

## USE OF RECYCLED PLASTIC MATERIAL IN NETAFIM'S DRIPLINES

### The importance of using recycled material

**Recycling** is the process of converting waste products back into ready-to-use materials.

Recycling is a key component of modern waste reduction practice and of the highly promoted Circular Economy initiative. Recycling contributes towards environmental sustainability by substituting prime raw material inputs into, and redirecting waste outputs out of, the economic system.

Using recycled material lowers greenhouse gas emissions, prevents waste of potentially useful material and reduces consumption of virgin raw material, thereby reducing energy usage, air pollution (from incineration), and water pollution (from landfill).

### What has Netafim™ done to take advantage of recycled material?

Netafim™, the global leader in drip irrigation equipment and provider of a range of leading products, has established a track record over many decades of successful technical and operational excellence in engineered solutions.

Over the past decade Netafim™ has been investigating both the quality of processing and the life service potential of recycled material, including the development of two dedicated test methods: the **Filter Test** and **MTGA analysis**.

**The Filter Test:** A unique and original test method that was developed by Netafim™, for evaluating the cleanliness level of any recycled material lot. A dedicated lab extruder and a 3D microscope are used to test every lot of recycled material prior to production. This test method has recently been approved as a European standard CEN/TS 17627.

**MTGA analysis (Modulated Thermal Gravimetric Analysis):** A new, sophisticated method developed by Netafim™ for characterizing a recycled material for its long-term life expectancy, based on activation energy for volatiles release measurement.

The outcome of this work allows Netafim™ to safely combine recycled material in our dripline material matrix, without deteriorating our products' properties and life service expectancy, and while maintaining the same product warranty.

## What is the acceptance process for a new recycled material at Netafim™?

This is a four-step procedure:

1. Supplier fills a detailed questionnaire about his material and his company.
  2. First sample is sent to Netafim's Central Lab and tested for compliance with Netafim's Recycled Materials stringent specifications. Compliance must be achieved before moving to step 3.
  3. Supplier sends 5 additional samples, from 5 different production dates, to evaluate the supplier's lot-to-lot uniformity. Uniformity and compliance must be attained before moving to step 4.
  4. Three containerloads or truckloads of material are tried, one by one, in real production lines. If successful, a final approval is granted for the new material.
- ✔ Netafim™ owns several global recycling facilities where strict management procedures reflecting the steps above, and more, are being implemented.

## Netafim's responsible way of using recycled material in its driplines

- ✔ Netafim™ is the drip irrigation manufacturer that employs a rigorous, step-by-step procedure for testing and approving new recycled material suppliers.
- ✔ Netafim™ is the drip irrigation manufacturer that conducts full pre-shipment tests for each and every lot of purchased recycled material.
- ✔ It is well known among recyclers that Netafim's requirements, and its testing & approval procedures, are **the strictest** in the market, and not easy to meet.
- ✔ Netafim's Global Materials Team is continuously researching the effects of recycled material on driplines and makes sure that **their quality is not compromised**.

## Netafim's driplines with recycled content

- ✔ Always contain an added UV absorber, protecting against degradation by solar radiation.
- ✔ Comply with ISO 9261 international standard for emitters and emitting pipes.
- ✔ Comply with ASAE S435.1 American standard for polyethylene micro-irrigation laterals.
- ✔ Meet the current and globally adopted Sustainability goals.
- ✔ Have the same life expectancy and warranty period as non-recycled driplines.

## FAQ:

**Q. Does Netafim™ provide the same warranty to driplines made with recycled content as virgin products?**

**A.** Yes. Netafim™ provides the same warranty for both products made with recycled and non-recycled materials.

**Q. How do I know that my product contains recycled content above the defined threshold?**

**A.** Netafim™ brand products that contain recycled content above the defined threshold are marked as ReGen™ products.

**Q. Are products that contain recycled content certified by ISO 9261?**

**A.** The international standard for ISO 9261 doesn't relate to the polyethylene raw materials from which driplines are made. Rather it relates to the product's performance. Netafim™ complies with the ISO 9261 performance requirements, and all its dripline products are tested accordingly, irrespective of the source of the raw material.

**Q. Are the maximum working and flushing pressures presented in the technical materials the same for standard pipes and those containing the ReGen™ brand?**

**A.** Yes, both the pressures and all other technical data are the same for the different types of pipes. It is always highly recommended to compare and analyze the technical data of the driplines to be used.

**Q. What will be the useful lifetime in field of these ReGen™ driplines compared to the driplines we are currently using?**

**A.** As long as we compare laterals of the same diameter and the same wall thickness, the irrigation seasons they will serve will be exactly the same.

**Q. Can ReGen™-marked driplines be purchased in all markets?**

**A.** No, unfortunately Netafim™ cannot offer ReGen™ marked products in all markets. Netafim™ brands products that contain recycled raw material above certain threshold as ReGen™ products - these thresholds are determined in each business unit according to the ability to collect, recycle and obtain recycled materials that comply with Netafim™'s strict standards.