EINAR® PLANT-BASED, FOOD-GRADE POLYMER ADDITIVES

Einar® 401
Anti-static additive for impact copolymer PP and PP foams

PRODUCT NAME

Einar® 401

APPLICATION

Anti-stat for impact copolymer PP

Anti-stat for PP foams

BRINGING GOOD THINGS TOGETHER

Palsgaard®

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.

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
- Produced in CO_2-neutral factories

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.

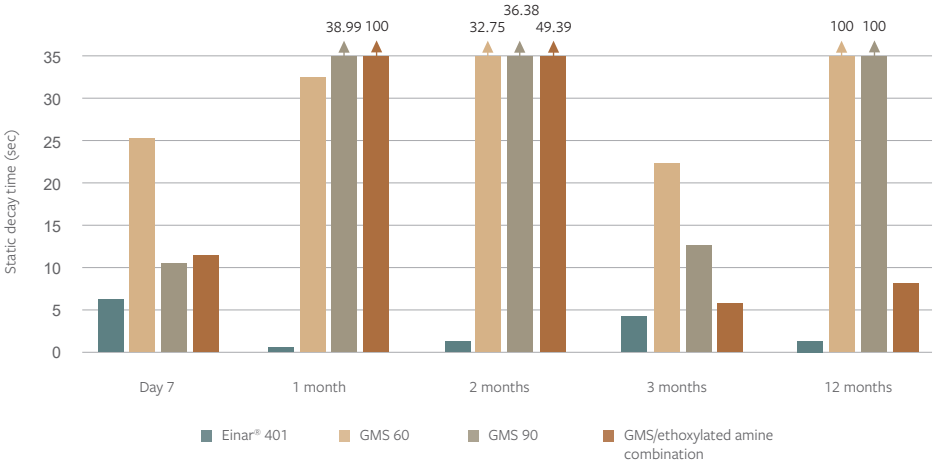
Recommended loading levels for impact copolymers are 0.5 - 1.0% for most applications but higher concentrations may be required in demanding thin-walled packaging.

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%



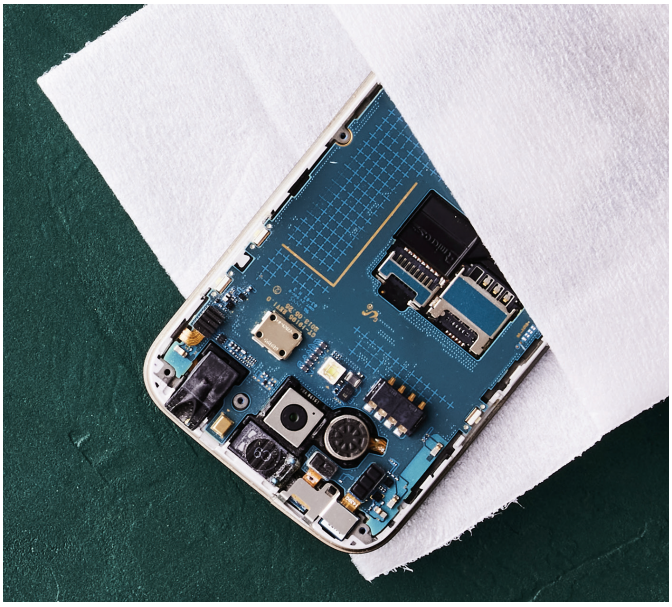
Einar® 401 has excellent long term anti-stat performance in impact copolymer PP

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 coplymer 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 or contact us via polymers@palsgaard.com