SORTING OF PLASTICS

Create recyclable plastic fractions

STEINERT

MAGNETIC + SENSOR SORTING SOLUTIONS

CLEANING OF PLASTIC FRACTIONS AND SORTED PRODUCTS

Plastics are among the most widely used materials in the world today and are essential to our modern lifestyle. However, although they are very useful, they cause great environmental damage if they are not handled properly. In this context, sorting plastics is a vital part of the recycling process to ensure that plastics are used in a responsible manner.

To this end, STEINERT offers individual sorting concepts and solutions that cover the entire range of separation and sorting. This creates valuable products for the recycling industry and the basis for products made from secondary raw materials.

This Solution Guide shows what options are available for sorting plastics and how they can help the recycling industry to increase the efficiency of its recycling processes, lower costs and reduce environmental impact.

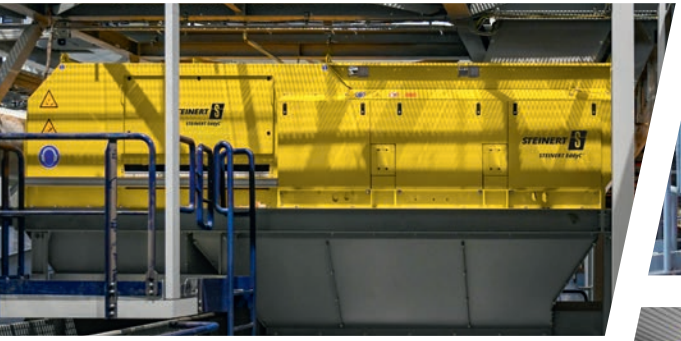
// In addition to mechanical magnetic separation, STEINERT offers unique sensor sorting systems for the recovery of clean plastic products for the secondary raw materials industry

+ Magnets for cleaning the material flow of ferrous parts
+ Non-ferrous metal separators
+ Near-infrared sorting systems with Hyper Spectral Imaging (HSI) technology for sorting plastics by type

// Special sorting products

+ Ferrous and non-ferrous metals
+ 2D plastics, such as foils
+ 3D plastics
+ Dark and black plastics by type
+ Plastic flakes

Separation of non-ferrous metals by means of STEINERT EddyC



Removal of ferrous parts using STEINERT MOR

Sorting of 2D plastics by means of UniSort Film EVO 5.0

Sorting of black plastics by type using UniSort BlackEye

Sorting of small grain sizes with UniSort Finealyse

Highest purity and quality control using UniSort Unibot

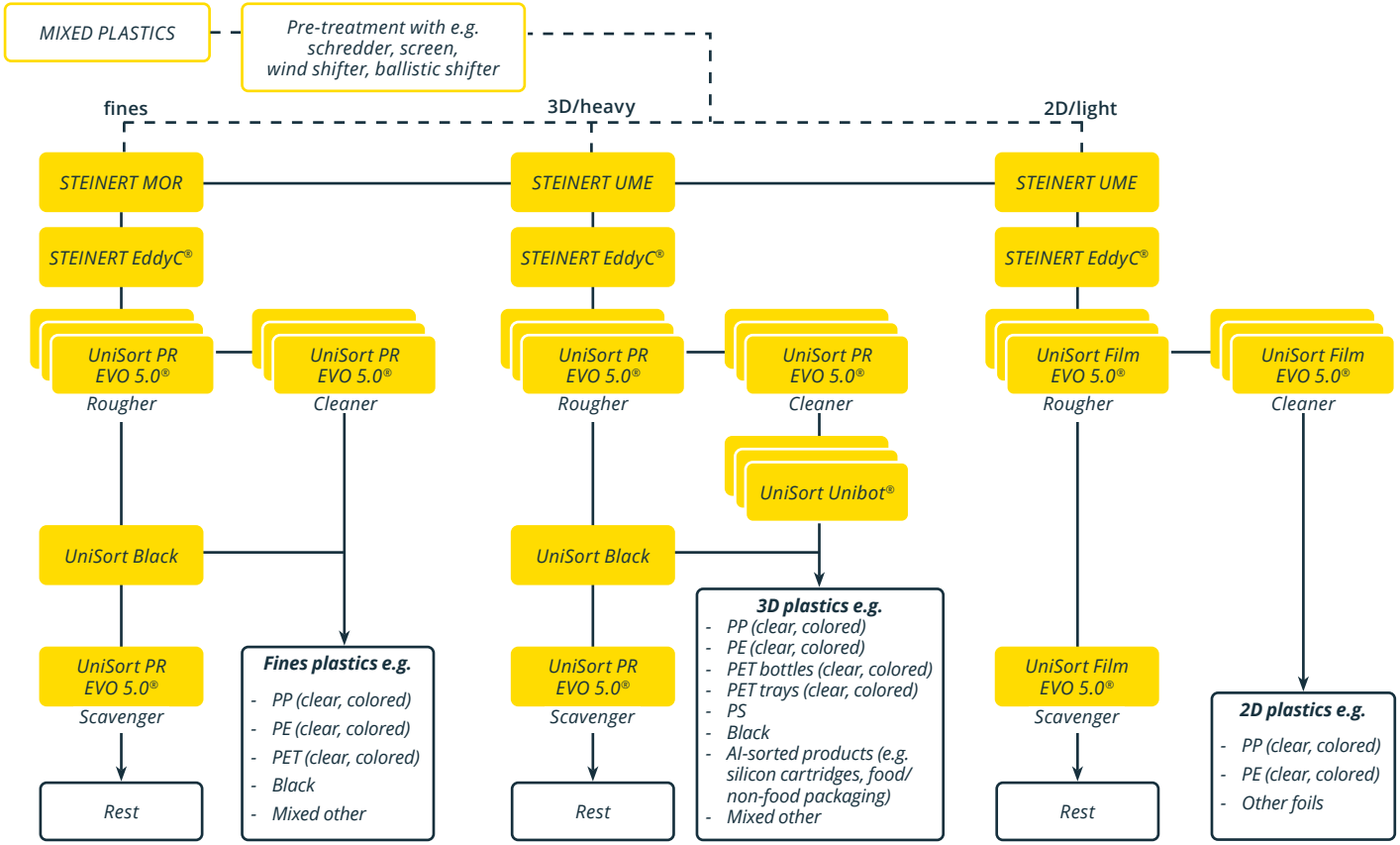
PRE-SORTING OF PLASTICS

Removal of impurities and the pre-sorting of plastics

Pre-sorted plastic fine fraction from UniSort PR EVO 5.0

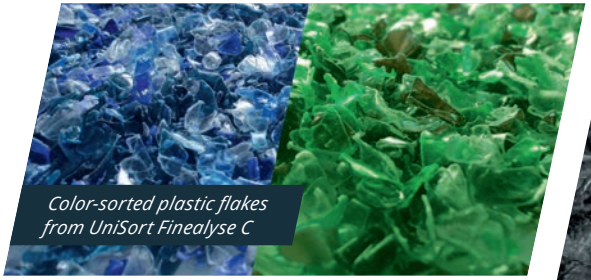
3D plastic product from UniSort PR EVO 5.0

Cleaned film fraction from UniSort Film EVO 5.0


MIXED PLASTICS
Pre-treatment with e.g. schredder, screen, wind shifter, ballistic shifter
fines
3D/heavy
2D/light
STEINERT MOR
STEINERT UME
STEINERT UME
STEINERT EddyC®
STEINERT EddyC®
STEINERT EddyC®
UniSort PR EVO 5.0®
Rougher
UniSort PR EVO 5.0®
Cleaner
UniSort PR EVO 5.0®
Rougher
UniSort PR EVO 5.0®
Cleaner
UniSort Film EVO 5.0®
Rougher
UniSort Film EVO 5.0®
Cleaner
UniSort Unibot®
UniSort Black
UniSort Black
UniSort PR EVO 5.0®
Scavenger
UniSort PR EVO 5.0®
Scavenger
UniSort Film EVO 5.0®
Scavenger
Rest
Rest
Rest
Fines plastics e.g.
- PP (clear, colored)
- PE (clear, colored)
- PET (clear, colored)
- Black
- Mixed other
3D plastics e.g.
- PP (clear, colored)
- PE (clear, colored)
- PET bottles (clear, colored)
- PET trays (clear, colored)
- PS
- Black
- AI-sorted products (e.g. silicon cartridges, food/ non-food packaging)
- Mixed other
2D plastics e.g.
- PP (clear, colored)
- PE (clear, colored)
- Other foils

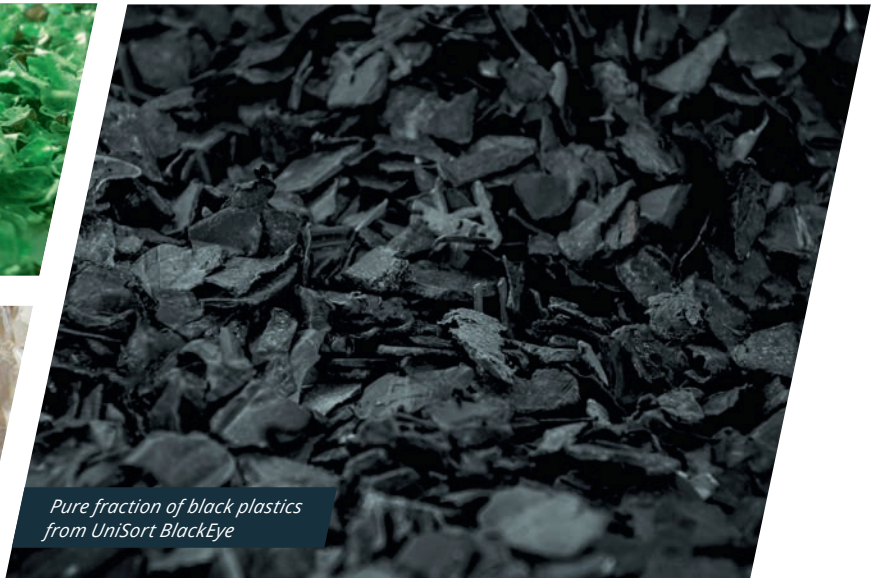
RECYCLING OF PLASTIC FLAKES

Sorting of plastics by color and type for the subsequent recycling of plastics

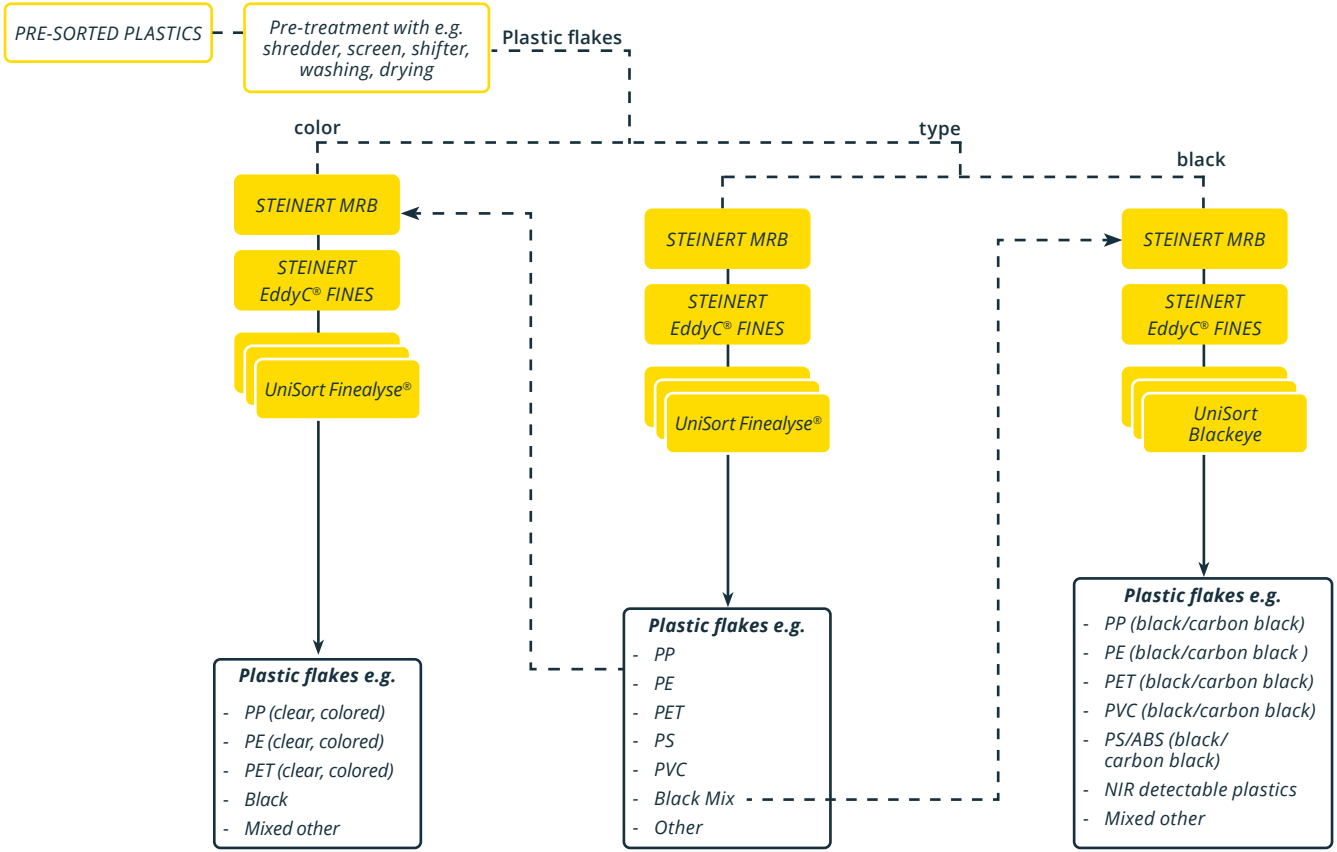


Color-sorted plastic flakes from UniSort Finealyse C

Pure PET plastic fraction from UniSort Finealyse P



Pure fraction of black plastics from UniSort BlackEye


PRE-SORTED PLASTICS
Pre-treatment with e.g. shredder, screen, shifter, washing, drying
Plastic flakes
color
type
black
STEINERT MRB
STEINERT EddyC® FINES
UniSort Finealyse®
STEINERT MRB
STEINERT EddyC® FINES
UniSort Finealyse®
STEINERT MRB
STEINERT EddyC® FINES
UniSort Blackeye
Plastic flakes e.g.
- PP (clear, colored)
- PE (clear, colored)
- PET (clear, colored)
- Black
- Mixed other
Plastic flakes e.g.
- PP
- PE
- PET
- PS
- PVC
- Black Mix
- Other
Plastic flakes e.g.
- PP (black/carbon black)
- PE (black/carbon black)
- PET (black/carbon black)
- PVC (black/carbon black)
- PS/ABS (black/ carbon black)
- NIR detectable plastics
- Mixed other

OUR PRODUCTS

for the cleaning of plastics from metals

STEINERT MOR/MGR

This magnetic technology-based sorting system includes an open or closed vibration feeder, as well as a permanent magnetic drum (STEINERT MTP) in a compact design. The drum ensures an effective recovery of small and medium size ferrous objects and compounds depending on whether it is set up as extracting or overflowing.

STEINERT MRB

The combination separator for fine grain sizes combines multiple magnetic stages in one compact unit. An extracting magnetic drum separates valuable ferrous scrap from the material stream and a magnetic pulley subsequently separates weakly magnetizable components that are contaminants in downstream processes and have a negative impact on the process quality or quality of sorted products.

STEINERT EddyC®

The eddy current separator can be used wherever non-ferrous metals can be recovered or separated. Using eddy current technology, it produces marketable non-ferrous metal mixes containing aluminum, copper, zinc or brass.

STEINERT EddyC® FINES

The STEINERT EddyC FINES was specially developed for separating particularly fine non-ferrous metals. It uses eddy current technology to produce marketable non-ferrous metal mixtures containing aluminum, copper, zinc or brass.

OUR PRODUCTS

for the sorting of plastics by type

UniSort PR EVO 5.0®

The UniSort PR EVO 5.0 is used wherever NIR technology is needed to sort recyclable material. The UniSort PR EVO 5.0 is a sorting machine that uses hyperspectral imaging (HSI) camera technology to sort various types of plastic and other materials. Its AI-based sorting programs and IoT-functionalities enable UniSort PR EVO 5.0 to sort with highest accuracy and integrate in advanced automation.

UniSort Film EVO 5.0®

Particularly light materials, such as paper and film, require a specially tailored sorting technology, which is provided by the UniSort Film EVO 5.0. Using directed air flow, it sorts with high precision and quality.

UniSort Black

The UniSort Black is used wherever NIR technology is needed to sort valuable residues and where black and dark-colored plastics are also to be detected alongside the plastics which can traditionally be detected with NIR. It is designed, in particular, for producing a black plastic product or generating plastic-free mineral fractions.

UniSort Unibot®

UniSort Unibot combines proven camera-based Near Infrared (NIR) technology with years of experience in robot booth development. High-resolution Hyper Spectral Imaging (HSI) technology combined with AI-assisted object recognition enables highest purity for use as quality control at the end of a sorting line.

OUR PRODUCTS

for the sorting of plastics of small grain sizes

UniSort Finealyse®

UniSort Finealyse is a sorting system for separating bulk materials in the fraction range from 3 to 25 mm. To detect the type of material or sort by color, a high-resolution near-infrared (NIR) camera is available as UniSort Finealyse P, or a color detection unit as UniSort Finealyse C.

UniSort BlackEye

Optimized by design for sorting bulk materials, UniSort BlackEye offers Hyper Spectral Imaging (HSI) technology in the mid-infrared (MIR) range to detect dark to black materials. This enables the sorting of most packaging and polyolefins from the automotive sector.


STEINERT
UniSort Finealyse

TEST BEFORE YOU BUY:

Test your sorting material in the Test and Development Center

Benefit from skilled engineers and a combination of cutting-edge magnets, non-ferrous metal separators and sensor sorting machines in a recycling experience space.

Realistic testing can be undertaken in the Test and Development Centre on an industrial scale to reproduce the demands, feasibility and ROI of the planned investment and create investment security on the basis of data and facts.

+ Check the feasibility, planning and layout of the system
+ Carry out sorting trials
+ Verify sorting performance in terms of quality, yield and throughput

Our application specialists from the test center and our sales team will help you solve your sorting tasks. If desired, we can directly demonstrate the potential for recovering material with STEINERT sorting technology using your own test material.

Want to try out the STEINERT test center for yourself? Simply get in touch with your personal STEINERT contact.

SUBSIDIARIES

Germany

STEINERT UniSort GmbH
Hirschfelder Ring 9
02763 Zittau/GERMANY

Phone: +49 3583 540-840
Fax: +49 3583 540-8444
sales@steinert.de
steinert.de

North America

STEINERT US Inc.
285 Shorland Drive
Walton, KY 41094/U.S.A.

Phone: +1 800 595-4014
Fax: +1 800 511-8714
sales@steinertus.com
steinertus.com

South America

STEINERT Latinoamericana Ltda.
Lincoln Diogo Viana Avenue, 510
Manoel Carlos
Pedro Leopoldo-MG 33250-490/BRAZIL

Phone: +55 31 3372-7560
Fax: +55 31 3372-6995
sales@steinert.com.br
steinert.com.br

Australia

STEINERT Australia Pty. Ltd.
14 Longstaff Rd
Bayswater VIC 3153/AUSTRALIA

Phone: +61 3 8720-0800
Fax: +61 3 8720-0888
sales@steinert.com.au
steinert.com.au

THE RESOURCE SEARCH ENGINE

STEINERT GmbH
Widdersdorfer Str. 329-331
50933 Cologne/GERMANY

Phone: +49 221 4984-0
Fax: +49 221 4989-102
sales@steinert.de
steinert.de

Technical alterations reserved.
steinertglobal.com

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