

Towards Greater Sustainability in Healthcare The Journey so Far

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ALLIANCE

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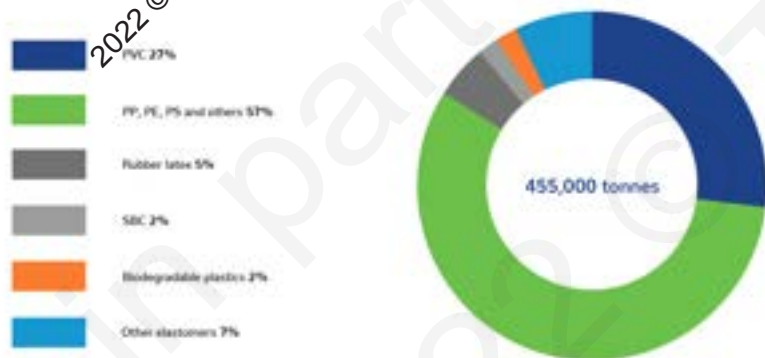


PVC in healthcare – the basics

Today PVC is the most used polymer in healthcare with a market share of almost 30%

PVC is expected to maintain its leading role in healthcare in the years to come

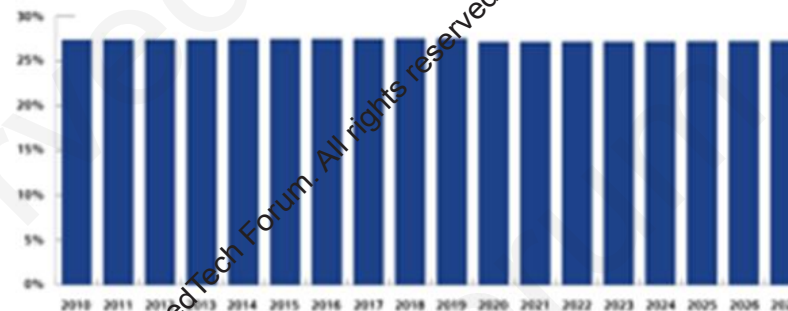
Medical devices in Europe – PVC vs. other polymers



Note: Shares calculated based on volumes of unfilled polymers

Source: Europe Medical Polymer Market Report, Global Market Insights, 2021

Medical devices in Europe – PVC volume share 2010-2027



Source: Europe Medical Polymer Market Report, Global Market Insights, 2021

PVC in health care – the basics

PVC is used to make a wide range of single use of medical applications (tubing, bags, oxygen masks, IV sets, gloves, blister packaging..)

And long-lived products used in healthcare settings (floor and wall covering, mattress covers, training manikins..)

PVC is a very cost-effective polymer



PVC technical properties

- ✓ **Transparency**
- ✓ **Excellent strength and toughness**
- ✓ **High biocompatibility**
- ✓ **Easy to process**
- ✓ **Easy to sterilize**
- ✓ **Excellent chemical stability**
- ✓ **Anti-kinking properties in tubing**
- ✓ **PVC medical applications can be both soft and rigid**



PVC and recyclability

For many years, the recycling of medical devices has been a no go due to fear of contamination. At their end-of-life, medical devices made with PVC were treated as contaminated waste -> incineration/landfill.

A better sorting of the infectious and residual waste by hospitals has open opportunities for recycling residual waste without any risk for staff, recyclers, converters and end users



PVC and recyclability

The ongoing substitution of DEHP makes PVC medical devices ideal for mechanical recycling into REACH compliant products

Medical PVC waste leads to high quality recyclates produced with reduced environmental impact vs. virgin PVC. Recyclates can be recycled in a wide range of value products used in healthcare settings.

By recycling the PVC medical waste, the hospitals gain significant CO₂ and cost savings



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Recycling schemes for medical PVC

The recycling of non-infectious PVC medical disposables (bags, masks, tubing..) has been successfully implemented since 2008 by hundreds of hospitals in 8 countries



Since January 2022, a new scheme called VinylPlus® Med is rolled out in Belgium to collect non-DEHP PVC consumables and recycle them locally into long-lived products used in healthcare settings (floor/wall coverings, clogs..)



Recycling schemes for medical PVC

Waste collected in 4 Brussels hospitals; 29 others on a waiting list.

Value chain collaboration between



dismantle non-PVC parts, process waste, select healthcare applications, secure quality and traceability control



implement optimal reverse logistics, integrate collection in existing waste management procedures, supply waste containers and storage space



coordinate scheme, supply waste collection and information material, train and coach healthcare personnel, communicate on and finance the project



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VinylPlus® Med: challenges

Many devices include non-PVC parts. Due to staffing challenges in hospitals, disassembling of these parts is done by the recycler.

Some devices include non-PVC layers or parts that cannot be disassembled. Such devices cannot be recycled.

Some devices include DEHP, a substance of concern that make the recyclates unsellable in Europe.

Absent or incomplete labelling. Recyclers sometimes need to use a scanner to identify DEHP-containing PVC.

