



post consumer recycling

THE PERFORMANCE FACTORS

Clemens Kitzberger, Business Development Manager Post Consumer

15. Nov. 2019 | EREMA Group, Ansfelden, Austria

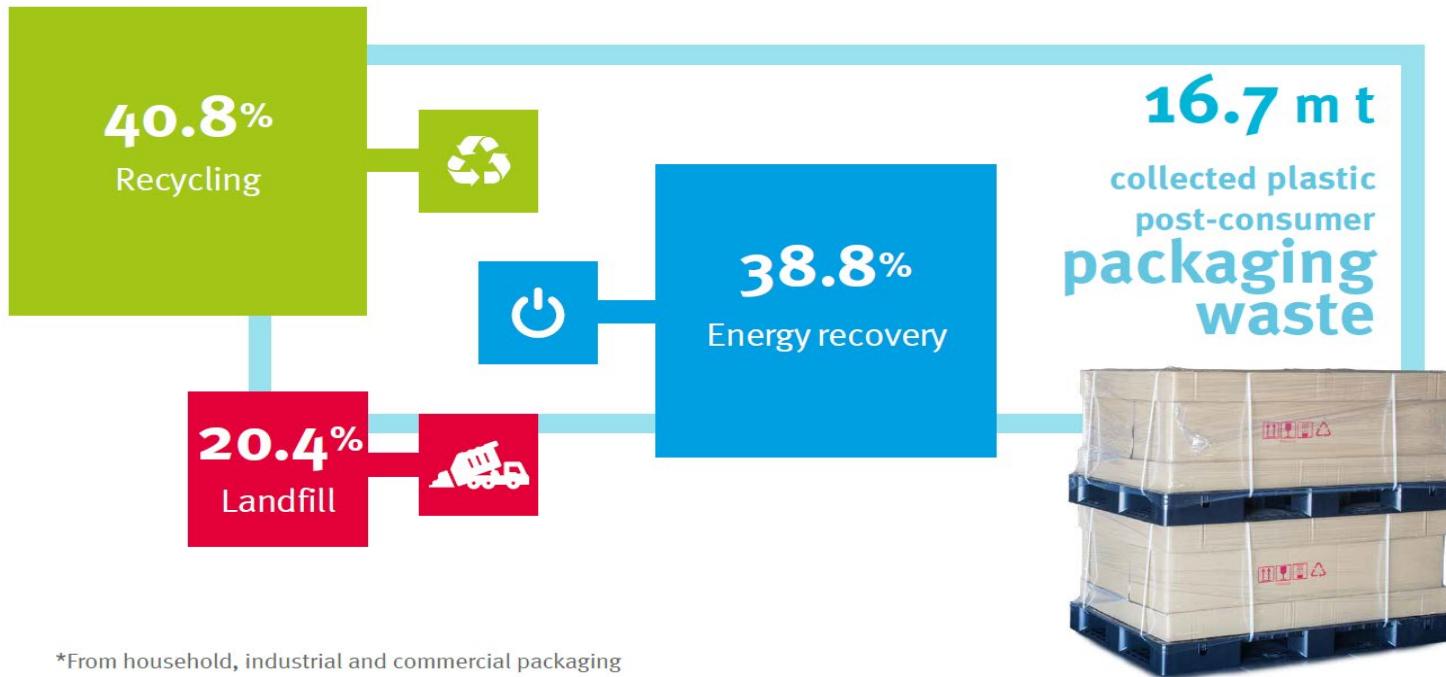


Recycling is the first option for plastic packaging waste

In 2016, 16.7 million tonnes of plastic packaging waste were collected through official schemes in order to be treated.

Source: Conversio Market & Strategy GmbH

Plastic PACKAGING* waste treatment in 2016 (EU28+NO/CH)







Circular Plastics Alliance: 100+ signatories commit to use 10 million tons of recycled plastic in new products by 2025

Brussels, 20 September 2019

Today, more than 100 public and private **Pledges**: part declaration of the Circular Plastics Alliance, will market in recycled plastics.

The declaration aims at how the alliance will make new products every year in Europe, in its 2018 Plastics Strategy, as part of its eff

First Vice-President Frans Timmermans, responsible for the industry's commitments to rethink the way we use plastics, we will clean up the planet, fight climate change, ban waste in the production cycle."

Commissioner Elżbieta Bieńkowska, responsible for Internal Market, SMEs and Entrepreneurship, said: "We have the opportunity to make our industry



COMMISSION STAN

Assessment report of the voluntary pledges for Plastics in

{SWD}

ANNEX I – PUBLISHED LIST OF PLEDGERS

66 out of 70 pledgers agreed their names to be published.

Agoria	Fischer GmbH	PET Sheet Europe
Alfred Kärcher SE & Co. KG	Henkel	Philips
Aliplast	Hera Spa	Plastics Recyclers Europe
APE Europe	HP	Plastix AS
Barilla	Iberostar Group	POLYOLEFIN Circular Economy Platform (PCEP)
Borealis	IKEA	REPSOL
Coca-Cola	Indorama	SP Group A/S
Confederation of Danish Industries (Dansk Industri)	Kaneka Belgium NV	Styrenics Circular Solutions (SCS)
CONTENUR	Kaufland	The Swedish Food Retailers' Federation (Svensk Dagligvaruhande)
COOP Italia	KENOGARD S.A.	Technology industries of Finland
Danish Brewers Association	Klöckner Pentaplast	Tetra Pak
Danone	Lassila & Tikanoja plc.	Thrace Plastics Co SA (Thrace Group)
Dell	Lexmark	UNESDA
Dow	LIDL	Unilever
Eceplast	LIPOR (Intermunicipal Waste Management, Porto)	VH Plastics
EcoSynergy System	L'Oréal	Vinylplus
EDANA	MACPAC SA	
Electrolux	Mayansi Circular Plastics SL	

RAW MATERIAL PRODUCERS

are

DRIVERS

for recycling.



BOREALIS

Keep Discovering

Borealis to acquire German recycler mtm plastics GmbH and mtm compact GmbH

Borealis, a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers, announces today that it has an agreement to acquire mtm plastics GmbH and mtm compact GmbH. This

Based in Niedergebra, Germany, mtm plastics processes around 35 000 tonnes of mixed post-consumer plastic waste and as such is one of Europe's largest providers of polyolefin recyclates.

"Plastics are simply too valuable to be disposed of as waste," says Alfred Stern, Chief Executive Officer of Borealis. "There is a significant business opportunity in a growing market with



BOREALIS

Keep Discovering

Media Release

Vienna, Austria | 17 July 2010

Borealis to acquire Austrian plastics recycling company Ecoplast Kunststoffrecycling GmbH

Borealis, a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers, announces that it has signed an agreement for the acquisition of 100% of the shares in Ecoplast Kunststoffrecycling GmbH ("Ecoplast"), an Austrian plastics recycler. This transaction is subject to regulatory approvals.

Based in Wildon, Austria, Ecoplast processes around 35 000 tonnes of post-consumer plastic waste from households and industrial consumers every year, turning them into high-quality LDPE and HDPE recyclates, primarily but not exclusively for the plastic film market.

"It is a logical next step for us to expand our mechanical recycling capabilities, which are key to our sustainability and circular economy efforts. Borealis wants to be a provider for circular economy plastic solutions and we see Ecoplast as an important complement to mtm in Germany. mtm's focus is on rigid injection moulding solutions. Ecoplast's core competence is recycling flexibles from highly contaminated household and commercial waste into a product that is suitable for thin film production," says Borealis Chief Executive Alfred Stern.

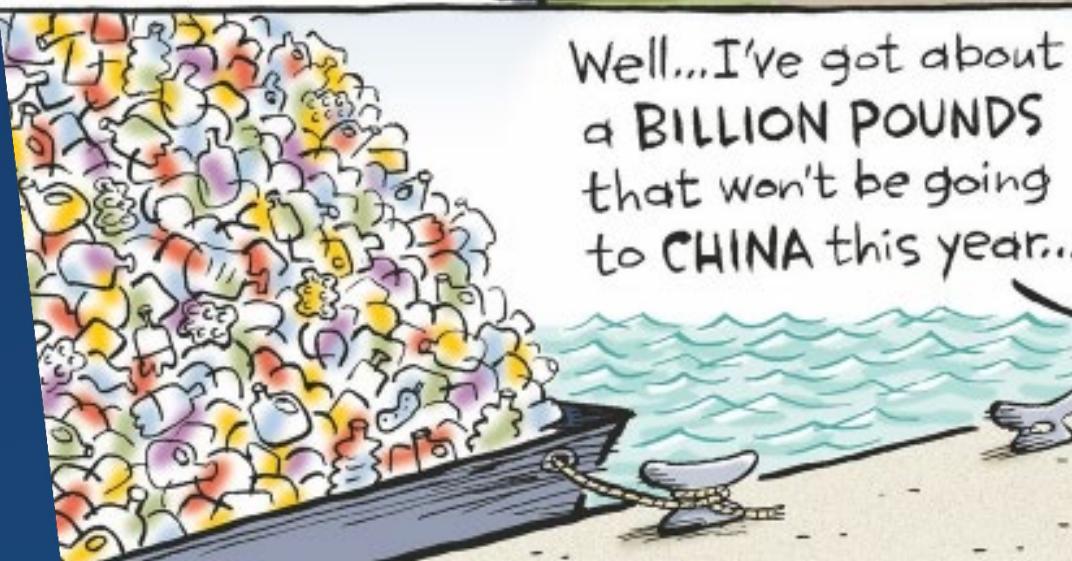
END

For further information, please contact:

Remember
when you said
you'd use
recycled content
if there was
only more
of it?



Well... I've got about
a BILLION POUNDS
that won't be going
to CHINA this year...





Application Post Consumer New Technology

Recycled pellets

Raw Material -> goal like virgin

Specified properties

Stable quality

Constant supply

- **Color –** should be as clear as possible
- **Lowest defect level -** for mechanical properties and aesthetics
- **Smell – low VOC (degassing)**



Post Consumer 4 target applications





annual use of
approx. 3 Mil t (EU)
approx. 1 Mil t recycled
LD/LLDPE stretch and shrinkwrap film – Supermarketfilm, e.g. 98/2

Recycling of Supermarket film & shrink-wrap film with paper contamination



30% rPE
from p. c.
supermarket film

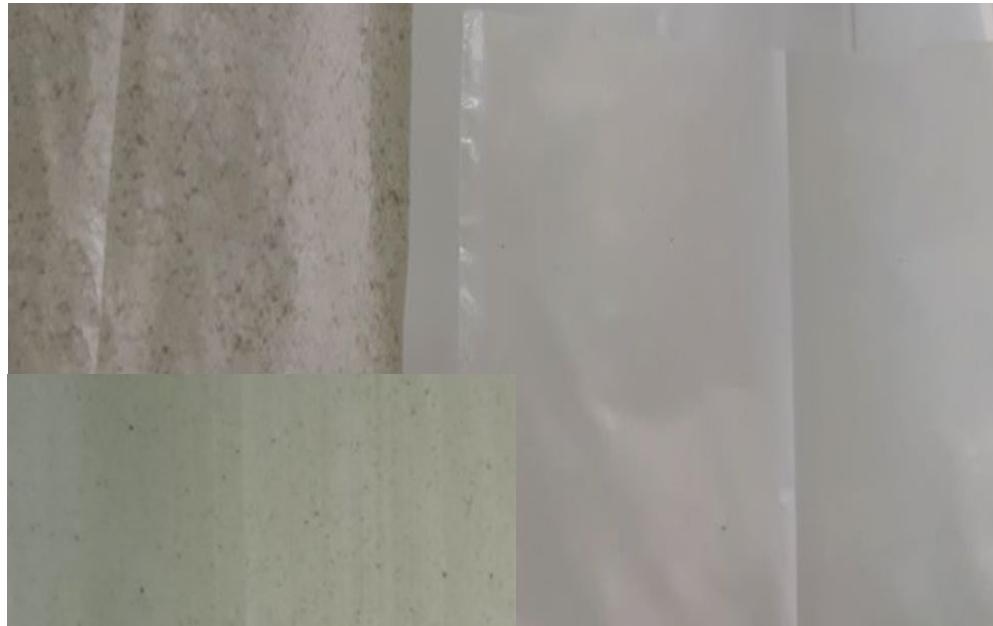




Household waste recycling
Washed LD/LLDPE film flakes “DSD 310”
approx. 3 Mil t
approx. 0,4 Mil t recyceld

Application Post Consumer New Technology - CEFLEX

DSD 310
100% film



DSD 310
New technology
100% film



The background of the slide features a collage of images: a close-up of crumpled white plastic on the left, a portrait of a woman with long brown hair in the center, and a row of green agricultural bales in a field under a blue sky on the right.

Agri. waste recycling
Washed LD/LLDPE film flakes
approx. 0,7 Mil t
approx. 0,4 Mil t recyceld

e.g. Supermarket film
What's in it?

CONTAMINATION

paper labels
(up to 5%)

tapes

pieces of wood
from pallets

strapping
band



Reactions

to temperature exposure

Wood slowly chars	120 – 150 °C	248 – 302 °F
Ignition temp. of various woods	190 – 260 °C	374 – 500 °F
Paper yellows	150 °C	302 °F
Paper ignites	218 – 246 °C	424 – 474 °F

Process temperatures of different polymers

LDPE	180 – 200 °C
HDPE	200 – 220 °C
PP	220 – 230 °C
PET	220 – 268 °C

Intarema Preconditioning Unit



homogenises



heats



dries



buffers

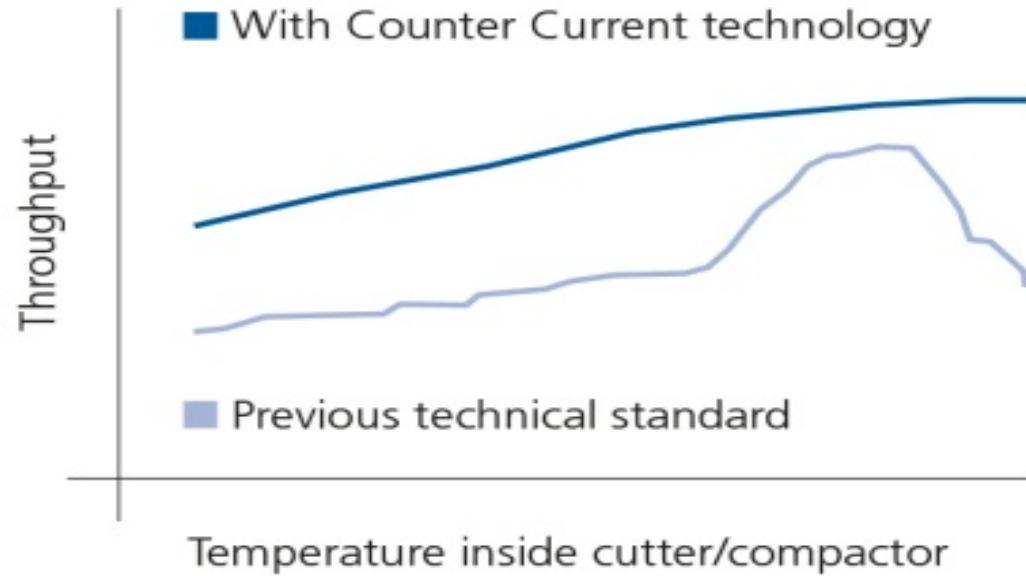


doses

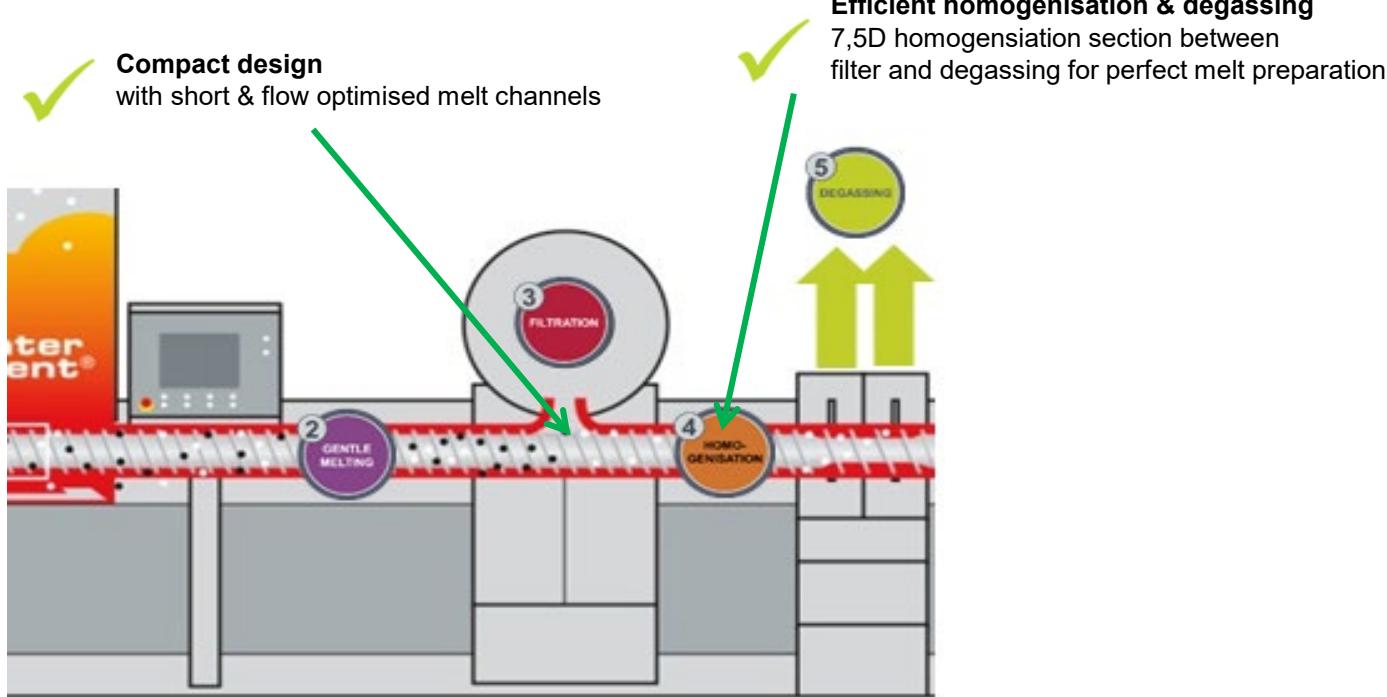
INTAREMA® at a glance

Counter Current technology

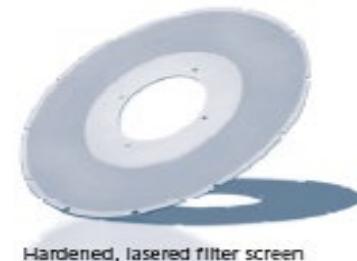
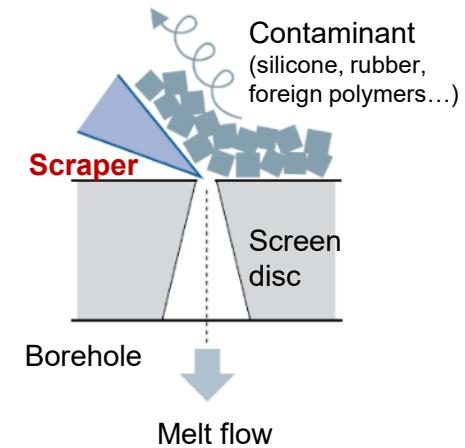
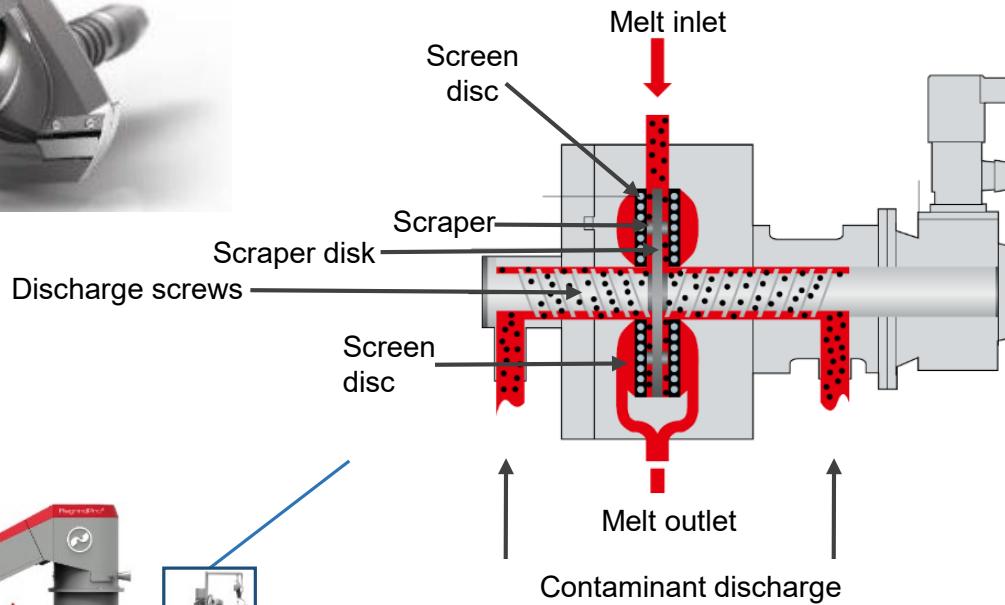
- **Higher PCU degassing power,
due to higher Temp., less
oxidative wear on the screw!!!**
- **Highest process stability
through improved material
intake ensures constantly high
output over considerably broader
temperature range and high
automatization degree.**
- **Increased throughputs** with
same plant size for more
productivity



TVEplus Extrusion process



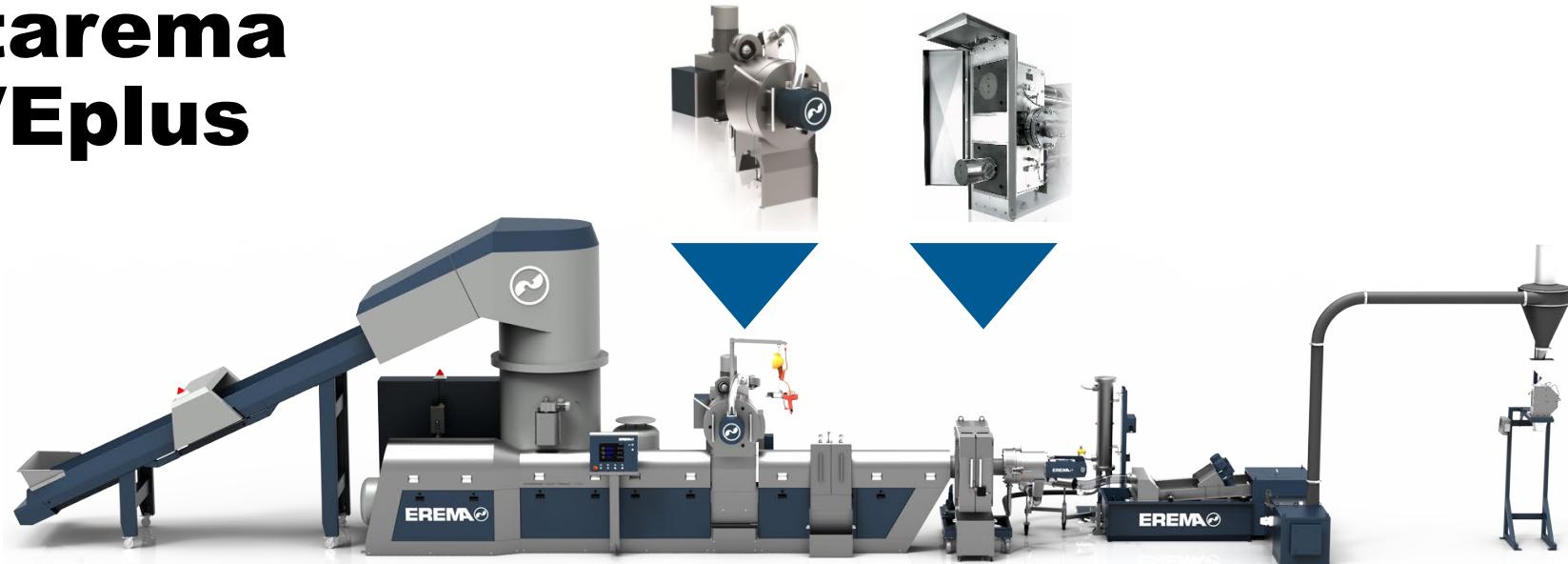
EREMA Laser Filter



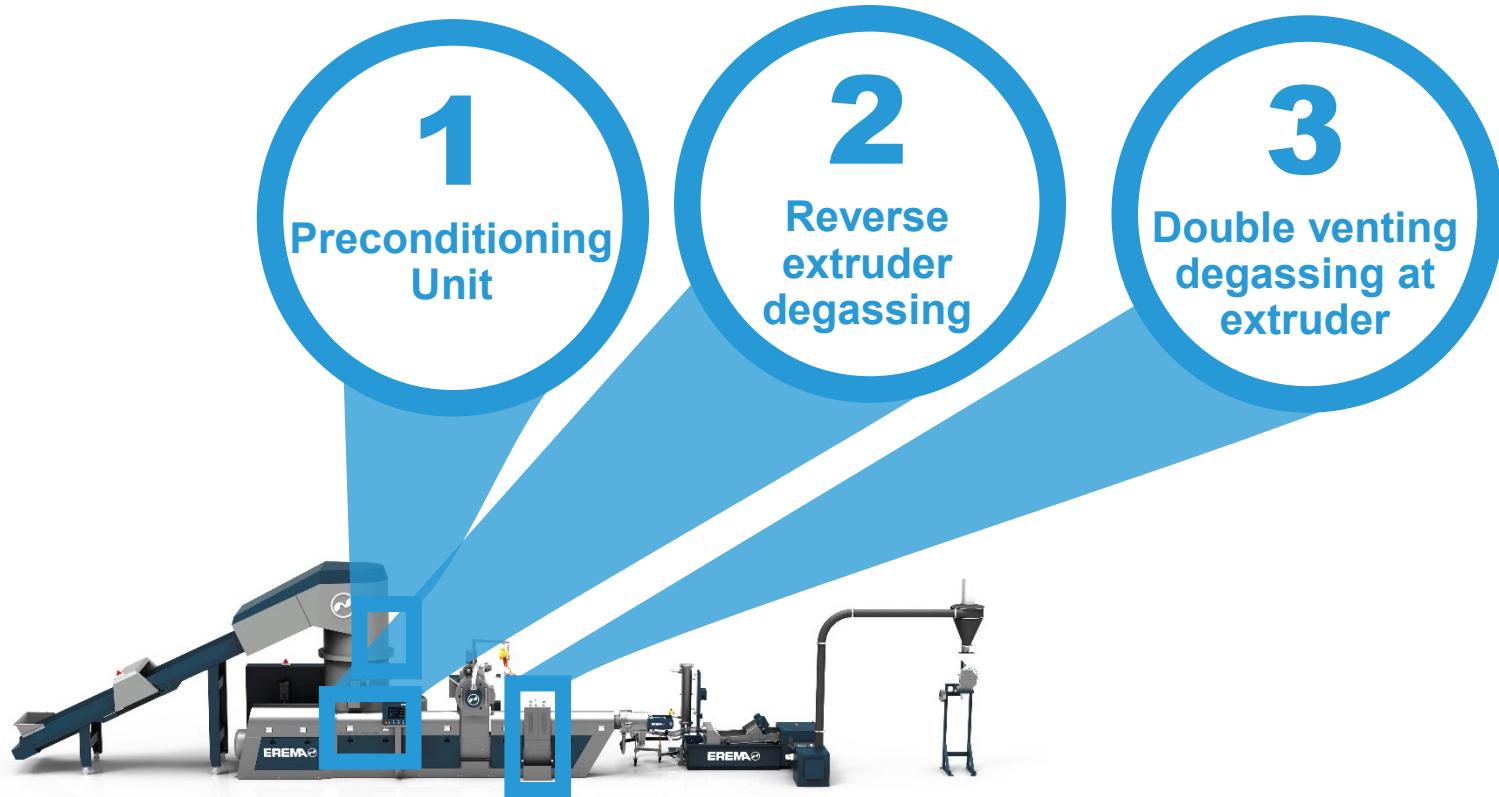
Our Solution

Intarema TVEplus

Double filtration:



TVEplus Degassing



3 degassing stages



Rigid recycling

THE PERFORMANCE FACTORS



Presseinformation

Weltneuheit

Erstmals Verpack

Werner & Mertz

Duschgelflaschen

Verpackung mit 1

für den Kosmetik

Aufbereitungsp

Der Grüne Punkt

Hohe Anforderun

Generell gilt laut

nur sichere Produc

Mertz von der ATU

gesundheitlicher

„Bei der Gutachte

Grüne Punkt“ die

Zusammenhang s

sagt Gutachter Jö

mit langem Atem

Innovative Techn

Für die Umstellun

nur technisch ge

Duschgelen eine

aus der Quelle Ge

Alle im Altplastik

Recycling-Prozess

Reinigung verw

Lebensmittelau

Punkt. Die aufbe

diesen Proz

Recyclingmaschin

Extrudersystem

Lebensmittelzugelassen heran“, so Dr. Markus Helftewes, Geschäftsführer Der Grüne Punkt. Die aufbereiteten Flakes werden anschließend zu Granulat weiterverarbeitet. Für diesen Prozessschritt kommt Technologie des österreichischen Recyclingmaschinenherstellers EREMA zum Einsatz. Dessen INTAREMA-RegindPro-Extrudersystem mit dem sogenannten ReFresher-Modul wurde speziell für die besonderen Pressekontakt:

Werner & Mertz GmbH, Birgitta Schenz (Unternehmenskommunikation)
Telefon 06131 96420-28, Fax 06131 96420-30, BSchenz@werner-mertz.com

Herausforderungen der Verarbeitungen von Kunststoffabfällen aus dem Gelben Sack ausgelegt. Diese Verfahrenskombination beseitigt durch einen thermisch-physikalischen Prozess auch die Gerüche. Dabei wird die Eigenenergie der durch den Extrusionsprozess vorgewärmten Granulate genutzt, was das Verfahren besonders energiesparend macht. „Schön, dass es so innovative Unternehmen gibt, mit denen wir gemeinsam das Recycling vorantreiben können. Ein wichtiger Part, den die ganze Kunststoffindustrie zur Zeit mehr als brauchen kann“, so Clemens Kitzberger, Business Development Manager Applikation Post-Consumer bei EREMA.

Extrudersystem mit dem sogenannten ReFresher-Modul wurde speziell für die besonderen Pressekontakt:



INTAREMA® TVEplus® RegrindPro®

Preconditioning unit





**Low volatile
odours out**

Mobile ReFresher for trial runs



Ready for use
in one day



Delivery in a container



Exactly specified raw material for the customer's application

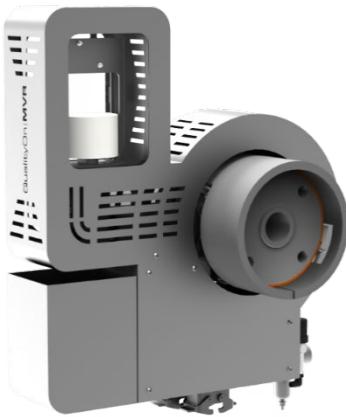


Perfectly prepared melt

Admixing of additives,
fillers and reinforcing
agents, colour masterbatch

QualityOn

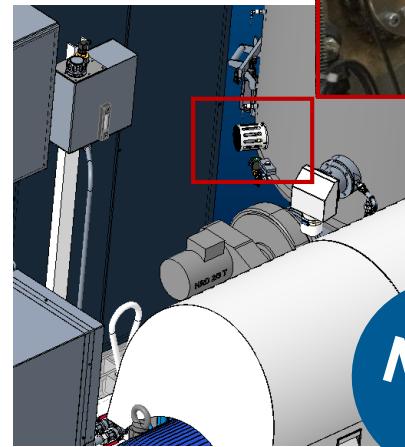
Measure Quality Online



QualityOn:MVR



QualityOn:Colour

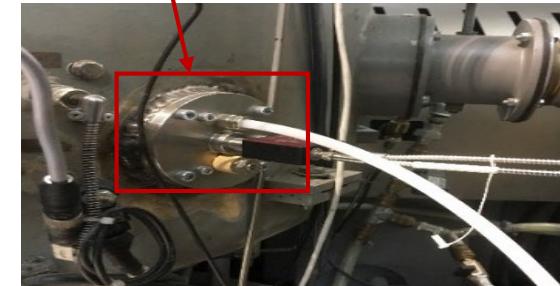
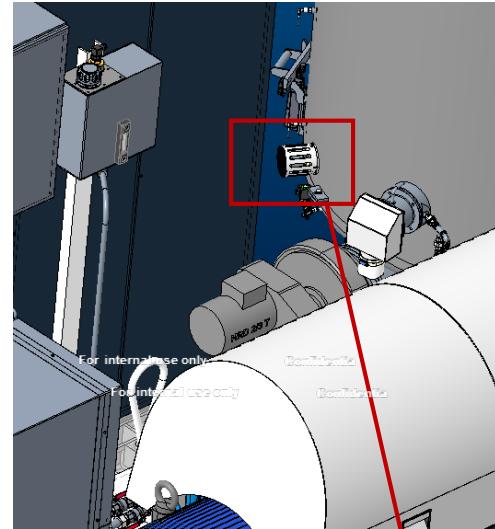
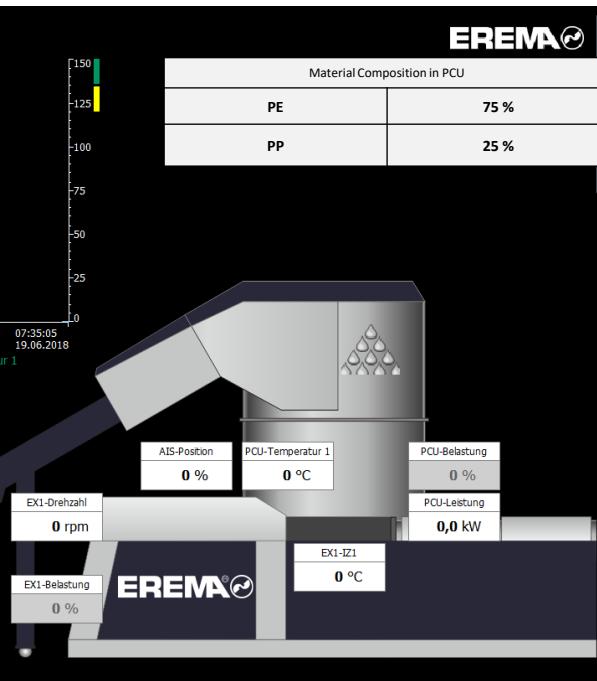


QualityOn: Polyscan

NEW

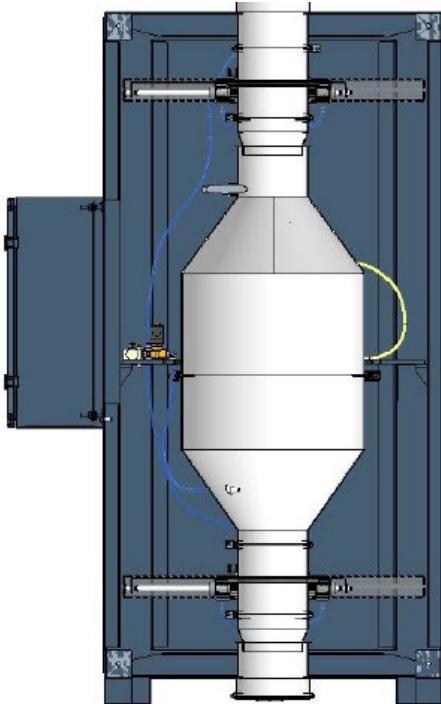


QualityOn Polyscan



QualityOn

Full integration throughput scale



- **One scale size for 100 – 3000kg/h**
- **Simple control**
- **Throughput data**
- **Recommended weight filling, no 2nd scale necessary for e.g. big bag filling**
- **Quality on color full integratable**
- **Quality on degassing (bulk density)**
- **No adjustment necessary for material change**
- **EREMA filling station integratable**



K2019
We K'd together

