

# Nunc Dishes, Multidishes, and 96-Well Plates with UpCell Surface



## 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™ Nunc™ Dishes, Multidishes, and 96-Well Plates with Thermo Scientific™ Nunc™ UpCell™ Surface are designed to generate up to 57% less plastic and cell culture reagent waste during harvest of adherent cells relative to comparable, traditional cell culture plastic products.

## Product description

Nunc Dishes, Multidishes, and 96-Well Plates products with the temperature-sensitive Nunc UpCell Surface support non-enzymatic harvesting of adherent cells for preservation of cell viability and surface proteins. Simply add tempered media and transfer the culture to room temperature to collect cells either in suspension or as a cell sheet using a supportive membrane. The hydrophilicity of the Nunc UpCell Surface transitions from hydrophobic to hydrophilic as the temperature drops from 37°C to below 32°C, allowing cells to detach so there is no need for dissociation enzymes and no physical scraping. The Nunc UpCell Surface enables harvesting of cells with high viability and intact surface proteins for culture passaging, single-cell analyses, and cell transplantation research.

## Green features

### Less waste

Traditional cell culture plastic vessels require use of dissociation enzymes to detach cells from the vessel surface, and this entails additional procedural steps that use disposable serological pipettes, pipette tips, cell culture media, and phosphate-buffered saline (PBS). Nunc Dishes, Multidishes, and 96-Well Plates with Nunc UpCell Surface do not require enzymatic harvesting and therefore require no dissociation enzymes or PBS while using fewer plastic consumables. This results in a reduction in costs and waste associated with the reagents used, lab plastics, and waste disposal.

A comparison of cell harvesting using Nunc Dishes, Multidishes, and 96-Well Plates with Nunc UpCell Surface versus traditional cell culture vessels showed that for harvesting of cells from each vessel there is a reduction of up to 57% in liquid reagents and plastics used or up to 28 g (Tables 1 and 2). With each vessel used, the reduction in waste can add up significantly.

Table 1. Comparison of liquid reagents and plastics used during cell harvest with a traditional cell culture multiwell dish vs. a multiwell dish with the Nunc UpCell Surface.

Procedure step	Traditional 6-well dish			Nunc UpCell Surface 6-well dish		
	Liquid used (mL)	Plastics used (quantity)	Mass (g)	Liquid used (mL)	Plastics used (quantity)	Mass (g)
1. Add PBS to rinse	12	–	12	0	–	–
2. Add Trypsin	3	–	3	0	–	–
3. Triturate with pipette and add cell media to inactivate	6	–	6	0	–	–
4. Add tempered media at 24°C	0	–	–	18	–	18
5 mL pipette	–	2	20.2	–	0	–
10 mL pipette	–	1	15.1	–	1	15.1
Total mass (g)	56.2			33.1		
Waste reduction				41.2%		

Table 2. Comparison of liquid reagents and plastics used during cell harvest with a traditional 96-well cell culture plate vs. a 96-well plate with the Nunc UpCell Surface.

Procedure step	Traditional 96-well plate			Nunc UpCell Surface 96-well plate		
	Liquid used (mL)	Plastics used (quantity)	Mass (g)	Liquid used (mL)	Plastics used (quantity)	Mass (g)
1. Add PBS to rinse	19.2	–	19.2	0	–	–
2. Add Trypsin	4.8	–	4.8	0	–	–
3. Triturate with pipette and add cell media to inactivate	19.2	–	19.2	0	–	–
4. Add tempered media at 24°C	19.2	–	–	19.2	–	19.2
5 mL pipette	–	24	7	–	8	2.3
Total mass (g)	50.2			21.5		
Waste reduction				57.1%		

Designing the Nunc Dishes, Multidishes, and 96-Well Plates with Nunc UpCell Surface to generate less liquid and plastic waste is a win for our customers, our company, and the environment.

 For more information, visit [thermofisher.com/upcell](https://thermofisher.com/upcell)

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