

Medtronic

Smart Stapling System

for a sustainable future



Signia™ Stapling System generates up to

62% less^{1*}

contaminated and non-contaminated waste[†]

than the Ethicon Echelon Flex™ and Echelon Flex™ Powered Vascular Stapler used in traditional endoscopic procedures. The Signia™ Stapling System, with its technology and design, does not ignore the future of us all.



Signia™ Design

The Signia™ handle can be used for 300 procedures² and interchangeable adapters can be used for 50 procedures.³ A single-use Powershell is used for the patient in each procedure, and disposable reloads are used for each firing. Ethicon Endo Surgery staplers are intended for one procedure and include a battery operated stapler and disposable reloads for each firing.

Waste Reduction

Pulswerk Wien

Pulswerk GmbH is a consulting company of the Austrian Ecology Institute, an independent, ecologically oriented non-profit organization.

In order to investigate the effects of using stapling systems for endoscopy from Medtronic and Ethicon, the specialists from Pulswerk determined the contaminated and non-contaminated waste as part of an investigation in two common, extensive interventions.⁴

Contaminated waste compared to noncontaminated waste⁴

When considering the impact of the Signia™ Stapling System on reducing waste versus powered stapling systems, two areas need to be focused on:

- 1) Uncontaminated waste is anything that falls within the residual waste category and is easier to dispose of, i.e. product packaging.
- 2) Contaminated waste is all other waste that has been contaminated, i.e. system components that have come into contact with the patient.

When looking at the reusable elements of the Signia™ Stapling System, Pulswerk analyzed the component and packaging waste of each product and divided it by the process-related lifetime.

Thoracic Surgery

VATS Lobectomy – 62 % Less Waste^{1,4,*}

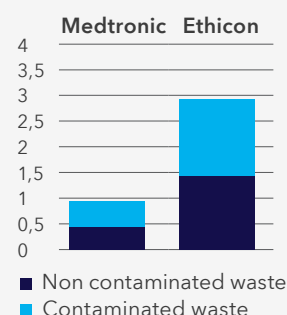
	Medtronic	Ethicon
General	1 × SIGPSHELL	
	1/300 × SIGPHANDLE	1 × PSEE60A
	1/50 × SIGADAPTSTND	1 × PVE35A
	1/2500 × SIGRIG	
	1/2500 × SIGSBCHGR	
Vessels	2 × EGIA30XXX	2 × VASECR35
Bronchus	1 × EGIA45XXX	1 × ECR60X
Parenchyma	4 × EGIA60XXX	4 × ECR60X

Bariatric Surgery

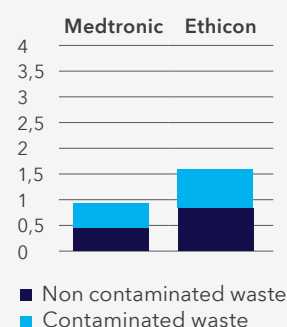
Gastric Bypass – 38 % Less Waste^{1,4,5,*}

	Medtronic	Ethicon
General	1 × SIGPSHELL	
	1/300 × SIGPHANDLE	1 × PSEE60A
	1/50 × SIGADAPTSTND	
	1/2500 × SIGRIG	
	1/2500 × SIGSBCHGR	
Gastric Pouch Creation	1 × EGIA45XXX 3 × EGIA60XXX	4 × ECR60X
Gastrojejunostomy	1 × EGIA30XXX	1 × ECR60X
Jejunostomy	1 × EGIA45XXX	1 × ECR60X
Separation of afferent and efferent loops	1 × EGIA45XXX	1 × ECR60X

Waste, proportion (kg)⁵



Waste, proportion (kg)⁵



* Total waste based on device component weights and expected circulation ratio of each component per procedure.

† in VATS lobectomies

1. M. Meissner, et al, Evaluating the Environmental Impact of Single-Use and Multi-Use Surgical Staplers with Staple Line Buttressing in Laparoscopic Bariatric Surgery, Risk Management and Healthcare Policy 2023;16 1423-1433
2. Based on internal test report RE00089336 Signia™ Powered Handle 303 Cycle Executive Summary Report
3. Based on internal test report RE00107846 Signia™ Linear Adapter Executive Summary Report
4. S. Lichtnegger, M. Meissner, Potential of waste prevention of reusable stapling systems by the example of Medtronic, 2019 Pulswerk
5. S. Lichtnegger, M. Meissner, Waste avoidance and resource conservation through multi-use surgical instruments using the example of Medtronic. 2019 Pulswerk

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Important: Please refer to the package insert for complete instructions, contraindications, warnings and precautions.

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Product Information

Codes	Description
SIGPHANDLE	Signia™ Power Handle
SIGPSHELL	Signia™ Powershell
SIGADAPTSTND	Signia™ Linear Adapter
SIGADAPTXL	Signia™ Linear Adapter XL
SIGADAPTSHORT	Signia™ Linear Adapter Short
SIGSBCHGR	Signia™ Single-Bay Charger
SIGRIG	Signia™ Reusable Insertion Guide
SIGMRET	Signia™ Manual Retraction Tool