Japan Business Council in Europe

02 May, 2003

Dear Sir and Madam

We, Japan Business Council in Europe (JBCE) [1], are the organisation representing Japanese companies with significant operations in Europe. Our members are among leading multinational corporations in the world.

As you already know, we issued our position on RoHS concentration levels in our previous two papers (Attachment).

This paper is our background paper on the concentration issues to reinforce our opinion raised in the previous documents.

We are delighted to have this opportunity to contribute to the discussion in the comitology process.

If you have any questions, please feel free to contact our secretariat or myself.

Sincerely yours,

Takashi Sugiyama
Chairman, Environmental Committee
Japan Business Council in Europe

[1] For details, including a list of its member companies, please refer to the following website: http://www.jbce.org

JBCE background paper: RoHS concentration levels

This paper reinforces JBCE's previously stated opinion on the above matter by providing further background information and some additional analysis.

JBCE wants to highlight three issues

1. Concentration levels should be set at levels that allow inspection at reasonable costs.
2. Whether or not a restricted substance is still used intentionally should not play any part in deciding concentration levels.
3. Consistency with the ELV precedent is beneficial when the impact on the supply chain is considered.

1. Concentration levels should be set at levels that allow inspection at reasonable costs.

As was pointed out in JBCE's opinion dated December 13th ,2002(Please see the attachments) , there are two ways to measure concentration levels: the destructive and the non-destructive method. In order to test substance concentration at a single-digit ppm level, only the former method is employed. The costs of this are almost astronomical. Consequently concentration levels need to be set at levels that can be examined with the non-destructive method. The specific levels depend on the substances that need to be tested, but the figures set in the ELV directive allow for non-destructive testing.

2. Intentional usage of a restricted substance should not play any part in deciding concentration levels.

It is obviously environmentally inappropriate to set minimum concentration levels so that they can accommodate a certain degree of intentional usage of a banned or restricted substance. This would put into question the purpose and the effectiveness of the substance ban policy. JBCE is therefore of the opinion that intentional usage should not be raised in the context of setting minimum concentration levels.

On the other hand, intentionality should not be questioned either when a substance concentration is tested. Either the substance is present within its maximum concentration limit, and then everything is fine, or it is not, which makes it illegal. Intentionality is not relevant in this context. It is very difficult to establish if a certain substance is intentionally used or accidentally mixed somewhere in the supply chain. Having to go through an intentionality test could increase legal uncertainty and

will create unjustifiable costs for industry.

3. Consistency with the End of Life Vehicles Directive (ELV) precedent is beneficial when the impact on the supply chain is considered.

Modern cars are full of electric components. This means that the EEE manufacturers and the car industry share many suppliers. Having the same concentration limits for cars and EEE products would help avoid confusing suppliers.

Attachment 1

Japan Business Council in Europe

Dec. 13 ,2002

Dear

Japan Business Council in Europe (JBCE) [2]is the representative organization for Japanese companies , whose members identify themselves as leading multinational corporations in the world engaging with their business in Europe as well.

We are submitting the attached position paper on " Analytical methods, limits and costs for detection of hazardous substances in EEE" with regard to the RoHS Directive.

We understand that comitology process will start soon. We highly appreciated if our comments would be taken into consideration in your discussion, and would like to express our willingness to continuously take a positive involvement in the future legislative process for this matter.

Yours sincerely,

Takashi Sugiyama
Chairman, Environmental Committee
Japan Business Council in Europe

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[2] For details, including a list of its member companies, please refer to the following website: http://www.jbce.org

Analytical methods, limits and costs for detection of hazardous substances in EEE

According to the forthcoming RoHS directive lead, mercury, cadmium, hexavalent chromium, PBB and PBDE should not be contained in electric and electronic equipment. JBCE member companies, most of them as producers of EEE, have been preparing new designs of their products of which each part contains no such substances. However, it is almost impossible to avoid existence of these substances as an impurity (so called "unintended use"). Therefore, we have to check each part of the products. As even a small connection cable sometimes consists of 50 parts, the questions arise how to detect them, and which concentrations to consider as tolerable.

Analytical methods and cost for detection

For the analysis there are destructive methods and non-destructive methods. Generally speaking, the former methods are more quantitative, more sensitive, however, more time-consuming, more difficult and more expensive*) than the latter. They require a rather complicated pre-treatment of samples. You need not only skilled persons and special facilities but also strong chemicals like sulfuric acid, nitric acid and organic solvents. On the other hand, in the latter methods samples can be simply set into the sample compartment without any chemical treatment and results are obtained in 5 minutes. In the appendix of this paper we explain details of the analytical methods, detection limits and costs.

Concentration levels

The commission set the maximum concentration values of the hazardous substances in vehicles between 0.01% and 0.4 %, depending on materials (Commission decision of 27 June 2002 amending Annex II of Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles). For the detection of these concentration levels we can screen each part with the non-destructive methods. After screening, only the suspected parts should be analysed more accurately with the destructive methods. In this way unnecessary consumption of chemicals, which surely results in a negative impact on the environment, can be avoided. We strongly recommend keeping the tolerable concentration values of the four substances in EEE in the same order as in the ELV directive and those of PBB and PBDE should be decided as soon as possible for RoHS directive.

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*) According to the Table 1 in Appendix 1 an analysis of one cable consisting 50 parts (20 plastic parts) costs about 10,000,000 Yen (~ 80,000 Euro).

Appendix 1

Destructive Methods

The Table 1 lists the pre-treatment methods, equipment used, quantitation limits and prices for measurements. Please note that this is only one example in Japan.

Table 1

Substance	Methods	Pre-treatment	Equipment	Quantitation limit for 0.5 g sample	Price for analysis[4)]
Lead	EPA SW-846: Method 3050B	Decomposition with acids ↓ Filtration	ICP-AES[1)]	0.5 ppm	195Euro
Cadmium	EN 1122	Decomposition with acids ↓ Filtration	ICP-AES[1)]	0.5 ppm	+45Euro[5)]
hexavalent Chromium	Japanese Standard	Grinding ↓ Water extract	ICP-AES[1)]	1.0 ppm	195Eur
Mercury	Japanese Standard	Evaporation ↓ Adsorption	AAS[2)]	0.1 ppm	270Euro
PBB		Grinding ↓ Solvent extract ↓ Column clean up	HRGCMS[3)]	0.1 ppm	1,250Euro
PBDE		Grinding ↓ Solvent extract ↓ Column clean up	HRGCMS[3)]	0.1 ppm	1,250Euro

Euro=120Yen

1) Emission Spectrometer using an Inductively Coupled Plasma

2) Atom Absorption Spectrometer

3) High Resolution Gas Chromatography/Mass Spectrometer

4) Price for a small number (≥30) of samples

5) 45Euro is added for Cadmium when both Lead and Cadmium are measured.

Appendix 2

Non-Destructive Methods

Table 2 lists the detection limits of the 6 substances using EDX (an energy dispersive X-ray fluorescence spectrometer). The detection limit depends on the density (ρ) of the materials in which the target substances are contained. The minimum size of samples required is 1 mm diameter and 5 mm thickness. There is no definite price offer for the analysis, because almost everybody who is trained to operate the equipment can carry out the measurements. The price of one EDX is about 100,000 – 150,000 Euro. Note that this is comparable to the price of the more accurate analysis for one cable with 50 parts.

Table 2

Substance	Detection limit			Remark
	in plastics (ρ =1 – 1.5)	in glass, Al (ρ =2 – 3)	in iron, nickel (ρ =8 – 10)	
Lead	5 ppm	20 ppm	250–1000 ppm	
Cadmium	5 ppm	20 ppm	250–1000 ppm	
Mercury	5 ppm	20 ppm	250-1000 ppm	
hexavalent Chromium	8 ppm	30 ppm	400-1500ppm	detected as a total Chromium
PBB	5-50 ppm	-	-	detected as a total Bromine
PBDE	5-50 ppm	-	-	detected as a total Bromine

Attachment 2

(An excerpt from JBCE position paper dated Feb. 25, 2003)

5. Concentration levels of PBB and PBDE (RoHS directive)

In its previous paper, dated Dec. 13, 2002, JBCE strongly recommended that the maximum concentration values of lead, cadmium, hexavalent chromium and mercury in the RoHS directive should take over the values laid down in the directive on end-of life vehicles (ELV). We did not have a clear position about PBB and PBDE.

We have in the meantime noted the recent amendment, through directive 2003/11/EC, to the hazardous substances/marketing and use directive (76/769) which has imposed limits on use of pentabromodiphenyl ether and octabromodiphenyl ether. These two substances cannot be placed on the market or used as a substance or as a constituent of substances or of preparations in concentrations higher than 0.1% by mass. We assume that this limits is now to be considered the de facto concentration limit, including PBB, for use in EEE.

JBCE would like to draw your attention again that this concentration value permits the analysis by non destructive method, as stated in our previous position paper , whereby manufacturers can avoid time-consuming method and unnecessary financial burden (rather than destructive analysis.)