Zza Key Technologies Ltd צקי טכנולוגיות בע"מ

Hazardous Waste and Toxics Reduction Program
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Submitted via email at: SaferProductsWA@ecy.wa.gov.

RE: Draft Regulatory Determinations Report to the Legislature: Safer Products for Washington - Implementation Phase 3 (November 2021, Publication 21-04-047)

I am writing to provide feedback on the draft regulatory determinations proposed under the Safer Products for Washington related to the regulation of electronics and electrical equipment.

Zzakey Technologies Ltd., is a R&D support company involved in the polymer and fiber industries. We are concerned about the scope of the chemistries and the breadth of the product categories proposed for regulation.

Flame retardants have been in polymers and synthetic and natural fiber-based products for a long time. This is due to the inherently flammable nature of plastic originating from petroleum and natural fibers based on cellulose.

Various regulatory requirements exist for the use of chemicals. Since flame retardants are amongst the most used additives to functional plastics, many of these requirements also apply to textile applications which are often prevalent in the home or commercial settings. REACh is one of these regulations and is mandatory for all chemicals imported and manufactured in the EU. Therefore, the REACh-methodology can be used as a model for the assessment of development products. REACh characterizes a product both from its hazard and risk. Risk is defined as the probability that exposure to a hazard will lead to a negative effect, or more simply, Risk = Hazard x Exposure. Thus, a hazard poses no risk if there is not exposure to that hazard. Other systems like the EPA's DfE are based on hazard criteria and demand the "best in class". Others focus on extractable heavy metals (Oeko-tex 100), volatiles (TA Luft) or exclude halogenated FRs from their approvals (Eco-labels mattresses).

One of the big concerns about manmade chemicals is that they get into the environment in an uncontrolled way, (bio)accumulate and, thus present a potential risk. The question is how to prevent chemicals, namely those used for plastic treatment, getting into the environment. The main strategy is using them in a responsible way during both production and application. This aspect is covered by the producers and users of brominated flame retardants by the VECAP®7 program, operated under the European Flame Retardants association EFRA.

Newer FR products are mostly polymeric or reactive. Polymers are, by definition, large molecules. They are not usually water soluble and are too large to penetrate cell membranes. Thus, they are recognized as not toxic. Due to their larger hydrodynamic radius, they don't leach out of their matrix. Additionally, EPA and REACh grant polymers a special status. Reactive molecules are a different approach to safety. They become bound in a stable way to the substrate and provide a permanent and durable treatment. Furthermore, FRs which do not hydrolyse or break down in use are preferred. New flame retardants provide a robust, non-leachable treatment. Substances rated as PBT (persistent, bioaccumulating, toxic),

vPvB (very persistent, very bioaccumulating) or CMR (carcinogenic, mutagenic, reprotoxic) are generally excluded from any development work. Finally, new development allow for reduction of Antimony Trioxide use in brominated flame retardant based formulations and preferably lead to a reduced FR loading.

As the Department of Ecology finalizes its recommendations, we strongly urge the State to consider the above. A categorical ban is neither scientific nor based on proper risk assessment practice. Since the consequence is human lives, it would be prudent not to forcefully remove a safeguard with a proven track record in mitigating disaster. Though there is some evidence of environmental risk from older FRs, some of it based on obsolete technology, marketing literature or non-authoritative sources. On the other hand, the fact that 10 lives a day are lost in US fires (FEMA report, 2019) is irrefutable.

We would be happy to provide additional information and details specific to these issues and our business and products.

Sincerely,

Dr. Itzhak Shalev CEO
ZzaKey Technologies Ltd.