

# Einar® 401

## Anti-static additive for impact copolymer PP and PP foams



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**PRODUCT NAME**

Einar® 401

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**APPLICATION**

Anti-stat for impact copolymer PP

Anti-stat for PP foams

# The plant-based, food-grade solution for impact copolymer PP and PP foams

**Einar® 401** is a superior plant-based, food-grade anti-static additive custom-designed for use in impact copolymer polypropylene. This long-lasting anti-static additive is the perfect alternative to ethoxylated amine and amides as it is able to match or exceed these while being safe enough to eat.

With **Einar® 401** you can also add a more sustainable profile to your PP foams without affecting costs all while optimising quality.

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## KEY FEATURES

- ✓ Highly effective replacement for anti-static ethoxylated amines and amides
- ✓ An optimised blend of mono- and diglycerides with selected fatty acid profiles made from vegetable oils
- ✓ An internal anti-static additive for additive masterbatches based on polypropylene
- ✓ Worldwide regulatory approval for food-contact applications
- ✓ Available in pellet form

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## KEY BENEFITS

- ✓ Prevents dust attraction to plastic articles
- ✓ Prevents electrical discharge during filling and loading of plastic packaging
- ✓ Can be used for other polypropylene grades by adjusting the dosage level
- ✓ No worries when used in food-grade applications
- ✓ No adverse effects on mechanical, optical, and barrier properties
- ✓ Ensures high foam quality
- ✓ No stress cracking of electronic components
- ✓ Enables clean and dust-free polypropylene packaging in production and final application
- ✓ Consultancy and technical evaluations available from our applications team



**Einar® 401 for PP impact copolymer anti-stat applications**

**Einar® 401** offers unmatched anti-stat performance in impact copolymer PP injection moulding applications. It's the ideal candidate to ensure clean, dust-free and attractive packaging across a broad range of applications, such as thin-walled containers used for yogurt and margarine, or small or large buckets for both food and non-food storage. The anti-stat effect is both short and long term and will easily exceed one year, also at low humidity conditions.

Recommended loading levels for impact copolymers are 0.5 - 1.0% for most applications but higher concentrations may be required in demanding thin-walled packaging.

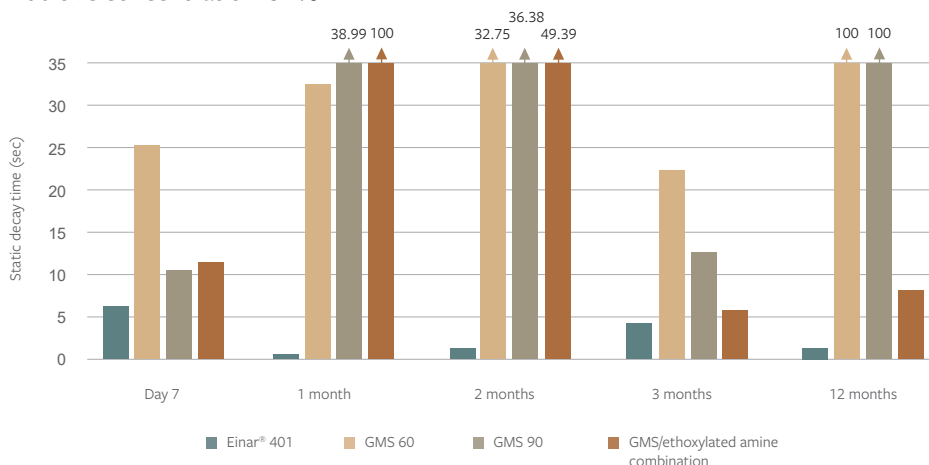
**Einar® 401** will provide necessary mould release and denesting properties when incorporated in an impact copolymer at the recommended levels for good anti-stat performance.

**Einar® 401** comes in pellet form, ideally suited for mixing with the polymer material. The pellet form ensures easier dosing and reduced stickiness in feeding and transport equipment.



**ANTI-STAT PERFORMANCE IN IMPACT COPOLYMER PP**

Additive concentration is 1%



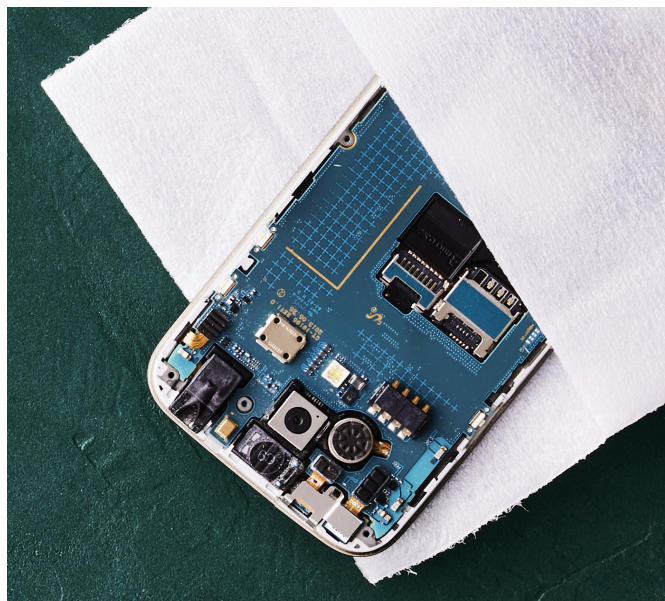
*Einar® 401 has excellent long term anti-stat performance in impact copolymer PP*

### **Einar® 401 for anti-stat applications in PP foams**

The use of efficient anti-stats in PP foam is particularly important in the packaging of sensitive electronics, where static build-up may result in electrostatic discharge that will be detrimental to circuit boards and other electronic components.

**Einar® 401** is a proven performer, delivering excellent anti-stat protection to PP foam even at low humidity conditions. Recommended loading levels are 0.2 - 0.5% for most applications.

**Einar® 401** has no adverse effect on foam stability. The product is a 100% amine and amide-free solution and will not interact with ageing modifiers such as **Einar® 201**. Due to its chemistry there are no issues with stress cracking of polycarbonate when packaging materials are in direct contact with packaged electronic components.



### **Einar® 401 product details**

|                               |   |         |
|-------------------------------|---|---------|
| Physical/chemical properties: | monoglycerides, min.  | 90%     |
|                               | free fatty acids, max.  | 1.5%    |
|                               | free glycerol, max.   | 1%      |
|                               | melting point, approx.  | 60°C    |
|                               | colour  | white   |
|                               | form at 25°C  | pellets |
| Storage conditions:           | Should be stored in a cool and dry place in tightly closed packaging  |         |
| Packaging:                    | 20 kg multiply paper bag with an inner polyethylene bag (35 bags per pallet) or 500 kg anti-static polyethylene big-bag |         |
| Product form:                 | Einar® 401 comes in pellet form   |         |
| Total shelf-life:             | min. 24 months  |         |

### **Guidelines for use**

When used in impact copolymer PP, **Einar® 401** should be incorporated into the polymer matrix via a masterbatch or by direct addition at the resin manufacturer.

When used in PP foam, **Einar® 401** should be incorporated into the polymer matrix via liquid injection into the extruder in the foam manufacturing process. **Einar® 401** can also be added via masterbatch.





# Sustainable solutions for the polymers industry

## Health and Safety

Einar® is identified as non-toxic and is not expected to cause irritation to the skin, eyes or lungs. Detailed MSDS is available on request.

## Legal status and other regulatory information

### Einar® 401

- is a dual use additive for use in food (E471) and polymers
- complies with the purity requirements of FAO/WHO regarding food additives (JECFA)
- is manufactured in accordance with Danish- and EU regulations and under hygienic conditions
- may be used in plastic materials and articles intended to come into contact with foodstuffs in accordance with Regulation (EC) No. 10/2011 on plastic materials and articles intended to come into contact with food
- is GRAS according to FDA 21 CFR 184.1505, and may in accordance with FDA 21 CFR 174.5 be used as components of articles intended for contact with food
- Roundtable of Sustainable Palm Oil (RSPO) certificate available on request with order
- Kosher & Halal certificates and REACH registration available on request

To find out more or to order samples of Einar® 401, visit [polymers.palsgaard.com](https://polymers.palsgaard.com) or contact us via [polymers@palsgaard.com](mailto:polymers@palsgaard.com)