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ECVM comments and on the report “ROHS Annex II Dossier for Diantimony trioxide (flame retardant). Restriction proposal for substances in electrical and electronic equipment under RoHS”, version 2 of 4th December 2019

Page	Section	Paragraph/Content	Comment
16	1.3.3	“Furthermore, diantimony trioxide is added to the SIN List not only for this reason but also because <i>“reprotoxic effects have been reported”</i> ”	The SIN list should not be mentioned as a source of information in a chapter which also refer to EU regulations. It has no more credibility than any other NGO list and does not add any useful information to the information provided by EU regulations.
18	2.2	“Campine (2018) states that <i>“ATO will be present in levels between 2 and 8 % in flame retardant plastics.”</i> According to the Swedish Chemicals Agency KEMI (2015) <i>“levels up to 25% [in plastics] are also observed.”</i> ”	ECVM wishes to confirm that levels between 2 and 8 % may be present in PVC flooring and PVC cable insulation (these levels relate to the PVC part of these articles, not the entire article)
19	2.2	“As for PVC as halogen-containing polymers [...], no flame retardants need to be added.”	While for rigid PVC, indeed little or no flame-retardant synergists are needed, for flexible PVC this may be different. Indeed, the plasticisers added to soften the PVC decrease its inherent flame retardancy and in such cases, flame retardants may be added to recover the lost flame retardancy, depending on the amount and type of plasticizer present.”
20	2.3	“in PVC: 8,800 tonnes”	Please note that we neither confirm nor deny the PVC figures. We cannot comment due to lack of reliable data.
21	Question	“Specific information is requested on the concentration of ATO used in most relevant applications which are • Plastics for housings / enclosures, • Cables,	PVC is not used in E&E housing, enclosures and printing wiring boards. The only E&E application of PVC we are aware of is wires and cables. AS mentioned above, the typical amount used in PVC insulation or sheathing of cables is 2 – 8 % of the PVC polymer weight. Although medium chain chlorinated paraffins are used in some PVC cables as a secondary plasticizer and flame retardant, it is not necessarily in combination with ATO, as PVC contains enough chlorine for ATO to act as synergist.

Page	Section	Paragraph/Content	Comment
		• Printing Wiring Boards.”	
28	5.1	“A recycling takes place at least in some front running companies, however, the share of the recycling of cable insulation compared to the total amount of cable material / insulation has not been indicated by industry.	In 2018, more than 150 kt of PVC waste from cables has been recycled in the EU. See https://vinylplus.eu/documents/51/59/VinylPlus-Progress-Report-2019
31	5.4	“During shredding processes, the material is mechanically highly worked-up and dust is released. Substances like ATO may occur being bound to the airborne particles resulting from the shredding of the material.”	Exposure to dust is a hazard to be avoided in general; it is not specific to the shredding of EEE containing ATO. Occupational limits for dust exposure exist in most, if not all, EU countries. It is not clear in the following pages where these limits are taken into account in section 6.1.1.
40	7.1	“The plastic fraction containing ATO (and brominated flame retardants) is not recycled but incinerated”	The wording may be confusing. The fraction containing ATO and BFRs is possibly not recycled, but PVC containing ATO is recycled. Hence the correct wording should be “The plastic fraction containing ATO and brominated flame retardants is not recycled but incinerated. The plastic fraction containing ATO without BFRs is partly recycled”
43	8.1.1	“however, the mono-substitution of ATO where the application of the halogenated FR remains can be considered as being of lower priority compared to the possibilities for substituting ATO.”	Possible mistake. Shouldn't it be “however, the mono-substitution of ATO where the application of the halogenated FR remains can be considered as being of lower priority compared to the possibilities for substituting BFRs ”?
44	8.1.2	“[...] It can be concluded that the voluntary phase-out of ATO by these companies means the simultaneous phase-out of halogenated flame retardants. [...]”	This statement does not take into account the fact that ATO plays an important role in the flame retardancy of PVC cables, even in the absence of “halogenated flame retardants”. The statement is therefore too general.
48	8.1.3	“To conclude, the two most promising steps forward concerning the substitution of ATO are the co-substitution of the	As far as cable insulation/sheathing is concerned, PVC can theoretically be replaced by other polymers, but these alternative polymers would require even higher % of flame retardants, which may preclude achieving necessary properties such as flexibility.

Page	Section	Paragraph/Content	Comment
		halogenated FR with which ATO is applied as synergist, and the option of alternative technologies which basically means a substitution of the polymeric host material”	
51	8.2	Still, phasing out halogenated flame retardants including ATO as a synergist by using inherent inflammable polymers could be a step forward as far as a conclusion on the polymers’ suitability is possible.	Polymers have different degrees of inherent resistance to fire, the most rigid ones typically having higher resistance than flexible ones. However, flexibility is a must for wires of electrical appliances, hence rigid polymers would not work. The least combustible polymers are those containing halogens (fluorine or chlorine). Even so, they may require flame retardants in some applications. All non-halogenated polymers require flame retardants. It is therefore doubtful that polymer substitution is a solution in all E&E applications.
52	8.4	“the analysis of the various information sources indicates two most promising steps forward: (...) the option of alternative technologies which means basically a substitution of the polymeric host material.	“promising” seems over-optimistic, see comment above
53-54	9.2-9.4	“Impacts on the Industry [...]”	These paragraphs are qualitative and hence rather subjective. They are far from a proper socio-economic analysis. We understand that lack of data may prevent a quantitative analysis but, if this is the case, the situation should be acknowledged and no conclusions should be drawn.
55	9.5	“On the other hand, the plastics sorted out based on the presence of ATO for the most part are incinerated or declared as hazardous waste and landfilled at appropriate sites”	This is not the case for PVC cable waste, the great majority of which is recycled. See comment on page 28.