



## Ultrasint® PA11 - Virtucycle® Take Back Program with our partner Arkema

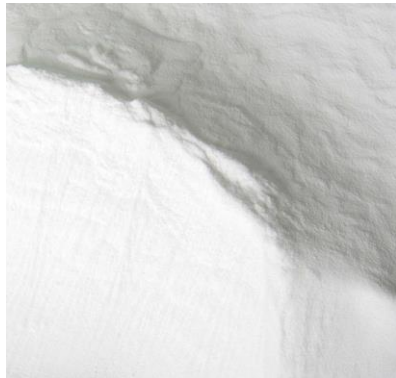


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# Virtucycle® program for 3D industry

- **Virtucycle® program** can help the 3D printing industry to recycle used polyamides powders and printed parts instead of costly and environmentally-unfriendly landfilling or burning



- **Virtucycle® program** is about reengineering and recompounding high performance long-chain polyamides at the [Arkema Agiplast plant in Italy](#) for example in pellets for injection molding applications like automotive, sports, consumer market, etc

# Key requirements to join Virtucycle<sup>®</sup> program for 3D

These 4 items can be collected, 4 categories in total:

**PA11 used powders (black and white) & PA11 printed parts (black and white)**

- **Materials that cannot be taken back:** powder & parts filled with glass beads, glass fibers, carbon fibers, fire retardant additives, glitter, high inorganical residual content (such as TiO<sub>2</sub>, pigments, mica...)
- All materials should be **clean** and **dry**
- There should be **no cross-contamination** with other materials
- In case of non-conformity of material received vs. initial sample:
  - Discount on the price if still usable
  - OR Destruction paid by the supplier
  - OR the supplier takes back the material at its own expenses

**Minimum quantity per collection (per category of material):**  
**1T for USA / 500Kg for Europe**

*Price offered will depend on category and quantity of collection*

# How to get started

Contact [virtucycle3d@arkema.com](mailto:virtucycle3d@arkema.com)

## General info needed

Address of the collection site

Quantities already in stock + forecasts per year

Can be recycled: by-products for sure, and waste case by case ([See next slide](#))

## Sample(s) validation

500g-1kg per type of powder  
3-4 pieces if big printed parts, 20 pieces if small ones

Shipping address:  
AGIPLAST ITALIA SRL, Oriana Pola,  
Via Leonardo da Vinci, 40, 26011  
Casalbuttano CR, Italy

NB: An additional industrial trial might be needed before final technical validation

## Packaging validation

Please separate all type of streams in packaging (powders/parts, PA11)

Preferred packaging = octabins with internal PE bag for powders

Otherwise please send picture for validation



*We can recycle powders as by-products only, and parts as by-products or waste case by case*

# Byproduct or Waste?

Definitions (further guidance can be provided)

- **By-product:** substance or object, resulting from a production process, the primary aim of which is not the production of that item (e.g. residue/offcuts from processes produced involuntarily during the production cycle); these products can be used directly in other production cycles, without any further processing other than normal industrial practice, as stated in Article 5 of the European Waste Framework Directive No. 2008/98/EC.
- **Waste:** any substance or object which the holder discards or intends or is required to discard, as stated in Article 3 of the European Waste Framework Directive No. 2008/98/EC (including residue/process offcuts/defective products that are unusable in their current state and are destined for disposal or recovery authorized process)

*Please choose in which category are the powders and/or the parts you wish to recycle*

 - **BASF**

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