Tetra Centri®

The original dairy centrifuge

Tetra Pak

More than the package™

Tetra Centri dairy separators for every duty

Centrifugal separation in Tetra Pak has a proven track record for processing efficiency stretching back more than a century. This tradition continues in today's range of energy-efficient models with high quality standards for a wide spectrum of applications.

The Tetra Centri Air-Tight® technology features a completely filled separator bowl. An advanced in- and outlet design ensures gentle treatment during the entire separation process.

Milk clarification

Although the main aim is to remove milk impurities, this processing stage also reduces the levels of leucocytes and bacteria.

Tetra Centri clarifiers can process cold milk below 8°C, or hot milk at 50 – 60°C.

Tetra Centri® Milk clarifiers

	Max. flow rate, l/h	Sediment space, l	Rated motor power, kW
D 407 SGP	10 000	4	11
D 510 SGD	20 000	9	18,5
D 610 HGD	25 000	7	18,5
D 413 SGV	30 000	15	18,5
D 714 HGV	35 000	12	22
D 618 HGV	60 000	21	37
D 617 SGV	75 000	25	37/45

Cold milk separation

Cold milk separation at 4 – 5°C is the alternative when heating milk is undesirable. Cream's viscosity and characteristics at low temperatures make the Air-Tight technology the only feasible form of separation for this task.

The fat content of the skimmilk can vary between 0,1 – 0,2%, and the maximum fat content of the cream at 4°C is generally 45%.

Tetra Centri® Cold milk separators

	Flow rate, l/h		Rated motor power, kW
	Skimming	Stand.	
C 614 HGV	5 000	15 000	18,5
C 714 HGV	10 000	20 000	22
C 518 HGV	15 000	25 000	22
C 618 HGV	20 000	30 000	25

Hot milk separation

The objective is to separate the globular milk fat from the serum, the skimmed milk. The separation process is normally incorporated into a pasteurisation line and combined with a Tetra Alfast in-line fat standardisation system. Outgoing cream from Tetra Centri Air-Tight separators can contain up to 70% fat.

The skimming efficiency of hot milk separators has been enhanced. In a modern dairy, common Tetra Centri skimming efficiency figures are in the region of 0,045 – 0,06%.

Tetra Centri® Hot milk separators

	Flow rate, l/h		Rated motor power, kW
	Skimming	Stand.	
H 407 TGP	5 000	7 000	11
H 510 TGD	7 000	10 000	15
H 610 HGD	10 000	15 000	18,5
H 614 HGV	15 000	25 000	18,5
H 714 HGV	20 000	30 000	22
H 518 HGV	25 000	35 000	22
H 618 HGV	30 000	40 000	25
H 718 HGV	35 000	55 000	25
H 818 HGV	45 000	60 000	37

Bactofugation

The Tetra Centri Bactofuge® is used to decrease the bacteria and spores content of milk prior to heat treatment in order to improve the thermal impact.

The bactofugation process, traditionally incorporated in the pretreatment of cheese milk, is also effective in enhancing the quality of powders. The raw milk intended for consumption milk and cream is in many dairies also bactofugated.

Bactofugation efficiency is stated as a percentage reduction of the incoming level of bacteria and spores. Generally, the efficiency ranges between 98 – 99,5% for anaerobic spores.

Tetra Centri® Bactofuge®

	Flow rate, l/h nominal	Flow rate, l/h max	Rated motor power, kW
BB 610 HGD	5 000	10 000	18,5
BM 714 HGV	15 000	15 000	22
BB 714 HGV	15 000	25 000	22
BM 618 HGV	25 000	25 000	25
BB 618 HGV	25 000	45 000	25
BB 818 HGV	35 000	45 000	37

Whey clarification

To maintain optimum fat separation, cheese fines should be removed from the whey before it reaches the whey cream separator. Installing a centrifugal clarifier ahead of the whey separator is the most efficient way to take away cheese fines.

Flow rate and fines content are important parameters for the choice of clarifier.

Tetra Centri® Whey clarifiers

	Flow rate, l/h	Sediment space, l	Rated motor power, kW
D 407 SGP	10 000	4	11
D 510 SGD	20 000	9	18,5
D 610 HGD	25 000	7	18,5
D 413 SGV	30 000	15	18,5
D 714 HGV	35 000	12	22
D 618 HGV	60 000	21	37
D 617 SGV	75 000	25	37/45

Whey cream separation

Whey contains a small percentage of fat varying between 0,15 – 0,40%. This fat must be removed before further processing.

The whey characteristics differ from milk making conditions for whey separation more favourable. If the whey is preclarified, skimming efficiency can be expected to be down to 0,03%.

Tetra Centri Air-Tight whey separators can produce high-fat cream with a fat content above 30% at temperatures below 35°C.

Tetra Centri® Whey cream separators

	Flow rate, l/h Pre-filtered	Flow rate, l/h Pre-clarified	Rated motor power, kW
H 407 TGP	5 000	5 000	11
H 510 TGD	7 000	7 000	15
H 610 HGD	10 000	11 500	18,5
W 614 HGV	15 500	16 500	18,5
W 714 HGV	20 000	22 000	22
W 518 HGV	25 500	27 500	22
W 618 HGV	30 000	33 000	25
W 718 HGV	35 500	38 000	25
W 818 HGV	45 000	50 000	37

Anhydrous milk fat

Anhydrous milk fat (AMF), obtained from fresh raw material, has a milk fat content exceeding 99,8%. Milk fat is concentrated in several steps up to 99,5%, and is then vacuum-treated. The raw material – milk, cream or butter – determines the number of steps required.

Stored butter does not need pre-concentration or buttermilk reseparation. Fresh butter still contains globular fat, and therefore requires a process incorporating buttermilk reseparation.

Tetra Centri® AMF separators

Line capacity kg oil/h	Pre-concent.	Final concent.	Buttermilk reseparation
2 000	H 614 HGV	A 610 HGD	H 610 HGD
2 500	From stored butter	A 610 HGD	
4 000	H 618 HGV	A 614 HGV	H 614 HGV
5 000	From stored butter	A 614 HGV	
6 000	H 518 HGV+ H 614HGV	A 714 HGV	H 614 HGV
8 000	From stored butter	A 714 HGV	
14 000	From stored butter	A 618 HGV	
14 000	H718 HGV+ H 718 HGV	A 618 HGV	H 518 HGV

Buttermilk separation

For separation purposes, buttermilk derived from butter production is classified as either sweet or sour.

In the separation of sweet buttermilk, a standard hot milk separator is used at its nominal flow rate.

Sour buttermilk contains unstable proteins. Consequently, the general guideline is to use a whey or cold milk separator and process at half the nominal flowrate.

A fat content of 0,2 – 0,3 % in the buttermilk is common after separation.

Quarg production

Quarg is a fresh cheese made from coagulated skimmilk. In non-fat quarg, the solids content normally ranges between 14 – 22 %.

The customary separation temperature is 28°C, and takes place immediately after fermentation. Efficiency is calculated in terms of total yield between 3,7 – 4,2 kg milk/kg quarg.

Tetra Centri® Quarg separator

	Feed max, kg/h	Rated motor power, kW
Q 517 SGV	10 000	37

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