



***Consworld***

di Savoi Massimo

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## Yield and quality tests : **Protein powder**

From: Cow's milk whey,  
a leftover from Beaufort cheese manufacturing

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Valgo Italia S.r.l.

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Test description

## Step 1

Whey is conveyed to skimmer and the cream obtained is supplied to butter manufacturing

## Step 2

Skimmed whey is filtered through selective membranes UF and RO and a 30% of total solid concentrate is obtained.

Proteins are 24% of total mass, equivalent to 80% of available solids. For convenience of transport, concentrate is stored in buckets and kept at 4°C for 2 days



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Test description

## Step 3

Concentrated whey is pre-heated at 60°C

## Step 4

Concentrated whey is pumped and atomized at 170 bar into a tunnel where clean air heated at 190°C is insufflated.

Immediately after, water evaporates and solids in form of powder fall to the ground



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Test description

## Step 5

Atomized whey is conveyed through hot air and solids immediately get separated from water

## Step 6

80% of powder falls to the ground and is supplied to collection hopper  
The remaining 20% in the production process is gathered in filters and supplied to hopper



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Test description

## Step 7

Powders containing 80% of proteins with 3>4% average humidity are cooled down to avoid compacting after packaging

## Step 8

Powders fall by gravity into bags arranged to give customers a representative and replicable sample on industrial installation



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Test description

## Step 9

Quality check on powders produced  
Max uniformity ensured both in color  
and grain size all over test  
production

## Step 10

Storage in a clean and suitable  
room-tempered environment  
without artificial cooling keeps  
product features unchanged for  
several months



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Test description

Example of an OPERATIONAL PLANT

Working capacity: 1000 kg per hour

Concentrate: 25% of solids

Evaporation of 750 litres water per hour

*Production*

250 kg of WPC 80 per hour

2064 kg per 8-hour shift



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