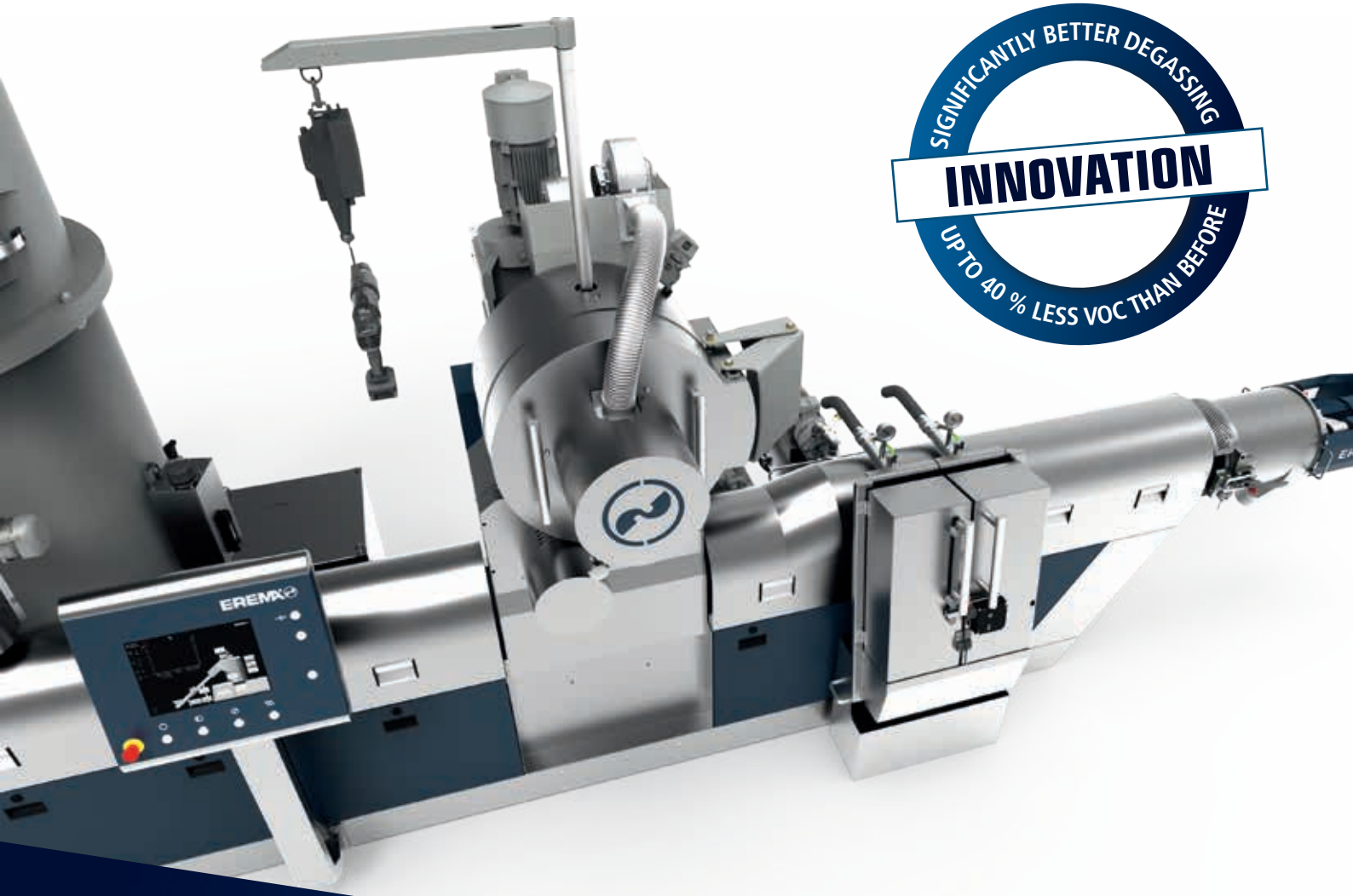
English



VOLEX

High performance degassing

Highly effective VOC reduction in single-screw extruders - at full throughput

CHOOSE THE NUMBER ONE.

EREMA®
PLASTIC RECYCLING SYSTEMS

Volatile out. Purity in.

VOLEX technology from EREMA degassing redefined

EREMA sets new standards in plastics extrusion with its innovative VOLEX technology, achieving impressive degassing performance at full throughput. This solution sees water stripping technology implemented on a single-screw extruder for the first time - a real technology premiere.

Made possible by proven INTAREMA® TVEplus® technology combined with a specially developed extruder screw and cylinder geometry in the degassing zone. The result is a high output system complete with exceptionally high degassing performance: up to 40% less VOCs compared to INTAREMA® TVEplus® standard degassing, and up to 75% lower VOC content compared to the input material (measured according to VDA 277), and significantly reduced fogging. The result: premium quality recycled pellets with consistently high mechanical properties.

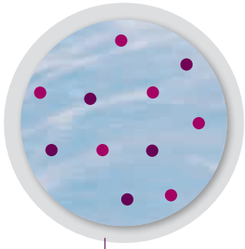
New capabilities for premium applications

This makes total sense from a business perspective because VOLEX technology processes a wide variety of film and regrind materials where a particularly high degassing capacity is required to make premium pellets even more efficiently than before. Recycled pellets of this quality level open up new capabilities for challenging applications - from films for transport packaging, lifestyle products and furniture to high-quality automotive interior components and robust transport solutions such as shopping baskets.

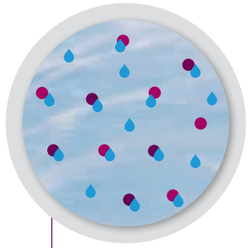
It is only the INTAREMA® TVEplus® that has the unique Plus-Zone - a specially developed process zone that has been proven over and over again to ensure the especially homogeneous distribution of water within the melt. This design advantage makes a significant contribution to achieving maximum efficiency and an extremely reliable process. The precisely regulated water inlet in this zone enables a particularly effective stripping process, which reliably removes VOCs and condensable substances such as limonene.

Another key advantage in terms of quality is that VOLEX technology achieves its high degassing performance without additional melt lines, without melt deflection and without melt distributors. This significantly reduces the risk of black spots and deposits, which is a clear advantage over other degassing solutions on the market.

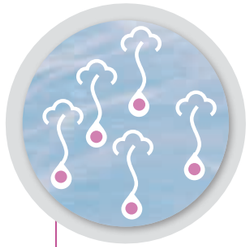
The result: the highest quality recycled pellets that are perfect for challenging applications with the highest specifications in terms of degassing performance.



Filtered post consumer melt that still contains VOCs
(Volatile Organic Compounds).



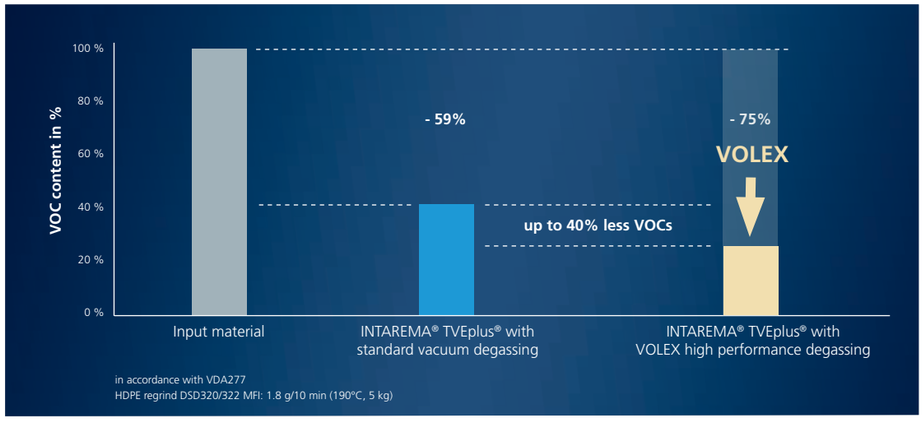
With EREMA's unique Plus-Zone that efficiently applies entrainer
To specifically increase the efficiency of the process used to remove VOCs, water is added as an entrainer to the melt in precise doses. The aim is to target the VOCs and significantly improve their removal from the melt. It is important that the entrainer is distributed uniformly throughout the melt for this to be effective. This is precisely where EREMA's unique Plus-Zone comes in: ideally located - directly after filtration and upstream of degassing - it ensures homogeneous and effective admixing of the water. The result is a really effective stripping effect.



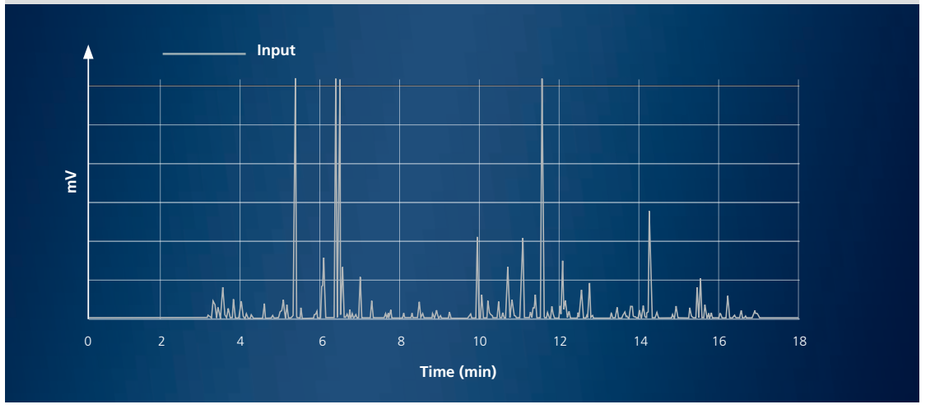
Boosted degassing performance
EREMA's VOLEX technology combines the open-pored melt created by the evaporation of water that features a large open surface area and short diffusion paths, with a multiplication of the free degassing volume for optimum contact between vacuum and melt. The optimum interaction of surface enlargement, short diffusion paths, continuous surface renewal, and large free volume boosts the degassing performance of the system.

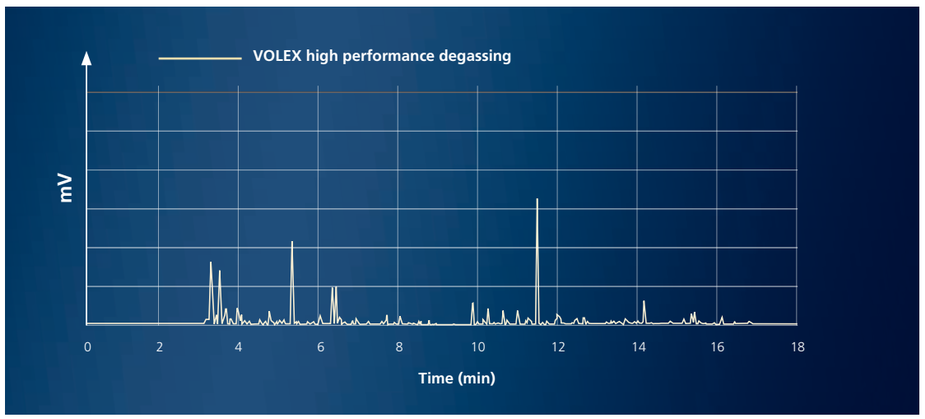
Clean melt
The result is a perfectly filtered and efficiently degassed melt, with no compromise on quality.

From good to outstanding - VOLEX boosts degassing performance yet again



Gas chromatographic analysis:
Comparison of input material vs. final regranulate after VOLEX process





From volatiles to value

VOLEX advantages that impress:

- **High performance degassing** with up to 40 % less VOCs (compared to INTAREMA® TVEplus® standard degassing) **at full throughput**
- **Significant reduction of limonene & condensable compounds - including reduction of fogging effects**
- **New capabilities for premium applications:** High-quality recycled pellets with consistently high mechanical properties means they can be used for challenging applications such as films for transport packaging, lifestyle products and furniture to high-quality automotive interior components and robust transport solutions such as shopping baskets.

SIGNIFICANTLY BETTER DEGASSING
INNOVATION
UP TO 40 % LESS VOC THAN BEFORE

- **Technology premiere:** first implementation of water stripping technology on a single-screw extruder thanks to proven INTAREMA® TVEplus® technology and a specially developed extruder screw and cylinder geometry in the degassing zone.

"We didn't invent water stripping - but we revolutionised it. With the unique Plus-Zone from EREMA and a specially developed extruder screw and cylinder geometry, we equip a single-screw extruder with this technology for the first time, more efficiently than ever before, and exclusively at EREMA. This opens up new business opportunities for our customers and enables a higher proportion of recycled pellets in premium plastic applications. "

Sophie Pachner
R&D Manager Process Engineering, EREMA

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