

**Challenge us  
with your  
PVC scraps!**



**vinylrecycling  
.com**



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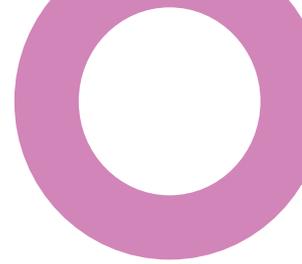
# All you need to know

## A family (& friends) business

What defines us most is that we are a family business. We cooperate intensively and have short communication lines, we like to offer the same communication to our partners. Speed, transparency, solution-oriented is what we stand for!

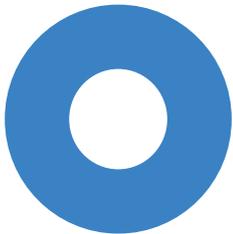
Ivo Besselsen, the founder, started trading PVC production scrap to Taiwan in 1973, where it went straight back into production as a raw material. This was a great success and the trade grew into several international trade routes. A lot has happened over the years. Particularly around the perception of PVC as a material. Greenpeace has been campaigning against what they see as very harmful PVC since the 1990s. The ferocity of this campaign still leaves its mark today.





### **From BessTrade to VinylRecycling.com**

We recently changed our name from BessTrade to VinylRecycling, as it says it all! Through the years we gained a very strong expertise in PVC recycling and every type of waste is seen as a challenge, and with continuous dedication and innovation we search for pragmatic solutions to process or reuse this versatile material. We act global and partner up with production plants all over the world to find solutions for their production scrap, or to find 'recycled' alternatives for their compounds and raw materials. Whether it is rigid, soft, plastisol or powder; our goal to find a solution for all types!





## Our mission is twofold

First, we want to be Europe's most innovative PVC recycler! Created out of necessity, because every day large quantities of PVC end up in landfills, or worse, the incinerator.

The second part, inherent to innovation, is sharing the knowledge we gain along the way. We want as many people as possible to know about PVC; its applications, versatility and how easily it can be recycled into raw material. Which can then be used to manufacture a new product.

We are constantly confronted with the prejudices around PVC. If you go online, there are many stories on harmful plasticisers and the highly toxic chlorine gas released when it is burnt. It is not surprising that most people believe and repeat what has been dictated in the media for so long. We understand that it is boring to delve into polymer science and read all the REACH and PubMed documents that really give you the much needed insights.

The truth about plasticizers is that some are indeed dangerous to human health, but not all of them! There are thousands of different types, each of them with specific chemical characteristics. Only a handful of them have been assessed, researched and are now subject to special regulation by REACH.



Those are under strict scrutiny, and cannot be used by European manufacturers, as REACH only applies to European countries. There is one exception to the rule, DEHP can still be used in PVC foil for blood bags, as it provides extra protection against hemolysis. It has certain characteristics that the blood can be preserved for 40 days instead of 24 hours. Bittersweet, carnigorous on one side, lifesaving on the other!

Regarding chlorine gases, they are only released during combustion, when the chain breaks. This is why it is so important not to incinerate PVC, but to recycle and reuse it continuously!

### **We play by the book, but we do play!**

Everything we do is in line with European legislation. We work closely with IL&T and OVAM to stay informed and know what's happening in the market. However, we strive for innovation, and this means we push the envelope where we can. We challenge ourselves and the industry to be better.

We are member of Recovinyl, Plastics Recyclers and the Dutch NRK.



# Scrap to offer?

As we have been doing this for a lot of years, we have found a solution for most types of PVC scrap. However, the industry is moving fast so we are frequently challenged to come up with new ways for new types of scraps.

PVC comes in many shapes and sizes, and we have a recycling line for most of them. We process rigid and soft post-production scrap into regrinds, granules, or powders. Preferably the customer who offered their scrap, takes it back again as feed stock. We aim for circularity, luckily some of our clients too, but 2050 seems like a lifetime away for many of us.

We have a screening facility where we screen, clean and blend floor sweeps into new compounds and we process recuperated plastisol, which are released during cleaning, or deployment of a new run, during extrusion. We can vacuum out the presence of white spirit, then blend the recovered plastisol with either plasticizer or PVC powder, giving it the right viscosity for immediate production.





## Get in touch

We'll discuss the current process you have in place, the origin, annual tonnage, the way it's packed and type of process that needs to be implemented to collect and/or transport your material to our plant. We would love to go circular and return your newfound raw material. If you are not ready for that, we will offer it as raw material to one of our partners. We guarantee 100% recycling, compliant with European regulations.

# The facilities

## Plant 1 | Binnenhavenweg 31

This 17,000-square-meters plant houses our offices and in- and outdoor factory spaces. We have all our materials coming in at this location, and a large part of the processing takes place here as well.

- Sales office
- Inbound of the scrap
- Inspection & screening
- Grinding, shredding & micronizing
- Laboratory
- Plastisol kitchen



## Plant 2 | Staalstraat 2

We recently opened this plant as we are expanding rapidly. A great part of this 9,000-square-meters hall is reserved for warehousing. Still, it leaves us enough space to install our innovative recycling processes.

- Outbound raw materials
- Extrusion & Micronizing
- The flooring project
- The bloody serious project

## The Laboratory

Our Lab is located at the Binnenhavenweg. Here we have the space and the tools to thoroughly investigate our material with the help of:

- Viscosity testing | To alter the plastisol for our 'plastisol kitchen' to improve and offer our clients the right type of pasta
- CaCo<sub>3</sub> / Filler testing | a test to calculate the percentage of filler
- XRF testing | We test our materials on the presence of metals
- Calendering testing | To create a sheet to optically inspect the material on the presence of contamination. We also use the sheet to test on shore hardness and density.

We apply a comprehensive inspection when scrap arrives, and we want to be able to guarantee the quality of the material we process and offer to our clients.





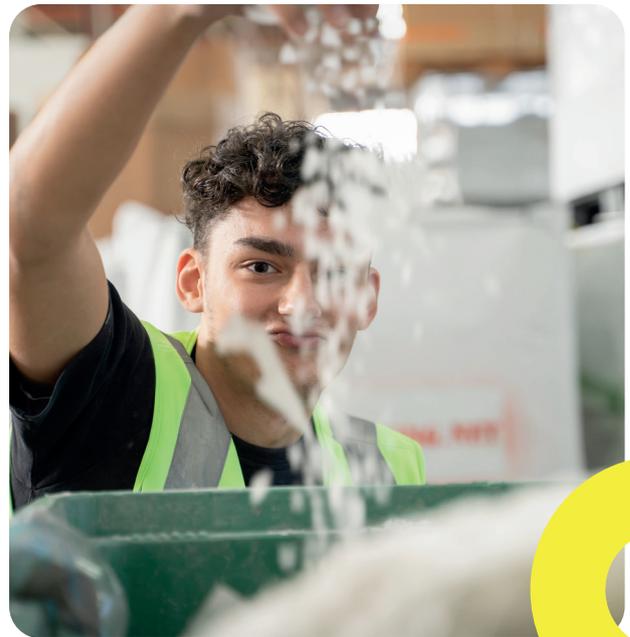
# PVC from all walks of life

BP01	Rigid PVC	Sheet from vacuum forming in regrinds   transparent
BP02	Rigid PVC	Sheet from vacuum forming   white
BP03	Rigid PVC	Sheet from vacuum forming   mixed color
BP05	Soft PVC	Medical production scraps (tubing, sheets, lumps, floor sweeps)
BP06	Soft PVC	Transparent   shore 75-85
BP07	Soft PVC	Mixed color   shore 65 -85
BP08	Soft PVC	Sorted PVC   sorted in one color
BP09	Rigid PVC	Sheet from vacuum forming in bales   transparent
BP10	PVC Powder	Wet resin (20 to 30% H2O)
BP11	Soft PVC	Vinyl Wallpaper
BP12	PVC Powder	PVC powder (E- & S- PVC)   available in white and mixed colors
BP13-1	Soft PVC	Cable production scrap (clean 100% PVC )  mixed colors
BP14	Soft PVC	Doormat production scrap   black
BP15	Rigid PVC	Pipe- and profile production scraps
BP16	Soft PVC	Flooring pre- and post-consumer scraps
BP17	Semi Rigid PVC	Production scraps from Deco ( furniture skin)
BP18	Soft PVC	PVC waste from gasket profiles   white
BP19	Rigid PVC	Sheet pressed in bales   mixed colors
BP20	Soft PVC	Foam from car industry (Artificial leather)   mixed colors
BP21	Rigid PVC	Thin rigid sheet (cooling tower)



BP22	Soft PVC	Lumps from production, maximum burning of 5%
BP23	Soft PVC	Medical gloves virgin production waste
BP24	Rigid PVC	Thin rigid sheet
BP25	Soft PVC	Foam from car industry with small percentage PU (Artificial leather)
BP26	PVC Powder	Sawdust from pipes/ profiles   mixed colors
BP27	PVC Paste	Liquid paste   White or mixed colors
BP28	Soft PVC	Car industry production scrap with 30% ABS contamination
BP29	Soft PVC	Rolls with adhesive backing from tape production
BP30	Soft PVC	Tarpaulin for roofing of billboard   mixed colors
BP31	Soft PVC	Tape/ Sticker production scraps   mixed colors
BP32	Rigid PVC	PVC bottle tops with PE   mixed colors
BP33	Rigid PVC	PVC met PE backing
BP34	Plasticizer	Liquid condensed plasticizer from production
BP35	Rigid PVC	IC tubes   transparent
BP36	Rigid PVC	Credit Card scrap   mixed colors
BP37	Rigid PVC	PVC Sheet with aluminium vacuum forming   transparent
BP38	Rigid PVC	PVC clear bottles post consumer   transparent
BP39	Rigid PVC	Vinyl records recycling   black
BP40	Rigid PVC	Fish worms production scrap   mixed colors







## The Benefits

**1** All about the money! You no longer need to have your PVC waste collected as commercial waste. This is quite costly in The Netherlands! MicroCycle will save you money and might even generate some income.

**2** Let's go green! In addition, you are contributing to a good environment! What GreenDeal goal have you set for your organization? You will deal directly with a specialized PVC converter. This means transparency! You even receive a Recycling Certificate!



# MicroCycle

## Creating impact on a smaller scale!

MicroCycle is a circular concept developed especially for smaller Dutch businesses. It is a system for collecting smaller quantities of post-industrial PVC.

Throughout the years, we have gained expertise in the processing of post-industrial PVC waste and we know that each type of PVC poses different challenges. With relentless dedication and innovation, we look for the best solution to recycle or reuse the different types of material.

## Is this for your organization?

What is currently happening with your PVC waste? Well, MicroCycle makes it easy for you! We place a minimum of two MicroBins at your location, you indicate when they are almost full and then we collect them and immediately exchange them for empty MicroBins.

Your material is weighed and checked at our factory, after which you receive a refund. The PVC is then recycled into raw material to be used in a new production process. From as little as 2,000 kg per year, which equals 166 kg per month, you can start with us!

# The flooring project



Three projects that revolve around vinyl flooring. All three aligned with our mission to find ways to save vinyl from landfill or incineration, and creating awareness whilst doing it! All projects are the result of partnership with like-minded people throughout the complete chain.

## **1. Recycling vinyl sheet with felt backing**

Since our collaboration with a number of European flooring manufacturers, we have been dabbling with this material. Since 2018, we have been working with our machine builder to turn the idea into a working machine, a process that can separate the PVC from the felt.



After several years of testing and fine-tuning, the line is currently being installed in Lelystad. One of our customers, believed in this project and decided to commit, via an investment, to secure that their vinyl with felt backing scrap will be recycled. However this line can be used to all flooring companies that produce this particular type of scrap.

## **2. The recycling partner for Cotap's VloerRetour**

Cotap is a distributor in the Netherlands that really wanted to create an impact. We are their continuous processing partner, and had the pleasure of

advising them in setting up this project. We process their LVT, Dryback and Cushing floors into new raw materials.

VloerRetour is a great success, with more and more members joining. Through this initiative, Cotap has helped facilitate an alternative to landfill! We process their LVT, Dryback and Cushing floors into new raw materials.

### 3. The End of Life project by ERFMI

We are in the process to collect a legitimate sample of 'end of life flooring' on behalf of ERFMI, the European Resilient Flooring Manufacturers Institute. The vinyl floors that were installed as from the early nineties are coming out, to be replaced with a new better version.

What can we do with the old vinyls? We are in the process of collecting and investigating this scrap. The legislation around the usage of metals and plasticizers have changed over the years. What is the quality of the old vinyl, can we use it as a source, or do we need to leave it at landfill?

We will share the outcome at the AMI's Polymers in Flooring event that will return for its sixth edition on 16-17 May 2023, at the Hotel Bristol Berlin in Berlin, Germany.



# The Bloody Serious project

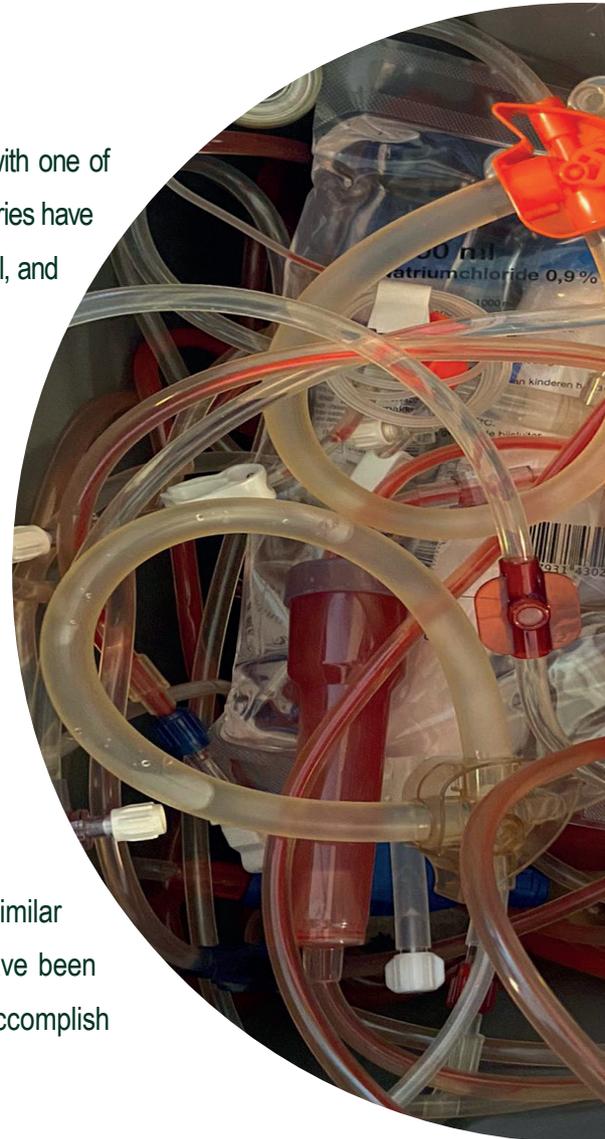
## **Time for change!**

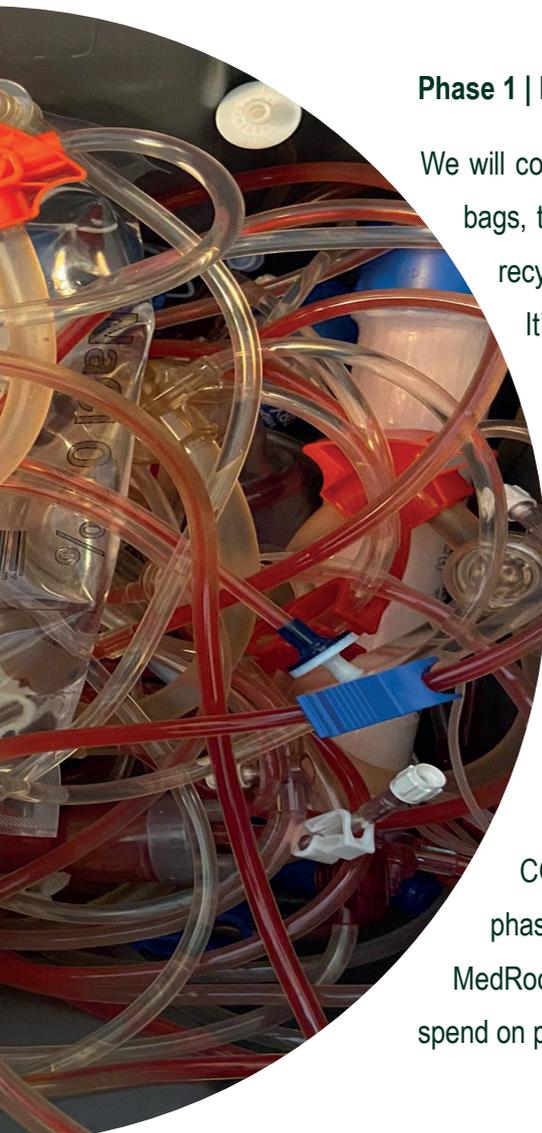
This initiative is not new, Australia introduced this project in 2013, together with one of the biggest producers of medical disposables, Baxter. Meanwhile, more countries have launched a similar project. We talked to them about the results, what went well, and more importantly what could have been done better.

The idea became a reality after Dutch legislation was amended to give preference to recycling over incineration. This means for non infectious hospital waste (Euralcode 180104 & 180203) as well as for Infectious hospital waste (special hospital waste using Euralcode 180103. Decontamination of any infection needs to take place before recycling) we will offer recycling. However, not all at once, Rome was not built in one day!

## **Synergy through partnership**

Over the last year we have been in contact with partners who have a similar mindset. People and organizations that want to change the way we have been processing our medical waste the last decades. We know that we can accomplish more with partnership.





### **Phase 1 | Non-infectious PVC material**

We will commence with recycling of non infectious PVC disposables like IV- and urine bags, tubing, dialyse systems, etc. We have the proper tools, system and permit to recycle this waste. Please be aware, this systems demand a different approach.

It's not a easy plug-and-play. Working closely with purchasing and logistics is a must. All items need to be checked on polymer and plasticizer level. The internal logistics are also examined, what is the best way to collect? All material will be collected in PVC waste bags, as the whole lot enters the recycling system.

### **Phase 2 | polymer screening & ecosteryl**

Even though Infectious waste represents only 25% of healthcare waste, it's responsible for 75% of the costs. Whilst GreenTeams want to work on their CO2 emissions objectives, the board is looking for ways to decrease costs. In phase 2 we can offer hospitals to have all their plastic disposables recycled in one MedRoom. No more separation of materials needed, this means more time can be spend on patients.







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