TERLOTHERM®

Scraped surface heat exchanger

Soups and sauces

Products

- Condiments
- Salad dressings
- Mayonnaise
- Ketchup
- Chunky sauces
- Ragouts
- Thick soups
- Cream soups

Applications

- Setting starch mixtures
- Coulli preparation
- Pasteurizing and cooling

www.terlotherm.com

terlet

MEMBER OF THE MPE GROUP






TERLOTHERM® Applications in the food industry

Production of soups and sauces

Cooking and cooling of starch preparations; coulli

The TERLOTHERM developed by Terlet is used in sauce preparation for, among other things, allowing starchy mixtures to set by boiling and cooling them. The set starch solution (coulli) partly replaces the oil in, for instance, mayonnaise, salad dressing and other dressings.

Process

The TERLOTHERM is very suitable for preparing starches. In the first step, one or more Terlotherms heat the starch solution to above the setting temperature. The starch preparation process benefits from the specific advantages offered by the TERLOTHERM. The virtually lump-free flow and even heating guarantee a uniformly swollen starch base.

If required, a heater can be integrated into the system after the heating phase. Whether or not this is necessary depends on the starches setting speed and the requirements of the microbiological state of the product. Steam of 3 bar is generally used as a heating medium.

After heating, the mixture is cooled down in one or more TERLOTHERMS to approximately 20°C (68°F). Again, the advantages of the TERLOTHERM contribute to creating a high-quality product.

The structure of the starch, resulting from the set starch, remains fully intact because of the "product-friendly" cooling method used. Ice water or glycol is used as a cooling medium.

The system can be integrated into a continuous sauce preparation system. Another possibility is to let this system produce sauce base in batches for further processing for continuous sauce production. The line can also be used for the pasteurization and cooling of ketchup. In practice, the system is often used for producing cold emulsified sauce (e.g. mayonnaise) and ketchup simultaneously, as the "starch line" becomes available for the pasteurization and cooling of ketchup.

Heating and cooling soups and sauces

The TERLOTHERM is used for the in-line heating and cooling of various soups and sauces In principle, the sauce can be pre-mixed while cold and subsequently prepared in a completely continuous process.

Process:

The various ingredients of the soup are prepared in a Terlet MMR mixing tank. The sauce is subsequently piped in-line through one or more heating TERLOTHERMS, the heated reservoir and one or more cooling TERLOTHERMS. In general, heating is done using steam and cooling takes place using ice-cold water, glycol or ammonia.

The preparation process can be carried out under completely aseptic conditions. In the latter case, rinsed seals are used. The line is fitted with steam connections in the production area to facilitate sterilisation before production commences. Carbon Dioxide or sterilised air is used to keep the product under pressure. In practice, combinations of various Terlet sauce vessels are used in the preparation of the sauce, followed by TERLOTHERMS to achieve the necessary cooling.

The TERLOTHERM is the only continuous heat exchanger that can cool or heat soups and sauces with very large solid components without damaging these components or the structure of the product.

The whole system can be connected to a CIP cleaning unit.

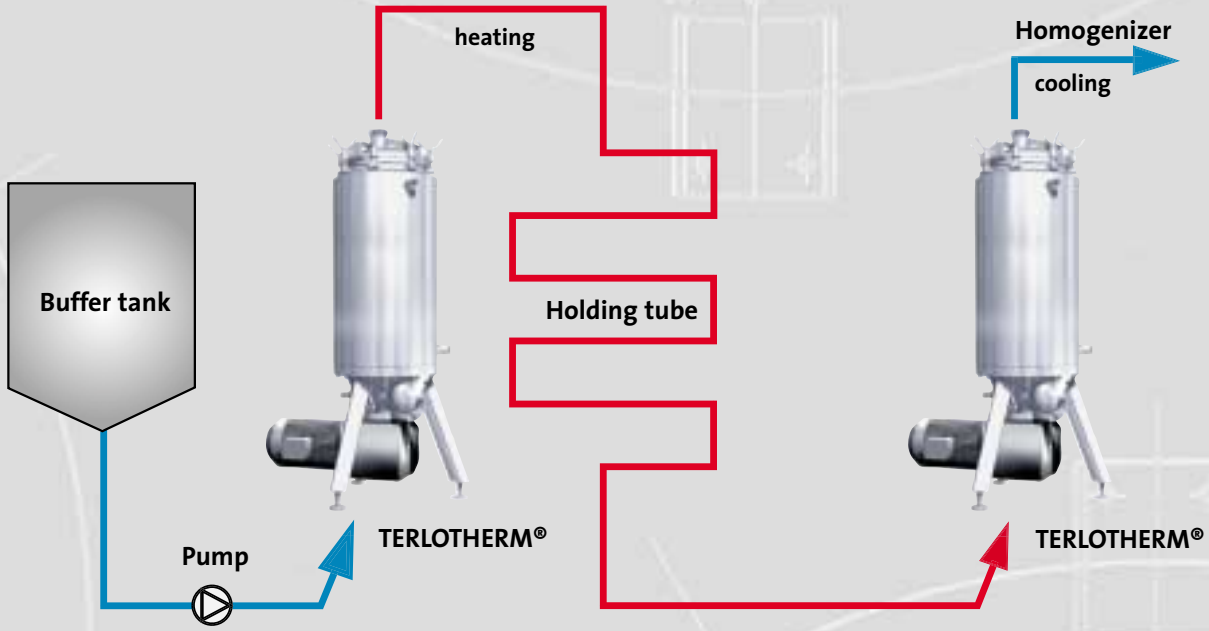
Advantages of TERLOTHERM® for starch preparation:

- High heat exchange capacity, up to 4,500 kg/h in one machine;
- Virtually lump-free, resulting in uniformly set starch solutions;
- No damage to the structure;
- Compact design
- High heat exchange capacity
- Aseptic processing
- Whole parts, up to 25 mm, remain undamaged






TERLOTHERM® and your process



TERLOTHERM® advantages and applications

Advantages

- Scrapers can easily be replaced
- Can be CIP cleaned
- Inspection without removing seal
- Lid can be opened with clamps
- Large heating area on limited floor area
- Tangenitial inlet
- Acceleration and deceleration area
- No damage to product
- Maintenance-friendly; only one seal and one drive

Applications

- Heating
- Aseptic cooling
- Deep-cooling
- Crystallisation
- Tempering
- Sterilization
- Pasteurization
- Polymerization
- Gelling

TERLOTHERM® Technical information

Type	Number of scrapers	Heated surface in m²	Number of scraper rows	Total height in mm ca.	Cylindrical height in mm ca.	Ground Clearance in mm ca.	External diameter in mm ca.	Product inlet in NW	Product outlet in NW	Medium inlet interior cylinder inch	Medium inlet external cylinder inch	Medium outlet interior cylinder inch	Medium outlet external cylinder inch	Rinse / leak detection pipes in mm	Product space in mm	Scraper peripheral velocity in metre/second	Maximum drive capacity in Kw	Product temperature range from to in °C	Maximum product area pressure in bar g	Cooling & heating medium in m³/hour	Product volume in litres
T1/2	8	0,6	4	1108	552	556	423	50	50	3/4	1	3/4	1	8	50	0,5-3,0	4,0	0-150	5 of 10	5-8	20
To-4	16	1	4	1427	871	556	423	50	50	3/4	1	3/4	1	8	50	0,5-3,0	4,0	0-150	5 of 10	5-8	30
T1-4	24	2,4	4	2015	1340	675	573	80	80	1	1 1/2	1	1 1/2	8	50	0,5-3,0	17,0	0-150	5 of 10	10-15	70
T1-6	36	2,4	6	2015	1340	675	573	80	80	1	1 1/2	1	1 1/2	8	50	0,5-3,0	17,0	0-150	5 of 10	10-15	70
T2-4	32	4,4	4	2460	1690	770	723	80	80	1 1/2	2	1 1/2	2	8	50	0,5-3,0	22,0	0-150	5 of 10	20-25	130
T2-6	48	4,4	6	2460	1690	770	723	80	80	1 1/2	2	1 1/2	2	8	50	0,5-3,0	22,0	0-150	5 of 10	20-25	130

Applied heating media:
Steam and water

Applied cooling media:
Water, ice water, brine, glycol and ammonia

TERLOTHERM® types

Terlet International
P.O. Box 62, 7200 AB Zutphen
The Netherlands
T: +31 575 593 100 **F**: +31 575 593 111
I: www.terlet.com **E**: info@terlet.com

Terlet USA
6981 North Park Drive
East Bldg., Suite 201, Pennsauken, NJ 08109
T: +1 856 317 9960, **F**: +1 856 317 9963
E: info@mpegroupusa.com

terlet
MEMBER OF THE MPE GROUP