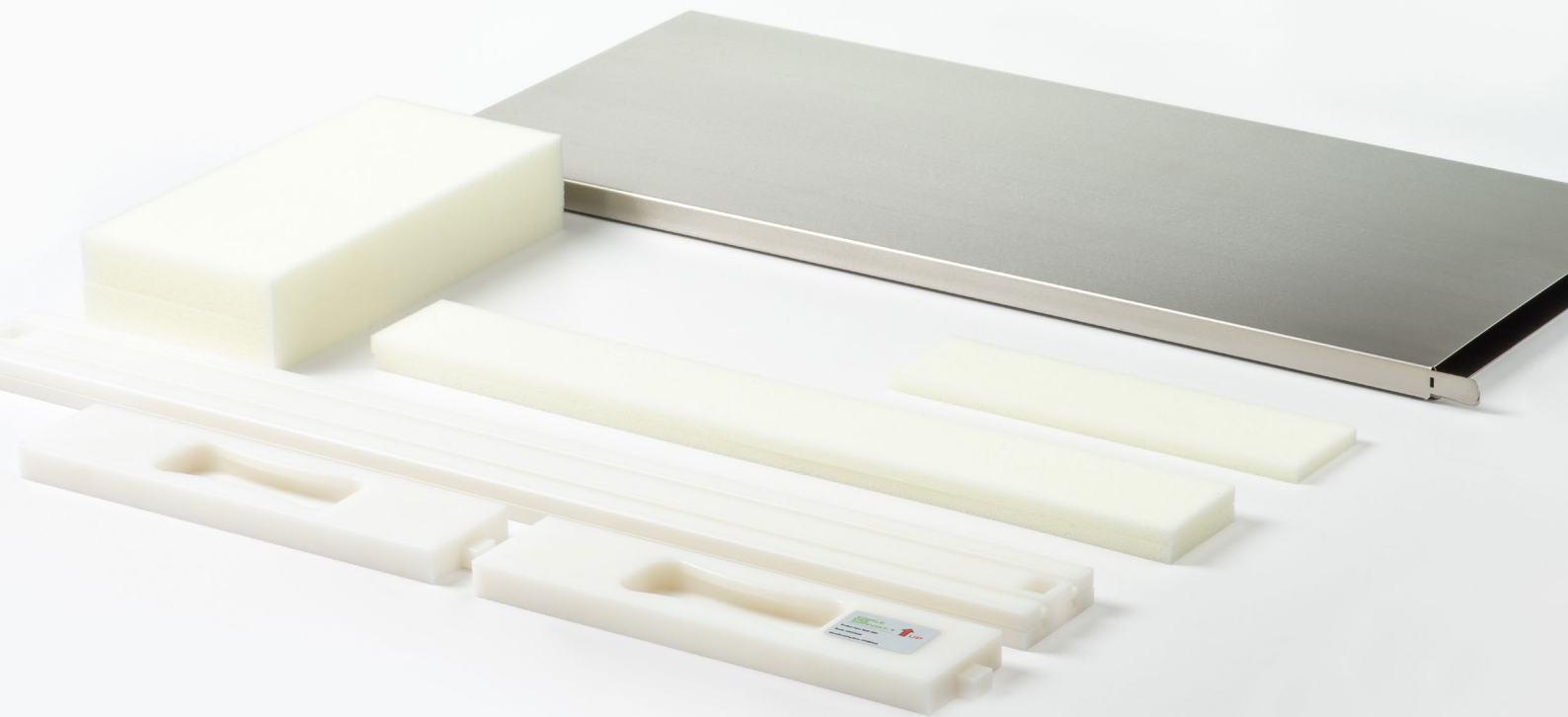


**SINGLE  
USE  
SUPPORT.** ♣

PIONEERING BIOPHARMA

# RECYCLING GUIDE

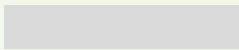
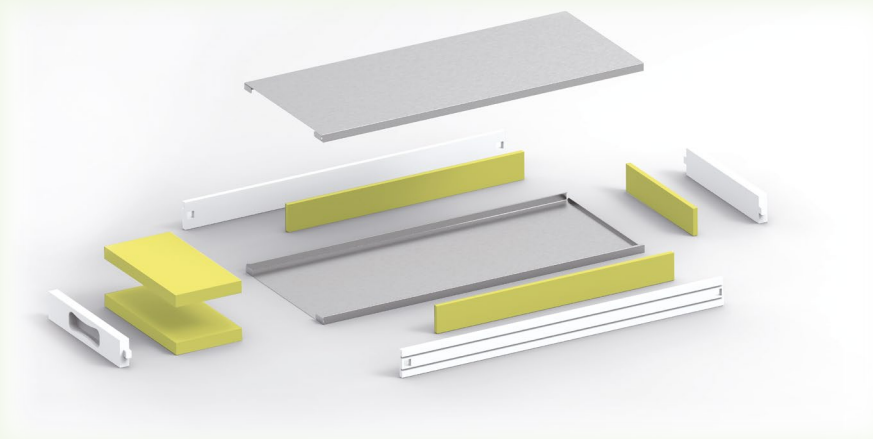
**RoSS<sup>®</sup> shell**





# How to recycle RoSS® shells

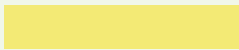
This guide provides instructions on how to responsibly recycle the components of RoSS® shells. Each material is dealt with separately, with details on recyclability, the recycling process, and recommendations for disposal.



**Stainless steel 1.4301:** Recyclable: all materials used are unpainted, uncoated, uncolored, and free from contamination



**PE-HMW 500/100 (HDPE):** Recyclable: all materials used are unpainted, uncoated, and uncolored/natural white. Polyethylene (PE) is ideal for recycling as its polymer chains remain intact during remelting, resulting in only slight deterioration of its mechanical properties.



**3D foam, viscoelastic polyurethane V 5020:** Must be disposed of or incinerated. It only contributes approximately 5 % of the RoSS® shell's total CO<sub>2</sub> footprint

## 1. Stainless-steel lids (1.4301, ♻️ 40 FE)



**Recyclability:** Fully recyclable

**How to recycle:**

- Separate the lid from the other components ([see RoSS® shell instruction for use](#))
- Dispose of the components at your facility's designated waste collection point for stainless steel components
  - If no on-site collection points are available, take the components to a scrap metal yard, curbside recycling (if accepted), or a buy-back center

**Recycling process** (may vary by local recycling center):

- Separated using magnets, crushed into bales, and melted in a steel mill
- Reused indefinitely with no loss in quality

**Environmental impact<sup>2</sup>:**

- Using recycled stainless steel can result in CO<sub>2</sub> savings of up to 6.7 tonnes per tonne of stainless steel blend





## 2. PE panels (PE-HMW 500/100 or HDPE, ♻️ 02 HDPE)



**Recyclability:** Widely recyclable

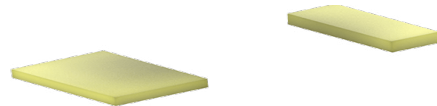
### How to recycle:

- Remove any labels or adhesives ([see RoSS® shell instruction for use](#))
- Dispose of the components at your facility's designated waste collection point for plastic materials

### Recycling process<sup>3</sup>:

- *Collection and sorting:* Rigid HDPE waste is collected and sorted by polymer type and color
- *Shredding:* Sorted HDPE is shredded into flakes
- *Washing and drying:* Flakes are thoroughly cleaned to remove contaminants
- *Melting and pelletizing:* Cleaned flakes are melted and extruded into pellets
- *Reuse:* Recycled pellets are used to manufacture new products such as piping bins, plastic lumber, or packaging trays

## 3. 3D foam (viscoelastic polyurethane V 5020, ♻️ 07 other)



**Recyclability:** Limited and specialized

### How to recycle:

- Remove the foam from the RoSS® shell ([see RoSS® shell instruction for use](#))
- Dispose of the components at your facility's designated waste collection point for plastic materials

### Recycling process<sup>3</sup>:

- *Mechanical recycling:* Foam is shredded into flakes and reused in products such as carpet underlay, insulation materials, or soundproofing panels
- *Chemical recycling:* Advanced methods such as glycolysis are used to break down polyurethane into base chemicals (energy-intensive, limited availability)
- *Energy recovery:* Incineration in a waste-to-energy plant





## Proportion of RoSS® shells that is recyclable

### Using the example of a RoSS® shell 1041 (10 L bag):

- 95 % is comprised of fully recyclable materials
  - Stainless steel and PE panels are 100 % recyclable
- 5 % has limited recyclability
  - The viscoelastic polyurethane foam component in its current form is only recyclable in a few locations and in large quantities

## Why not simply reuse RoSS® shells

Reuse of the RoSS® shell is not permitted due to potential risks to product integrity and process reliability. Exposure to repeated freezing, transport, and thawing cycles can cause material fatigue, reduce thermal insulation performance, and introduce contamination or compliance issues. Designed as a precision-fit, single-use protective solution, the RoSS® shell ensures consistent protection and quality only when used as intended.



For further information about sustainability at Single Use Support and our commitment to a responsible future, please visit: [www.susupport.com/pages/sustainability](https://www.susupport.com/pages/sustainability)

## References

1. <https://www.umweltbundesamt.de/eisen-stahl#hinweise-zum-recycling>
2. <https://www.umsicht.fraunhofer.de/en/press-media/press-releases/2023/stainless-steel-recycling-saves-greenhouse-gases.html>
3. <https://www.plasticsrecyclers.eu/wp-content/uploads/2022/10/hdpe-pp-market-in-europe.pdf>
4. <https://europur.org/wp-content/uploads/2021/10/EoL-Brochure-2021-EUROPUR.pdf>