OCTAL PET RESIN: A LOW CARBON ALTERNATIVE

OCTAL has implemented a state-of-the-art two-stage reactor system to produce virgin PET resin. OCTAL’s unique resin manufacturing process eliminates an entire step, SPP, from the standard process, which decreases manufacturing energy consumption. OCTAL’s bottle grade PET resin also offers superior product performance — exceptional gloss, clarity and consistency — when compared to traditional PET resins.

LIFE CYCLE ANALYSIS:

An independent Life Cycle Analysis* conducted for OCTAL found that when compared to PET bottle-grade resin, the production of OCTAL PET resin:

- Consumes 63% less purchased electricity
- Uses 23% less on-site thermal energy
- Creates a 10% lower cradle-to-gate global warming potential compared to bottle-grade PET
- Generates a 22% lower cradle-to-gate environmental footprint compared to bottle-grade PET

In addition, customers using OCTAL PET resin can operate with a faster cycle time because their spherical shaped resin allows for more even heat dissipation and eliminates surface dust formation. This allows customers to reduce their own electricity requirements and processing carbon footprint.

PRODUCT OFFERING

- **PRODUCT RANGE**
  - GP02 – 0.84 I.V.
  - HFO1 – 0.80 I.V. (Hot Fill Resin)
  - WG02 – 0.76 I.V.
  - GP01 – 0.80 I.V.
  - RH01 – 0.76 I.V. (Fast Reheat Resin)
  - RH02 – 0.80 I.V. (Fast Reheat Resin)
  - RH03 – 0.84 I.V. (Fast Reheat Resin)
  - SG04 – 0.82 I.V.

- **CERTIFICATIONS**

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100% 80% 60% 40% 20% 0%

Global warming potential kg CO2 eq

Ozone layer depletion kg CFC-11 eq

Acid rain potential kg H2 eq

Fresh water aquatic kg 1,4-DB eq

Terrestrial ecotoxicity kg 1,4-DB eq

OCTAL Bottle-grade PET

Bottle-grade PET

* The study conducted by Intertek Expert Services used CML 2 baseline 2000 methodology to compare the environmental impacts of 1 kilogram of OCTAL’s PET resin made at the Salalah, Oman, facility from cradle-to-gate with traditional bottle-grade APET (including all steps up to the point of production and delivery to Europe).
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**PET RESIN**

**RESIN FEATURES**
- **LOWER RESIDENCE TIME**
  - Minimal generation of secondary products and cross link polymers
- **MORE STABLE PARAMETERS**
  - Consistency in product quality
- **LOWER TEMPERATURE PROCESSING**
  - Less thermal degradation, reduced AA regeneration and minimum secondary products generation
- **SPHERICAL PELLETS AND SMOOTH ROUNDED EDGES**
  - Very low fines in resin
  - Negligible fines generation in conveying, resulting in less filter cleaning, better dryer efficiency
  - Better air flow around the pellets in dryer, hence quick drying
- **LOW CRYSTALLINITY**
  - Quick melting, less temperature in feed zones, resulting in lower heater load
  - Lower residual AA generation

**LEADING THE INDUSTRY IN SUSTAINABILITY**

OCTAL was founded on a commitment to the principles of sustainability. These principles have shaped the development of our facilities and production methods. They are inherent in our products and guide our people every day. OCTAL has invested US $600 million to create a purpose-designed production facility that exceeds environmental standards for and is significantly more efficient than conventional virgin PET resin plants. OCTAL has become one of the leaders in sustainable PET packaging with a total of 1,000,000 MT per annum.

Our unique resin manufacturing process eliminates an entire step from the recognized standard and brings advantages such as enabling customers to operate with a faster cycle time thus reducing the electricity requirements and lowering the carbon footprint. It also provides exceptional gloss, clarity and consistency for all resin grades compared to traditional PET resins.

1. **ENERGY EFFICIENCY**
   - Our patented production processes employ state-of-the-art technology, yielding sheet and resin with the highest quality and lowest carbon footprint available today. Our process:
     - Uses 23% less onsite thermal energy
     - Reduces electricity use by 63% over conventional PET resin plants
     - Sources 100% of its energy from clean burning gas

2. **WATER EFFICIENCY**
   - OCTAL plants use 100% recycled municipal wastewater, which eliminates the need for fresh water. We then recycle water from the production process and feed it back into the system or use it to irrigate a green belt on our production facility’s premises.

3. **WASTE REDUCTION**
   - Our production facility collects and processes into saleable product 100% of internally generated resin production.