

New study of PVC blood bags

A new report shows that blood bags made of DEHP-plasticised PVC pose a significant risk to human health, due to both DEHP and PVC.

“This is a life-cycle assessment, LCA, which was commissioned by an EU Life+ project, PVCfreeBloodBag. The EU project aims to phase out the current blood bags in Europe and replace them with PVC-free alternatives,” says Raul Carlson, PhD, eco2win AB, the report’s author.

A life cycle assessment is a method of acquiring an overview of the environmental impact of a product, function or service. The purpose of this study is to demonstrate the impact on health and the environment that is caused by a PVC/DEHP blood bag’s entire life-cycle.

“My study compares the impact of a blood bag made of PVC (polyvinylchloride) and DEHP(di (2-ethylhexyl) phthalate) with that of a fictional blood bag made of HDPE (high density polyethylene). The LCA shows that today’s PVC bag has a significantly higher potential for harming human health than a polyethylene bag, as regards both DEHP and PVC.

“Another interesting result is that the controlled combustion of PVC/DEHP, actually cleaning the smoke, increases both the use of resources and the contribution to climate change in comparison to a polyethylene bag.”

At present there are no PVC-free blood bags for red blood cells on the market. One aim of the project is to demonstrate that it is possible to produce a PVC-free bag that fulfils a requirements specification, including CE labelling. Four European companies, Melitek A/S, Wipak Oy, Totax Plastics A/S and Haemotronic SpA, who are also project beneficiaries, will work together produce a PVC-free blood bag. Karolinska University Hospital, Sweden, is responsible for evaluating the bag.

To make PVC, polyvinylchloride, soft plasticisers of up to 50% are used. The plasticiser in blood bags is the phthalate DEHP, di(2-ethylhexyl)phthalate, which is classified as a reproductive disruptor and is also forbidden in toys. The substance has been systematically phased out of healthcare and healthcare products, including medical devices, though a blood bag is one product that is still made from PVC and DEHP.

“I am looking forward to the life-cycle assessment of a future PVC-free blood bag,” says Lena Stigh, project manager for the EU Life+ project, PVCfreeBloodBag.

Do you want to know more?

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The report is available on the project website:

www.pvcfreebloodbag.eu

Attached pictures: Front page of the report (pdf, jpg)