



Thermo Scientific Dionex IC columns and Thermo Scientific HPLC columns



Greener by design™



Responsibly packaged:
up to 48% less primary packaging material, FSC certified paperboard, and minimum 60% recycled content polyethylene foam

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Introduction

We are committed to designing our products with the environment in mind. This fact sheet provides the rationale behind the environmental claims that the Thermo Scientific™ Dionex™ ion chromatography (IC) columns and Thermo Scientific™ high-performance liquid chromatography (HPLC) columns have new packaging designs that contain up to 48% less primary packaging material, Forest Stewardship Council (FSC)-certified paperboard, elimination of all polyurethane foam, and a minimum of 60% pre-consumer recycled content polyethylene foam, relative to prior packaging configurations for these products.

Product description

Thermo Scientific Dionex IC columns are designed for a wide variety of IC applications, including anion- and cation-exchange, as well as amino acid and carbohydrate analysis. Many columns are available in a 4µm-particle size format for high-pressure separations, delivering greater resolution and faster run times. The portfolio also includes concentrator columns that enhance sensitivity and detection limits by retaining ions of interest and trap columns that remove interfering contaminants from the sample. Columns in this portfolio that meet the criteria described here include:

- Thermo Scientific™ Dionex™ IonPac™ IC columns
- Thermo Scientific™ Dionex™ CarboPac™ IC columns
- Thermo Scientific™ Dionex™ AminoPac™ IC columns
- Thermo Scientific™ Dionex™ IonPac™ trap columns
- Thermo Scientific™ Dionex™ IonPac™ concentrator columns

Thermo Scientific HPLC columns are designed to produce reliable, reproducible results, with a wide variety of chemistries to meet your HPLC separation needs. Our HPLC columns are available for the separation of all compound classes, including biomolecules. Each column type is available in a range of particle sizes and column formats so you can select the column best suited to your workflow. Columns in this portfolio that meet the criteria described here include:

- Thermo Scientific™ DNAPac™ HPLC columns
- Thermo Scientific™ Acclaim™ HPLC columns
- Thermo Scientific™ MAbPac™ HPLC columns
- Thermo Scientific™ GlycanPac™ HPLC columns
- Thermo Scientific™ DNASwift™ HPLC columns
- Thermo Scientific™ ProSwift™ HPLC columns
- Thermo Scientific™ OmniPac™ HPLC columns
- Thermo Scientific™ TurboFlow™ columns
- Thermo Scientific™ ProPac™ HPLC columns*

*Exception: Thermo Scientific™ ProPac™ 3R HPLC columns will maintain current packaging.



Dionex IC columns and HPLC columns

Responsibly packaged

The packaging for Dionex IC and HPLC columns has been re-designed to reduce the paperboard primary packaging and eliminate polyurethane foam inserts, replacing them with polyethylene foam inserts where needed. The primary packaging was re-designed to reduce the total material used by 40% for 15-100 mm column formats, 48% for 150-250 mm column formats, and 22% for 250-300 mm column formats (Table 1). The paperboard packaging is readily recyclable along with other paper-based materials. Additionally, the paperboard sourced and used in the new primary packaging designs is FSC chain-of-custody certified indicating that chain-of-custody requirements for traceability are met at every step in the supply chain. The FSC sets standards for responsible forest management to protect forests for future generations.¹ FSC certification helps ensure that products come from responsibly managed forests that

provide environmental, social, and economic benefits. FSC sets standards and criteria that are audited by third-party certification bodies.

The reduction of primary packaging material mass also resulted in a smaller total volume for the new packaging designs. The total volume was reduced by 45% for column formats between 15-250 mm, and 17% for column formats exceeding 250 mm (Table 2). As a result of these changes, the redesigned packaging requires fewer resources and generates less waste at the products' end-of-life.

The previously used polyurethane foam has been eliminated from the packaging configurations for column formats between 15 and 250 mm. The foam insert is still required to maintain the integrity and ensure safe transport for column formats exceeding 250 mm, so it was replaced with polyethylene foam inserts made from polyethylene foam containing a minimum of 60% pre-consumer recycled content.



New packaging for Dionex IC columns and HPLC columns

Table 1. Comparison of material types and mass of previous Dionex IC columns and HPLC columns primary packaging with the newly designed primary packaging.

Column format	Previous packaging			New packaging			Primary packaging material mass reduction with new design (%)
	Primary packaging component	Material type	Previous packaging material, mass (g)	Primary packaging component	Material type	New packaging material, mass (g)	
15-100 mm	Insert	Paperboard	39	Box lid	Paperboard	17	
	Box	Paperboard	45	Box base	Paperboard	33	
	Insert with box		84			50	40%
150-250 mm	Insert	Polyethylene foam	34	Box lid	Paperboard	30	
	Box	Paperboard	113	Box base	Paperboard	58	
	Additional insert	Polyurethane foam	21				
	Inserts with box		168			88	48%
250-300 mm	Insert	Polyurethane foam	21	Insert	Polyethylene foam	11	
	Box	Paperboard	106	Box lid	Paperboard	30	
				Box base	Paperboard	58	
	Insert with box		127			99	22%
Multiple products	Foam insert	Polyurethane foam	10		N/A	Removed	
	Foam pad	Polyurethane foam	10		N/A	Removed	
	Dionex Reference Library disc holder and reordering instructions	Paperboard	14		N/A	Removed	

Table 2. Comparison of Dionex IC columns and HPLC columns outer product packaging volume versus the new primary packaging design.

Column format	Previous product packaging volume (cm ³)	New product packaging volume (cm ³)	Packaging volume reduction with new design (%)
15-100 mm	835	459	45%
150-250 mm	1671	918	45%
250-300 mm	2753	2294	17%

Designing the Dionex IC columns and HPLC columns with less primary packaging material that is more sustainably sourced and readily recyclable is a win for our customers, our company, and the environment.

Reference

1. Forest Stewardship Council, <https://fsc.org/en>

 Find out more at thermofisher.com/iccolumns
thermofisher.com/lccolumns and thermofisher.com/biolc