pass			X	Pass		
Finland	67	XRF	Pass	X	Pass	X	Pass		
Finland	68	XRF	Pass			X	Pass		
Finland	69	XRF	Pass			X	Pass		
Finland	70	XRF	Pass			X			
Finland	71	XRF	Pass			X	Pass		
Finland	72	XRF	Pass			X	Pass		
Finland	73	XRF	Pass			X	Pass		
Finland	74	XRF	Pass			X	Pass		
Finland	75	XRF	Pass			X	Pass		
Finland	76	XRF	Pass			X	Pass		
Finland	77	XRF	Pass			X	Pass		
Finland	78	XRF	Pass			X	Pass		
Finland	79	XRF	Pass			X	Pass		
Finland	80	XRF	Pass			X	Pass		
Finland	81	XRF	Pass			X	Pass		
Finland	82	XRF	Pass				Pass		
Finland	83	XRF	Pass			X	Pass		
Finland	84	XRF	Pass			X	Pass		
Sweden	85	XRF, Lab analysis	Fail			X	Fail		
	85.1 battery	XRF, Lab analysis	Fail			X	Fail	No contact address. Withdrawn from market	Pb, Cd

Sweden	86	XRF	Pass			X	Fail	Labelling corrected	
	86.1 battery	XRF, Lab analysis				X	Fail	Labelling corrected	
Sweden	87	XRF, Lab analysis	Pass			X	Pass		
Sweden	88	XRF, Lab analysis	Pass			X	Pass		
Sweden	89	XRF, Lab analysis	Fail			X	Fail	Withdrawn from market	Pb in solder
Sweden	90	XRF	Pass			X	Fail	Labelling corrected	
Sweden	91	XRF, Lab analysis	Pass			X	Pass		
	92	XRF	Pass			X	Pass		
Sweden	92.1. battery	Lab analysis	Pass			X	Pass	Informing retailers about SVHC	SVHC found
Sweden	93. battery	Lab analysis	Pass						
Sweden	94. battery	Lab analysis	Pass						
Sweden	95	XRF, Lab analysis	Pass			X	Fail	Labelling corrected	
	95.2 battery	XRF, Lab analysis	Pass			X			SVHC found
Sweden	96	XRF, Lab analysis	Pass			X	Fail	Labelling corrected	SVHC found
	96.2 battery	XRF, Lab analysis	Pass			X			SVHC found
Sweden	97	XRF, Lab analysis	Pass			X	Fail	Labelling corrected	

	97.2	XRF, Lab analysis	Pass			X			
Sweden	98	Lab analysis	Pass			X	Pass		
Sweden	99	Lab analysis	Pass						SVHC found
Sweden	100	Lab analysis	Pass						
Sweden	101	Lab analysis	Pass						SVHC found
Sweden	102.battery	Lab analysis	Pass						SVHC found
Sweden	103	XRF, Lab analysis	Fail			X	Fail	No contact data, withdrawn	SCCP, DEHP in cable
Sweden	104battery	Lab analysis							
Sweden	105battery	Lab analysis							
Sweden	106.battery	Lab analysis							SVHC found
Sweden	107.battery	Lab analysis							
Sweden	108	XRF, Lab analysis				X	Fail	No contact address, no longer on market	Pb in solder
Sweden	108.2 battery	XRF, Lab analysis				X			SVHC found
Sweden	109. battery	XRF, Lab analysis							
Sweden	110.	Lab analysis	Fail			X	Fail	No CE-marking, no contact address withdrawn	Pb in solder
	110.2 battery								Pb,Cd

Sweden	111.battery	Lab analysis				X	Fail	No CE-marking. withdrawn	SVHC found
Sweden	112. battery	Lab analysis				X	Fail	No CE-marking. withdrawn	Pb, Hg
Sweden	113	XRF, Lab analysis				X	Fail	No CE-marking, withdrawn	Pb in solder
Sweden	114	XRF, Lab analysis				X	Pass		SVHC found

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