



**Sprint<sup>®</sup>**  
Rapid Protein Analyzer





## Revolutionary Protein Analysis

The Sprint® is an advancement for protein analysis based on a rapid green chemistry process allowing for direct protein detection in less than 5 minutes. It replaces the conventional Kjeldahl method for analysis of dairy and meat products. This patent-pending system, which uses iTAG® protein-tagging technology, identifies and measures only protein, not nitrogen, so you can be certain your results are accurate.

# Measure Protein, Not Nitrogen

Protein tagging is a proven technique in bioscience applications. CEM brings this valuable tool to the food industry. Sprint utilizes CEM's proprietary iTag technology, which attaches to the protein itself for an accurate, direct measurement. With Sprint, you can be certain your results are not affected by naturally occurring nitrogen or adulterants, because only the protein is tagged and measured, not the nitrogen.

Sprint's iTag technology only tags the amino acids commonly found in proteins: histidine, lysine and arginine. Total nitrogen techniques based on Kjeldahl and Dumas measure all sources of nitrogen, which contributes to protein measurement errors.

- Direct method for protein conversion
- Remarkably easy to use
- No hazardous chemicals
- Convenient, disposable sample cups and filters
- Safer and less expensive than Kjeldahl
- More repeatable than Kjeldahl and combustion techniques
- Fast analysis of all types of food
- Automates AOAC official methods 967.12, 930.33, 930.29, and 2011.04
- Downloadable iMethods®
- Uses green technology

## Easy-To-Use



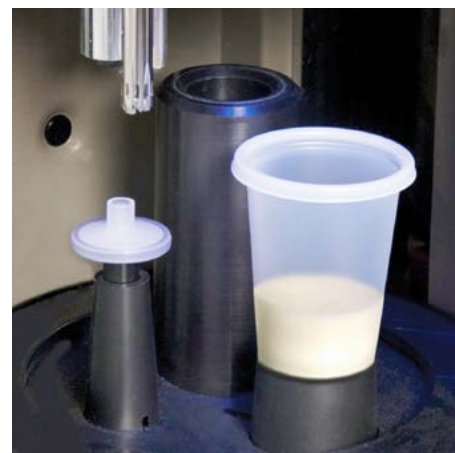
1

Choose your method.



2

Weigh your sample into the disposable cup.



3

Place it in the Sprint with a filter and press **Start**.

## iMethods for Easy Set-Up

Sprint comes pre-programmed with a broad selection of methods ready for use in your laboratory. With its truly innovative software, loading a method and analyzing samples on your Sprint is no more complicated than finding a number and calling a friend on your cell phone. Sprint stores hundreds of methods and tens of thousands of sample results.

### Downloadable Methods

Many Sprint methods are available on our website. Visit us at [www.cem.com](http://www.cem.com) to download a method to your Sprint. If your method is not listed, simply call us! Our applications chemists have experience with a variety of sample types.

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**GREEN TECHNOLOGY**   
No Hazardous Waste for Disposal

The sample and Sprint's non-toxic iTag solutions are environmentally friendly. Sprint generates no hazardous waste at all. So, not only do you enjoy better results, you help make your workplace safer for your team and the environment.

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## Pre-programmed Methods Available

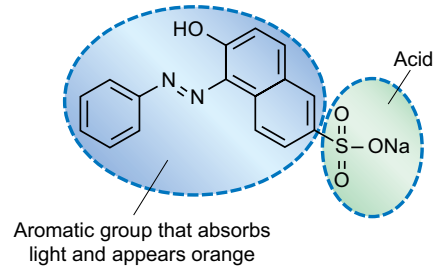
Beef	Turkey	Milk (whole milk powder)	Sour Cream
Beef Liver	Chili	Condensed Skim Milk	Yogurt
Chicken	Tofu	Heavy Cream	Whey (acid, rennet)
Chicken Liver	Hummus	Infant Formula	Wheat Flour
Ham	Soybeans	Cheese (natural)	Nutritional Drinks
Hot Dogs	Eggs (whole, yolk, whites)	Cottage Cheese	Soy Beverages
Pork	Milk (fluid product, chocolate)	Cream Cheese	Wet Pet Food
Sausage	Milk (non-fat powder)	Ice Cream	<i>Plus Others</i>

# How Sprint Works

All proteins contain amino acids. The basic amino acids that are found in foods are Arginine, Histidine and Lysine.



CEM's proprietary iTag solution binds to these three amino acids using an acid group. The aromatic portion of the molecule absorbs light and is easily detected with a colorimeter.



A pre-determined amount of iTag solution is added to a sample and homogenized to release the proteins. The iTag molecules bind to the proteins and are removed from solution. The remaining iTag is drawn up through a disposable filter into the built-in colorimeter. The amount of iTag bound to the protein is determined and the results displayed. The entire process takes only 2 to 3 minutes for most samples and yields results that are more accurate than Kjeldahl or combustion techniques.



# True Protein at the Touch of a Button

- Incentive to adulterate ingredients is removed
- Security of food supply is improved
- A wide variety of samples can be tested easily
- Raw material pricing is more accurate
- Improved Process control with rapid 4-minute testing
- Least cost formulations are more easily achieved

Melamine is not an obstacle for Sprint, as the system simply ignores all sources of non-protein nitrogen (NPN). As seen in the chart below, Sprint displays the true protein results for samples containing melamine. With Sprint, you can be confident that you are measuring protein and nothing else.

	KJELDAHL	Sprint
Fluid Milk	3.3	3.3
Fluid Milk with 0.1% added Melamine	3.7	3.3
Fluid Milk with 0.5 % added Melamine	5.1	3.3
Fluid Milk with 1.0 % added Melamine	8.6	3.4



Simple and Convenient

## Sprintpak®

Sprint uses disposable sample cups and filters which are packaged conveniently with iTag solutions.

Each Sprint Pak contains:

- 50 disposable cups with lids
- 50 disposable filters
- iTag solutions for 50 tests

Quick and Easy

## Clean-up

Sprint self-cleans its internal components. At the conclusion of every analysis, all non-toxic sample waste as well as the disposable filter and cup are removed and discarded.





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CEM has been an ISO-certified facility since 1994



All systems serviced & supported by experts with an average of 15 years of experience



CEM invests 12% of annual revenue into R&D, the result... 11 R&D 100 awards



IQ/OQ/PQ Validation by certified CEM Technicians

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