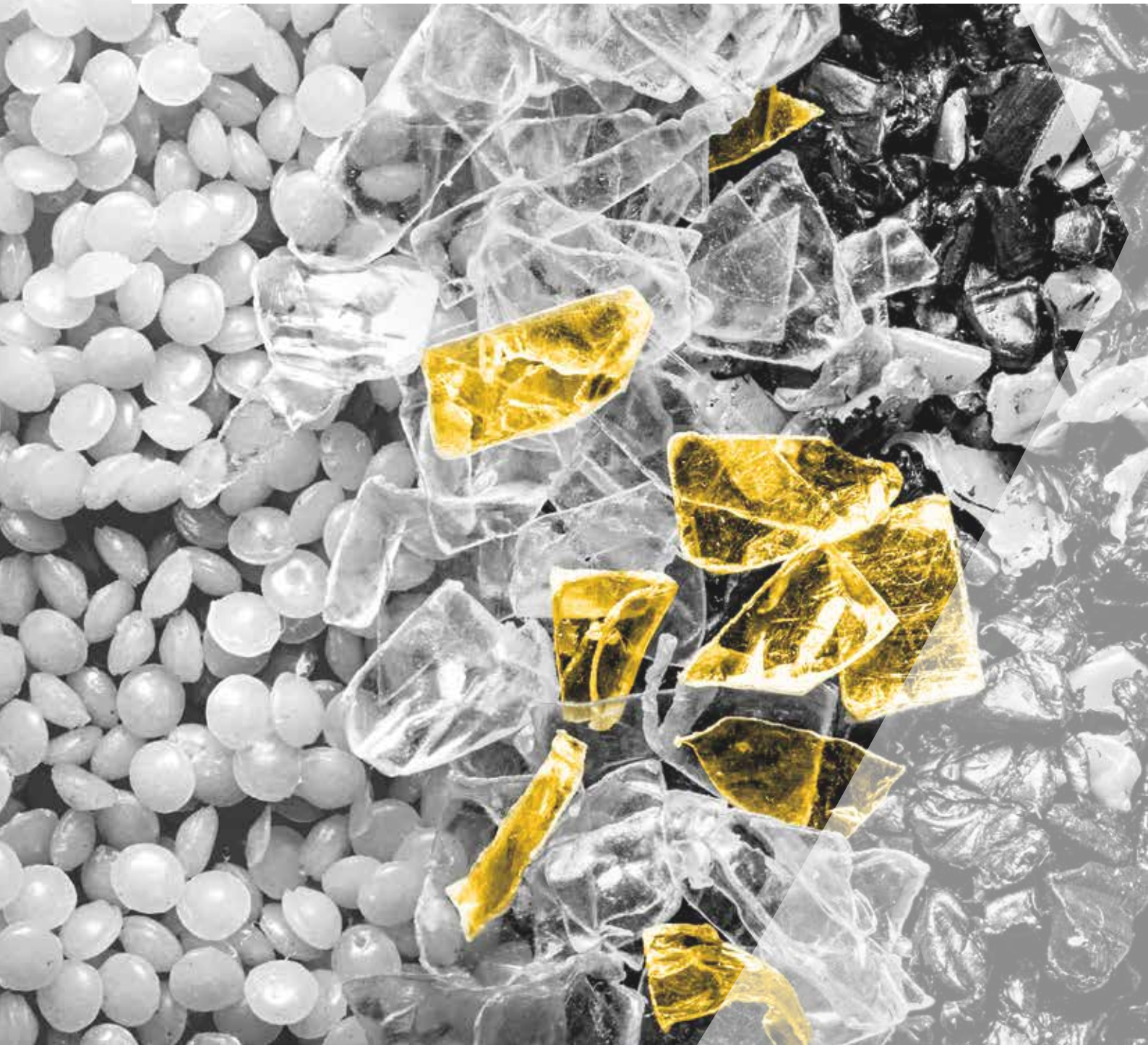
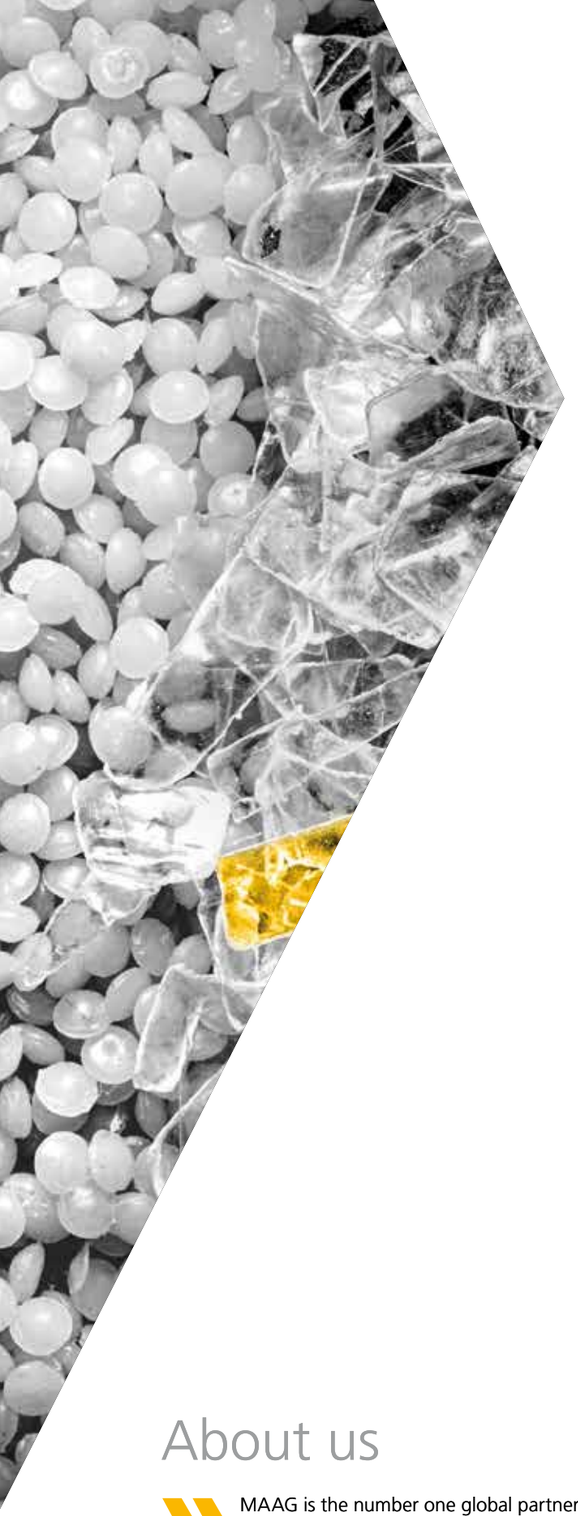
MAAG Group

a DOVER company

ETTLINGER

High Performance Melt Filters





Patented polymer filtration

As a specialist for polymer filtration and recycling systems, Ettlinger develops custom melt-filtration systems for the international market.

Our core competency is in the development and manufacture of high-performance continuous melt filters and injection molding machines.

On the melt filtration side, we make systems for continuous filtration of feedstock with varying degrees of contamination. Our patented systems remove contaminants such as paper, aluminum, wood, silicones or high-melting polymer composites from all standard polymer materials.

When it comes to injection molding machines, our technology is ideal for the manufacturing of thick-walled polymer moldings weighing more than 120 kg. The name Ettlinger has a global reputation for innovation, efficiency, versatility and customer support. Thanks to our seamless modular system, we can offer affordable solutions and flexible machine concepts for a wide range of applications.

Expertise, products and technologies within the MAAG Group are bundled, enabling Ettlinger customers to profit from an even broader and more effective portfolio. Vertically integrated products and services as well as access to the MAAG Group's worldwide after-sales and support create real added value.

Quality since 1983



1983 Roderich Ettlinger, a mechanical engineer by trade, founds the company as a manufacturer of plastic injection molding and customized machines.

1999 A new production shop opens to respond to the increased demand for Ettlinger products.

2004 The first "ERF 200", Ettlinger's patented melt filter system, enters the market the market with immediate success.

2010 After 27 years steering the company's success, Roderich Ettlinger makes way for his son Thorsten and Volker Neuber, who have since been responsible respectively for the technical and commercial development.

2013 Ettlinger North America is established in Atlanta to serve customers in the U.S. and Canada with an efficient sales network, local technical services and rapidly available spare parts.

2014 The new ECO high performance melt filter for PET and the ERF 500 for throughputs up to 6,000 kg/h are launched in the market.

2015 Ettlinger's offices and production facility in Königsbrunn are extended and modernized as demand continues to rise.

2017 Ettlinger presents the new ERF 350 melt filter as a further development of the proven ERF 250 technology.

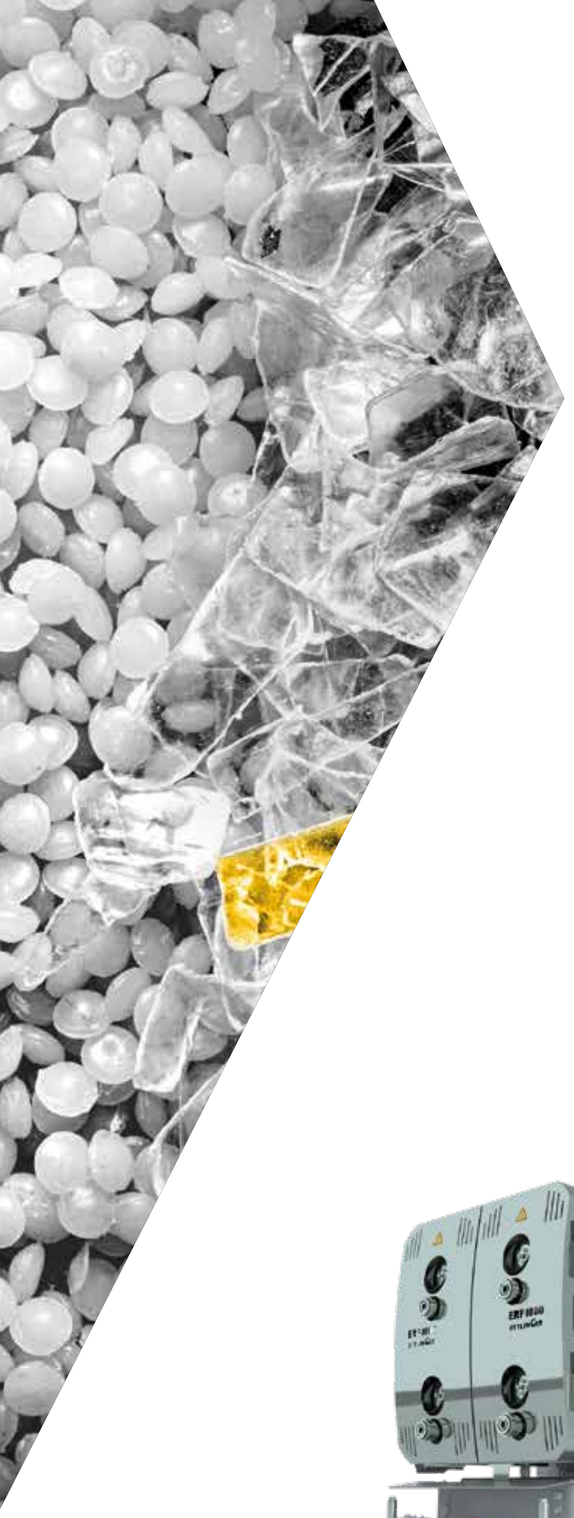
2018 Ettlinger becomes a Maag Pump & Filtration Systems company.

2019 At the K 2019 trade fair in Dusseldorf, Ettlinger unveils the brand new ERF 1000 high performance melt filter for throughputs of up to 10,000 kg/h

About us

» MAAG is the number one global partner to the polymer industry. MAAG's vast process know-how is the outcome of several decades of experience, and the sheer size, strength, and expertise of one of the world's leading suppliers of pump and filtration systems, pulverizers, and pelletizing and recycling systems have benefits for customers everywhere. Our aim is to maintain our position as market leader and continue to support you as a competent partner. «





High performance melt filters

Our continuously operating, high performance melt filters are used successfully around the world to filter polymer feedstock with varying degrees of contamination.

Ettlinger melt filters are the perfect technology for processing a variety of recycled materials – with a patented principle that has already demonstrated its functionality and performance in many industrial applications throughout the globe. The ERF and ECO series are capable of processing virtually any standard polymer that occurs in recycling plants, sheet and film manufacturing, tape and fiber production, or the compounding industry.

Owing to their uniquely compact design, they are also ideal for retrofitting existing extrusion lines.



How they work

All Ettlinger high performance melt filters are based on the same principle:

Melt flows from the outside to the inside of a continuously rotating filter drum with a large number of conical holes. The contaminants contained in the melt are retained on the outside filter surface; they are immediately removed from the screen by a scraper and then fed to the discharge system.

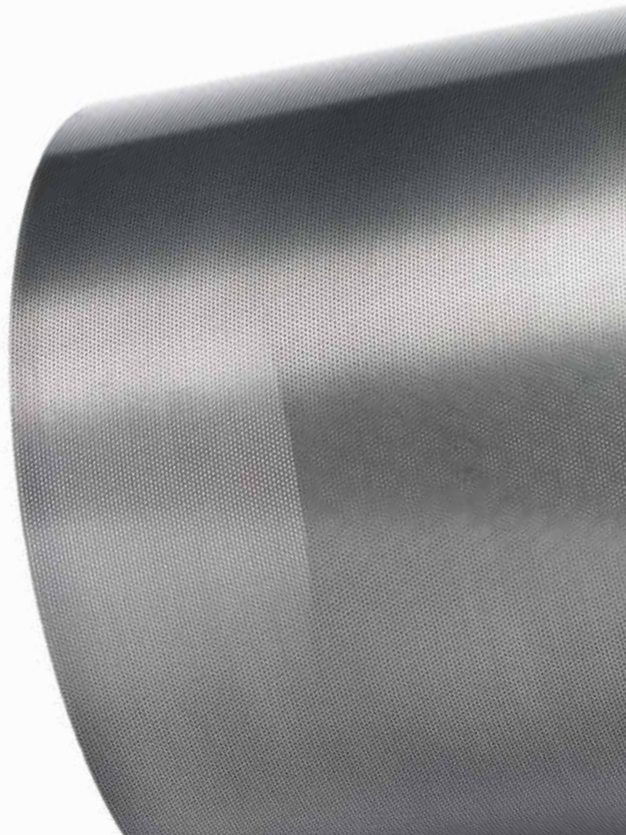
The filter drum and discharge system speeds can be adjusted independently of one another, so that in spite of the many possible applications the optimum setting can always be selected from both a processing and an economic perspective.

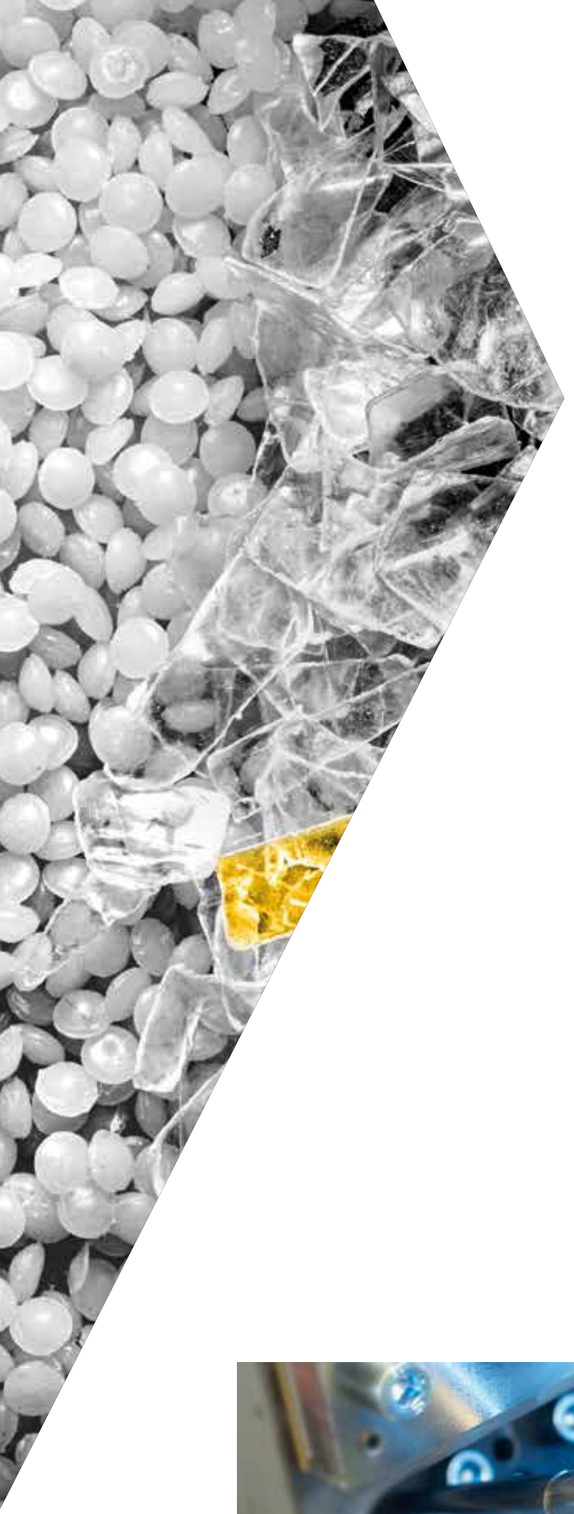
All Ettlinger filters are offered with several possible mesh sizes:

Micron	Mesh
60	240
80	190
120	120
150	100
200	70
250	60
300	50
400	40
500	35
750	22
1000	18

Benefits for you:

- Suitable for materials with up to 16% by weight contamination
- Extremely efficient filtration – including aluminum and elastomers
- Constant process pressure
- Short material and contaminant residence times in the melt filter
- Closed system, no contact with outside air
- Can run automatically for several weeks or months without changing the filter, depending on the application
- Very low melt losses even with high contamination
- Compact design with a small footprint
- Automatic operation with high operational safety



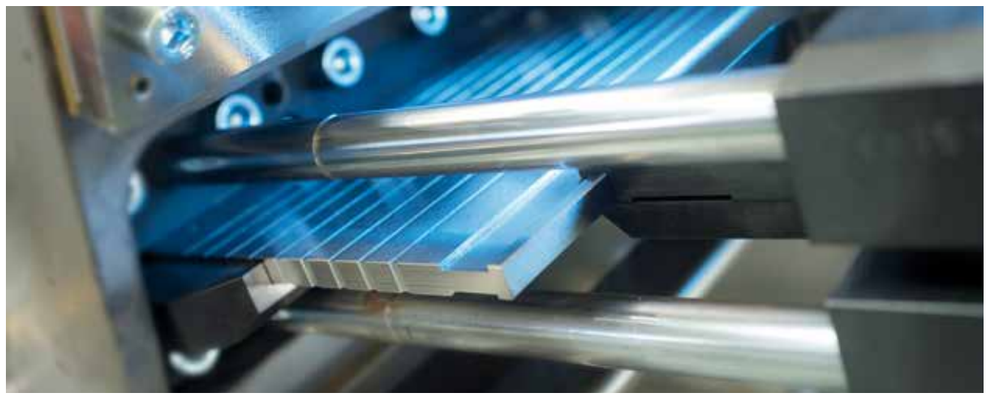


ERF series

The continuous melt filters in the ERF series are suitable for materials with up to 16% by weight contamination and are guaranteed to remain in use for long periods without changing the filter.

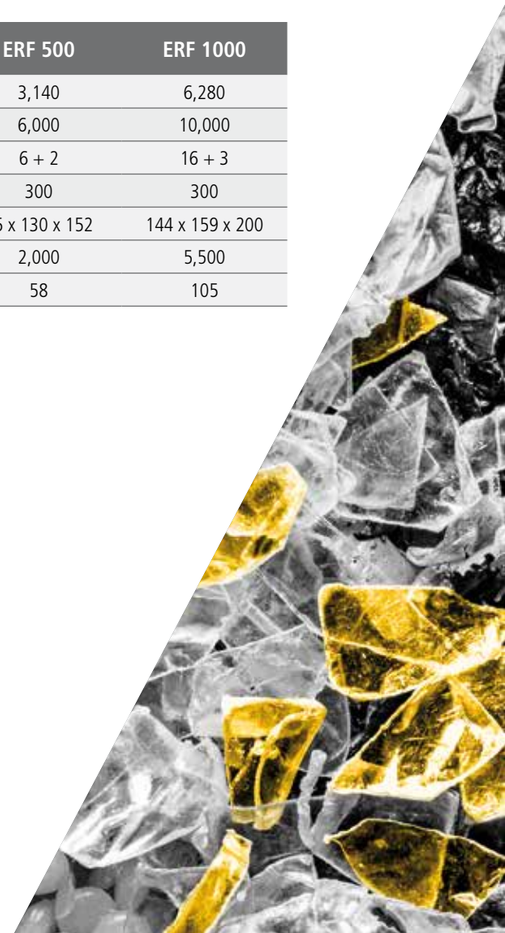
Our ERF melt filters are capable of processing a wide range of polymers (e.g. LDPE, LLDPE, HDPE, PP, PS, ABS, PC / ABS, TPE, TPU, POM). All solid or elastomer foreign particles such as paper, wood, aluminum, copper, rubber, silicone, or high-melting polymer composites are efficiently removed.

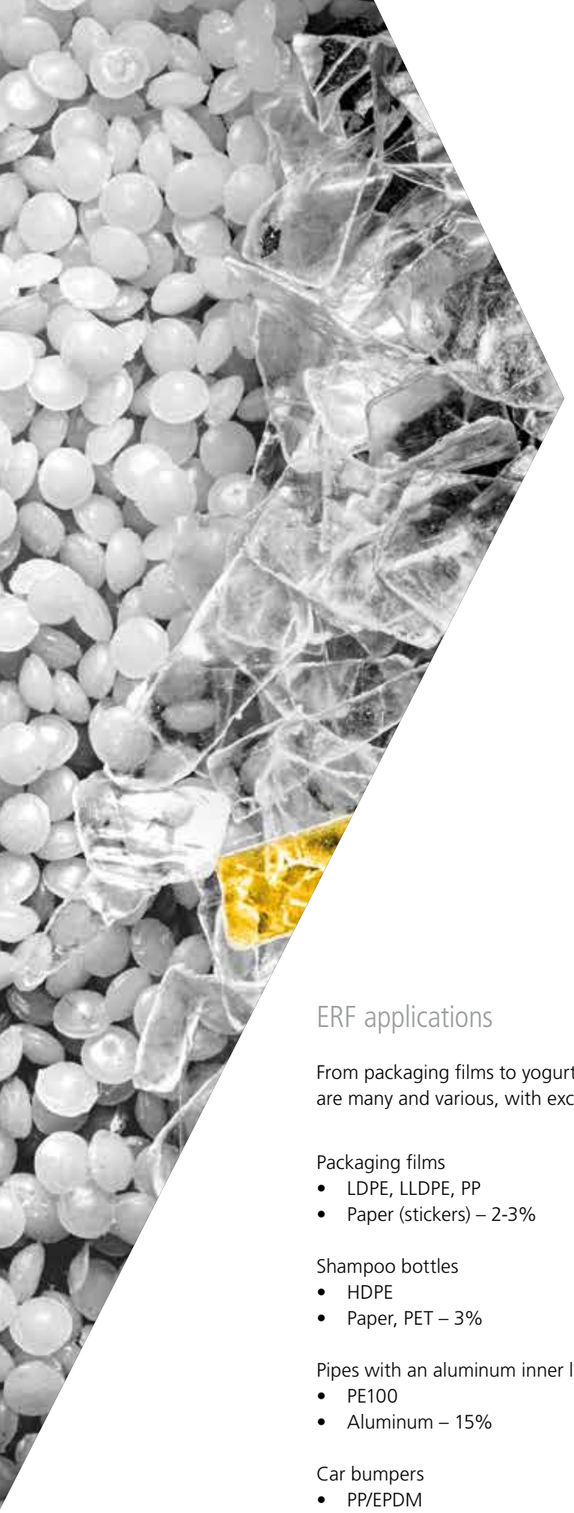
The classic application for ERF melt filters is repelletizing lines, but they are also successfully employed for sheet and profile extrusion. ERF melt filters can in principle be used in any extrusion line – either single or twin-screw and irrespective of the type of pelletizing system or other downstream unit. Four different sizes enable throughputs from 150 to 10,000 kg/h depending on the application.

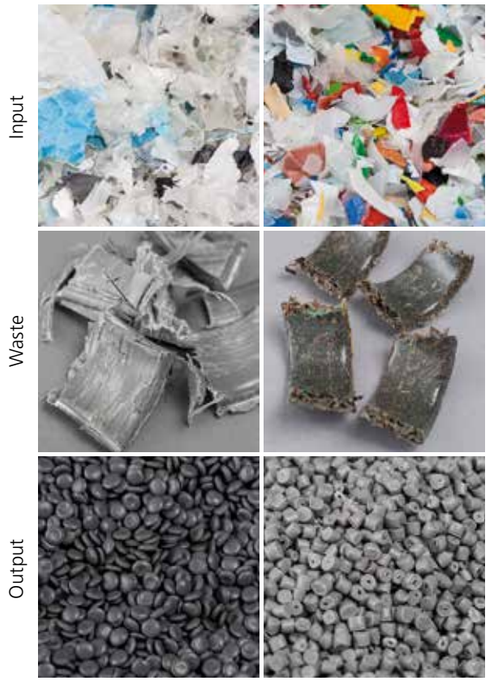




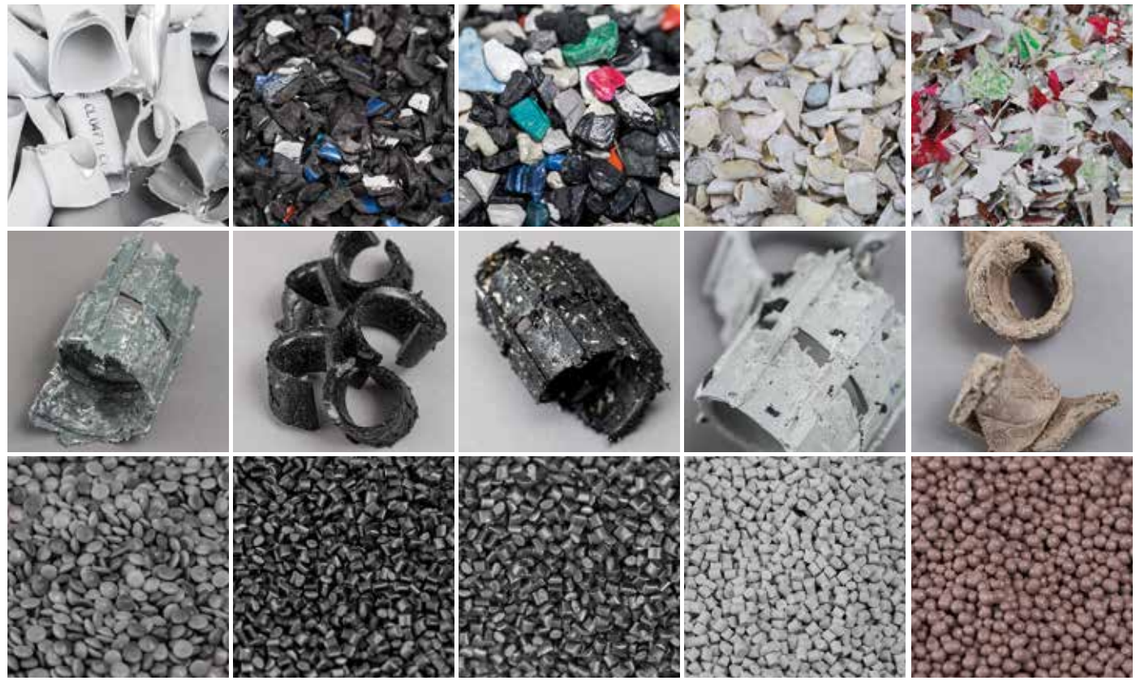
	ERF 200	ERF 350	ERF 500	ERF 1000
Total filtration surface [cm²]	1,250	1,570	3,140	6,280
Throughput max. [kg/h]	800	3,800	6,000	10,000
Heating zones	5 + 1	5 + 1	6 + 2	16 + 3
Operating pressure max. [bar]	300	300	300	300
Length x width x height [cm]	58 x 122 x 195	64 x 135 x 180	95 x 130 x 152	144 x 159 x 200
Weight [kg]	800	1,000	2,000	5,500
Total installed capacity [kW]	24	27	58	105







Packaging film | Shampoo bottles



Pipes with aluminum | Car bumpers | Electronic waste | Refrigerator recycling | Yogurt pots

ERF applications

From packaging films to yogurt pots – the applications for ERF melt filters are many and various, with excellent results every time.

Packaging films
- LDPE, LLDPE, PP
- Paper (stickers) – 2-3%

Shampoo bottles
- HDPE
- Paper, PET – 3%

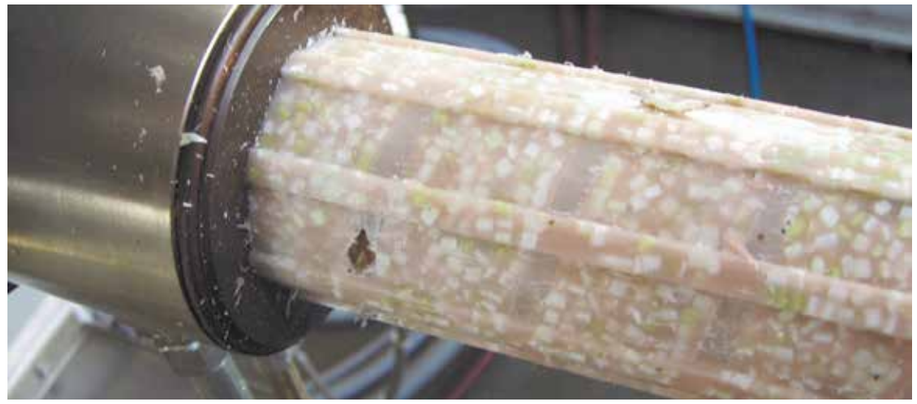
Pipes with an aluminum inner layer
- PE100
- Aluminum – 15%

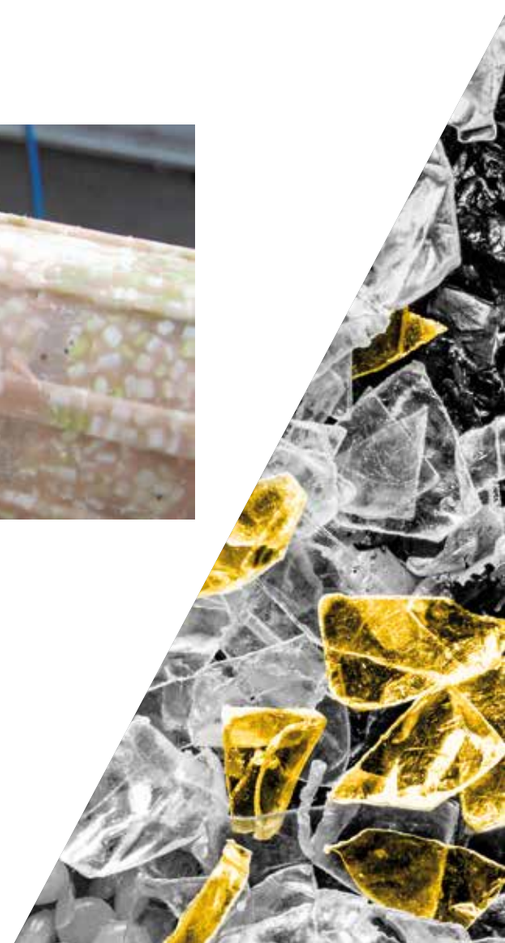
Car bumpers
- PP/EPDM
- Paint – up to 3%

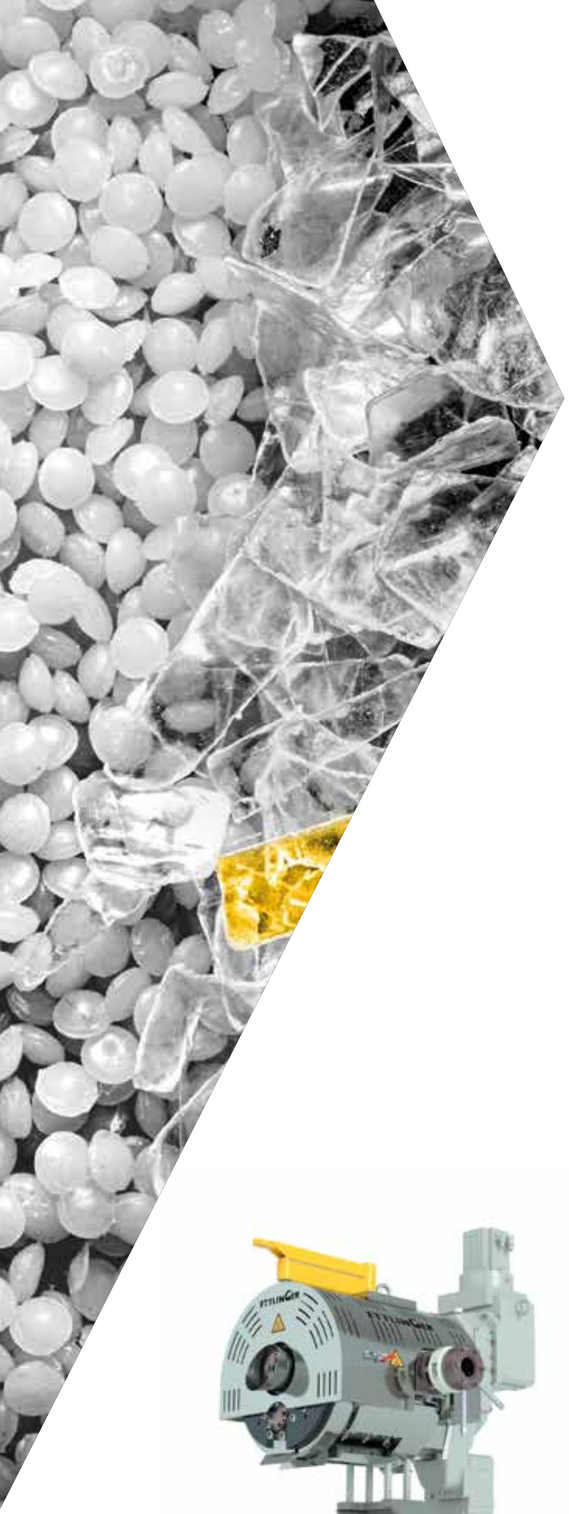
Electronic waste
- ABS
- Paper, aluminum, rubber – up to 4% overall

Refrigerator recycling
- PS
- Paper, wood, rubber (seals) – up to 4% overall

Yogurt pots
- PS
- Aluminum or PET – up to 4%







ECO series

The continuous melt filters in the ECO series are equally suited for filtering polymer feedstock from industrial waste with a low level of contamination or lightly contaminated post-consumer waste, and they can also be used for clean virgin material.

Our ECO melt filters are capable of processing a wide range of polymers but due to their special design are mainly employed in PET and PA applications. All solid or elastomer foreign particles such as gels, black specs, paper, wood, aluminum, copper, rubber, silicone or high-melting polymer composites are efficiently removed. In particular, there is significantly less degraded PET in the form of black specks.

For this reason, the classic application for ECO melt filters is extrusion systems, for instance where recycled PET bottle flake is converted into food packaging films, packaging tape, and fibers. PET repelletizing and compounding processes in general are other potential areas of use.

ECO melt filters can in principle be used in any extrusion line – either single or twin-screw and irrespective of the type of pelletizing system or other downstream unit.

Three different sizes – ECO 200, ECO 250, and ECO 250 Twin – enable throughputs from 150 to 6,000 kg/hour depending on the application.



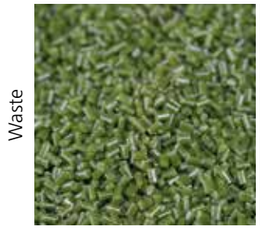
Input





Waste



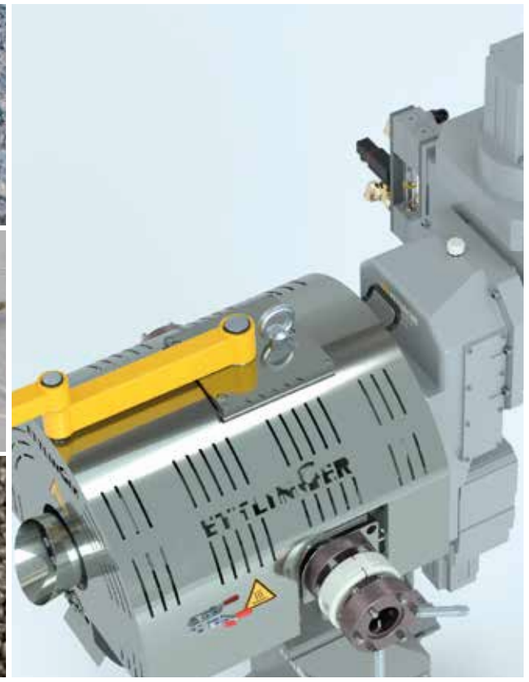


Waste

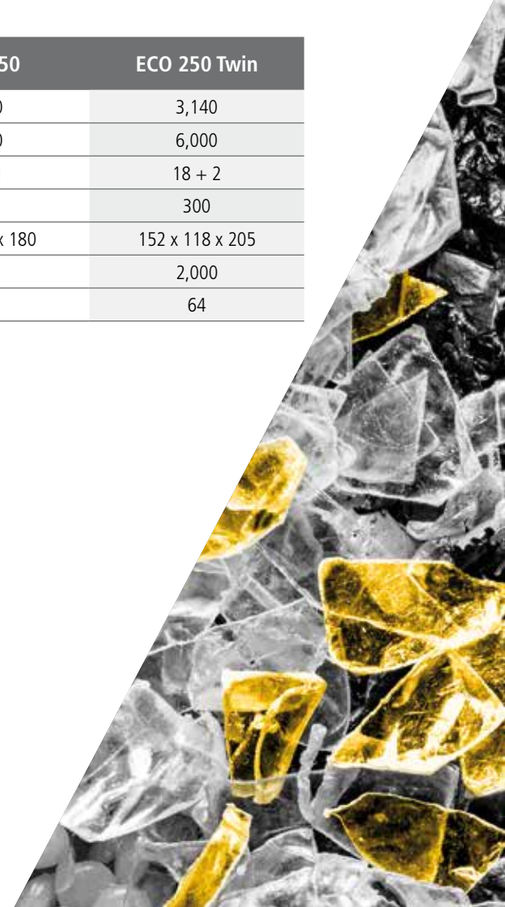


PET beverage bottles

PET fines



	ECO 200	ECO 250	ECO 250 Twin
Total filtration surface [cm²]	1,250	1,570	3,140
Throughput max. [kg/h]	800	3,000	6,000
Heating zones	6 + 1	6 + 1	18 + 2
Operating pressure max. [bar]	300	300	300
Length x width x height [cm]	71 x 114 x 180	78 x 118 x 180	152 x 118 x 205
Weight [kg]	700	900	2,000
Total installed capacity [kW]	28	31	64





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