

APV LeanCreme™ Process

- IN CHEESE MANUFACTURING

Process Description

After pre-treatment, the whey is concentrated in a UF system to produce WPC 60. The WPC 60 is then treated by the APV LeanCreme™ microparticulation process before entering the cheese plant.



PROCESS BLOCK DIAGRAM AND MASS BALANCE

1,000 KG CHEESE WHEY

PRE-TREATMENT
- FINES REMOVAL
- FAT REMOVAL
- PASTEURISATION AT 72°C/15 SEC.
- COOLING TO 8 - 10°C

ULTRAFILTRATION AT 10°C

940 KG PERMEATE

60 KG RETENTATE: WPC60

IF REQUIRED, STORAGE AT 6 - 8°C

PRE-HEATING IN PHE

HEATING IN ASA

HOLDING

COOLING IN ASA

COOLING IN PHE

60 KG LEANCREME PRODUCT

Compositions

CHEESE WHEY	
TOP	0.80%
LAC	4.49%
ACD	0.15%
ASH	0.50%
FAT	0.06%
TS	6.00%

PERMEATE	
TOP	0.22%
LAC	4.57%
ACD	0.15%
ASH	0.48%
FAT	0.00%
TS	5.42%

RETENTATE	
TOP	10.08%
LAC	4.15%
ACD	0.14%
ASH	0.76%
FAT	1.00%
TS	16.13%

LEANCREME PRODUCT	
TOP	10.08%
LAC	4.15%
ACD	0.14%
ASH	0.76%
FAT	1.00%
TS	16.13%

PROCESS FEATURES

- The APV Shear Agglomerator (ASA) is a groundbreaking scraped surface heat exchanger designed specifically to create the unique functionality of APV LeanCreme™ microparticulated whey protein
- Single step microparticulation of whey proteins with combined heating and shear in the ASA
- Precise control of degree of denaturation and particle size distribution
- Up to 8 hours of running time before cleaning
- Low fouling
- High consistency and reproducibility

PROCESS ADVANTAGES

- Flexible process enabling the use of a wide variety of types and grades of WPC from WPC 28 to 80, including evaporated WPC
- Enables customisation of APV LeanCreme™ product for specific customer processes and special cheese characteristics
- Very short pay-back time
- Unmatched numbers of industrial references

APV LEANCREME™ IN CHEESE

- WPC 60 is recommended for cheese production
- LeanCream products can be used for EPC, pressed, semi-hard and fresh cheeses
- The customised APV LeanCreme™ product is added to the cheese milk before pasteurisation
- Level of addition: 2 – 8% v/v APV LeanCreme™ product, depending on fat content in the cheese
- Impact on cheese making:
 - Up to 85% microparticulated whey proteins trapped in the cheese
 - Increased yield
 - Increased water-binding properties
 - Enhanced cheese sensory properties
 - Easy to cut and handle in prepress
 - Meltability preserved

The APV LeanCreme™ Team is ready to provide expert technology and application support. You can also take advantage of a short-term project agreement with our Innovation Centre in Silkeborg, Denmark, in order to ensure successful piloting of your new APV LeanCreme™ process.



SPX Flow Technology, Pastervej 1, 8600 Silkeborg, Denmark

P: +45 70 278 278 F: +45 70278 330

For more information about our worldwide locations, approvals, certifications, and local representatives, please visit www.spx.com.

SPX Corporation reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing.

APV-16001-GB Version: 02/2013 Issued: 01/2013 COPYRIGHT © 2012, 2013 SPX Corporation