



AMERICAN  
**Dairy Products**  
INSTITUTE™

# WPI

## Whey Protein Isolate (90%+)

WHEY PROTEIN

### Product Definition

Whey Protein Isolate (WPI) is obtained by the removal of sufficient non-protein constituents from whey so that the finished dry product contains at least 90% protein on a dry matter basis. It is produced by membrane filtration processes and/or ion exchange.

Whey Protein Isolate complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

### Composition

PARAMETER	UNITS OF MEASURE	WPI	
		TYPICAL VALUES	LIMITS
PROTEIN, DRY BASIS	%	90.0 – 92.0	89.5 minimum
LACTOSE	%	0.5 – 1.0	–
FAT	%	0.5 – 1.0	1.5 maximum
TOTAL MOISTURE	%	4.0 – 5.0	6.0 maximum
ASH	%	2.0 – 3.0	–

### Nutrition Facts

servings per container	
<b>Serving size</b>	<b>(100g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>370</b>
% Daily Value*	
<b>Total Fat</b> 0.5g	<b>1%</b>
Saturated Fat 0g	<b>0%</b>
Trans Fat 0g	
<b>Cholesterol</b> 5mg	<b>2%</b>
<b>Sodium</b> 170mg	<b>7%</b>
<b>Total Carbohydrate</b> 3g	<b>1%</b>
Dietary Fiber 0g	<b>0%</b>
Total Sugars 3g	
Includes 0g Added Sugars	<b>0%</b>
<b>Protein</b> 88g	
Vitamin D --mcg	--%
Calcium 532mg	<b>40%</b>
Iron 1mg	<b>6%</b>
Potassium 498mg	<b>10%</b>

\*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

### Other Characteristics

PHYSICO-CHEMICAL PROPERTIES		
PARAMETER	UNITS OF MEASURE	LIMITS
SCORCHED PARTICLES	mg	15.0 maximum
COLOR	visual	cream
FLAVOR	sensory	bland, clean

### Permissible Additives

Whey Protein Isolate may be pH adjusted with an appropriate mineral or organic acid or base. Any pH adjustment agent used for this purpose shall be food grade and shall be used in accordance with U.S. current Good Manufacturing Practices and in accordance with its GRAS status, where applicable.

### Product Labeling

Recommended identifications: Whey Protein Isolate

#### Protein Quality

Protein Digestibility Corrected Amino Acid Score (PDCAAS)..... **1.00**

Digestible Indispensable Amino Acid Score (DIAAS)..... **1.09**

## Functionality and Applications



### HIGH PERFORMANCE:

Hydration Rate  
Gelation  
Whipping  
Acid Stability



### MEDIUM PERFORMANCE:

Emulsification  
Water Binding

Whey Protein Isolate is typically used for protein fortified foods where minimal lactose and fat are desired. It is a highly soluble protein source with low water binding and high foaming ability. It has excellent heat stability in high acid beverages and other high acid foods, especially below pH 3.5. It is more susceptible to denaturation in high heat processes above pH 3.5.

## Product Examples

(launched in the last 2 years)

*Credit: Innova Market Insights*



**Protein Pints High Protein Dessert:** High protein desserts are a great way to make a decadent treat more nutrient dense. WPI contributes 30g of high quality protein to this chocolate dessert.



**Chike Iced Coffee High Protein:** High protein ice coffee is a great option to provide some energy during your day while also supporting your muscle health. WPI combined with WPC provides 20g of high quality protein per serving.



**Proper Good Flavored Overnight Oats:** Adding protein to breakfast is a great way to start your day. WPI provides 15g of high quality protein to this popular oat based breakfast food.



**Gatorade Zero Sugar Protein Thirst Quencher:** Isotonic drinks with added protein provide a dual benefit of muscle recovery and hydration. WPI is the right choice for this high acid, hot fill beverage because of its good solubility and heat stability at low pH.



**Oath Nutrition Clear Whey Protein Dietary Supplement:** This clear whey protein powder mix benefits from the ability of WPI to make clear beverages at low pH. Its clarity combined with a lemonade flavor makes it a refreshing drink with high quality protein.



**Designer Wellness Protein Smoothie:** This shelf stable smoothie offers 12g of protein all from WPI. WPI provides the solubility and heat stability necessary in a high acid beverage.



**Icon High Protein Almond Butter:** This high protein almond butter is a good example of how dairy can enhance plant-based foods. WPI provides a much higher quality protein giving this protein butter with 35% protein, 10g of protein per serving as compared to a typical almond butter with 21% protein.