



CeraMem[®]

ALSYS Group

Industrial Ceramic Membrane Systems

INDUSTRIAL LAUNDRIES

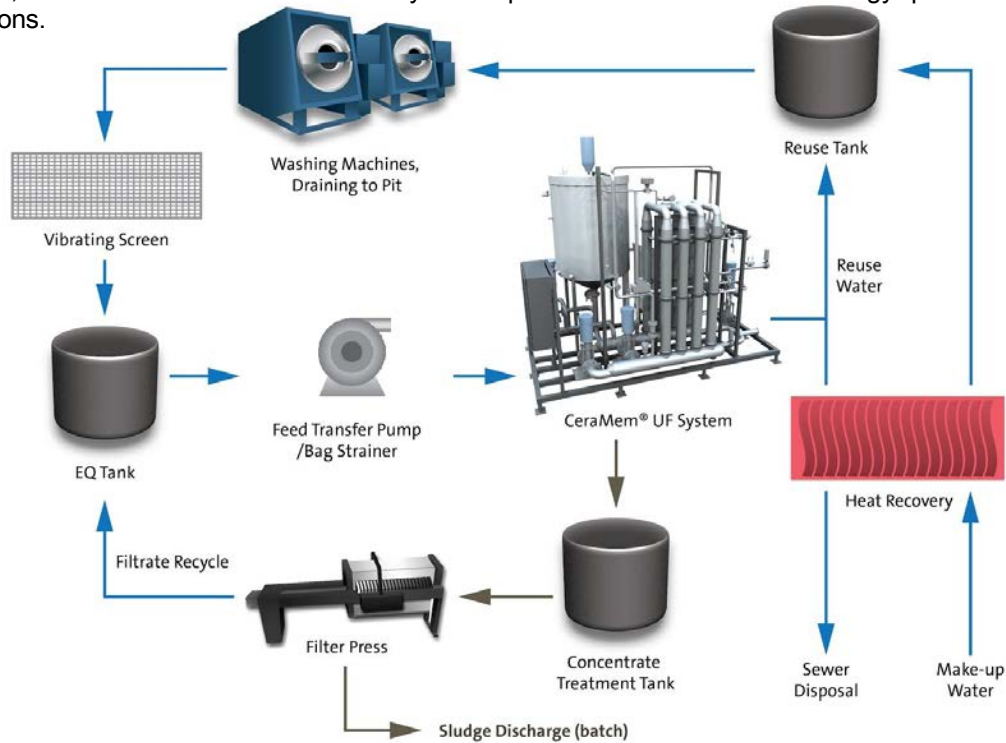


WATER &
MEMBRANES

Unique Laundry Effluent Treatment System Using CeraMem® Ceramic Membranes

Water is one of the most critical components in industrial laundries. It can be costly to both provide the high volumes of fresh water required and to dispose of detergent-laden wastewater. As laundries become increasing efficient, a higher level of automation is also required.

CeraMem® ceramic membranes have been used to treat laundry wastewater for more than 25 years. CeraMem LLC has developed a range of systems that offer substantial savings in water, power consumption, detergent, and sewer costs. CeraMem systems provide an effective technology platform for laundry applications.



Modular, Automated, and Fully Integrated

The system supplied is a compact, modular unit with flexible features and capabilities that can be fully integrated into each unique laundry.

The pre-engineered, modular system can be adapted to provide solutions for different laundries' requirements.

SYSTEM FEATURES

Pre-engineered, skidded system

Flexible capacity from 40 gpm to over 150 gpm

Modular design allows for 8, 12, and 16 module installations

Plug and play skid is supplied with membranes, housings, CIP and CEB tanks, CIP mixer, pumps, and basket strainer

Reverse flow feature allows for periodic lint removal

Fully automatic operation requires minimum operator input and time

316 stainless steel piping

HIGH RECOVERY RATES

- 95% of the incoming wastewater can be converted into oil- and solid-free permeate
- The water balance of the overall facility is limited by the dissolved ions: about **50-70%** can be recycled with a CeraMem system
- A RO system can be added to remove dissolved ions (such as chlorides) to achieve up to a 90% overall recovery

CeraMem® Technology

Offering high performance in harsh operating conditions



BENEFITS

- Able to remove both oil & grease and suspended solids
- Resistant to oxidizing agents normally found in laundry wastewater
- High temperature resistance saves energy by allowing clean permeate to be used while >40°C
- Long membrane lifetime
- Small footprint
- Lower lifecycle costs than polymeric membranes

Laundry Market Experience

CeraMem's experience in laundry effluent dates back to 1991 and includes many references specific to this application. Typical performances are provided below:

PERFORMANCE DATA: HEAVY LAUNDRY SYSTEM

Parameter	Feed [ppm]	Permeate [ppm]	Removal Rate
Oil & Grease	1,100	15.2	98.6%
BOD	253	27	89.3%
COD	4,820	165	96.6%
TSS	254	<1	>99.6%
Lead	0.3	0.08	73.3%
Calcium	11.6	4.7	59.9%
Zinc	1.3	0.2	88.0%
Iron	8.9	0.1	99.4%



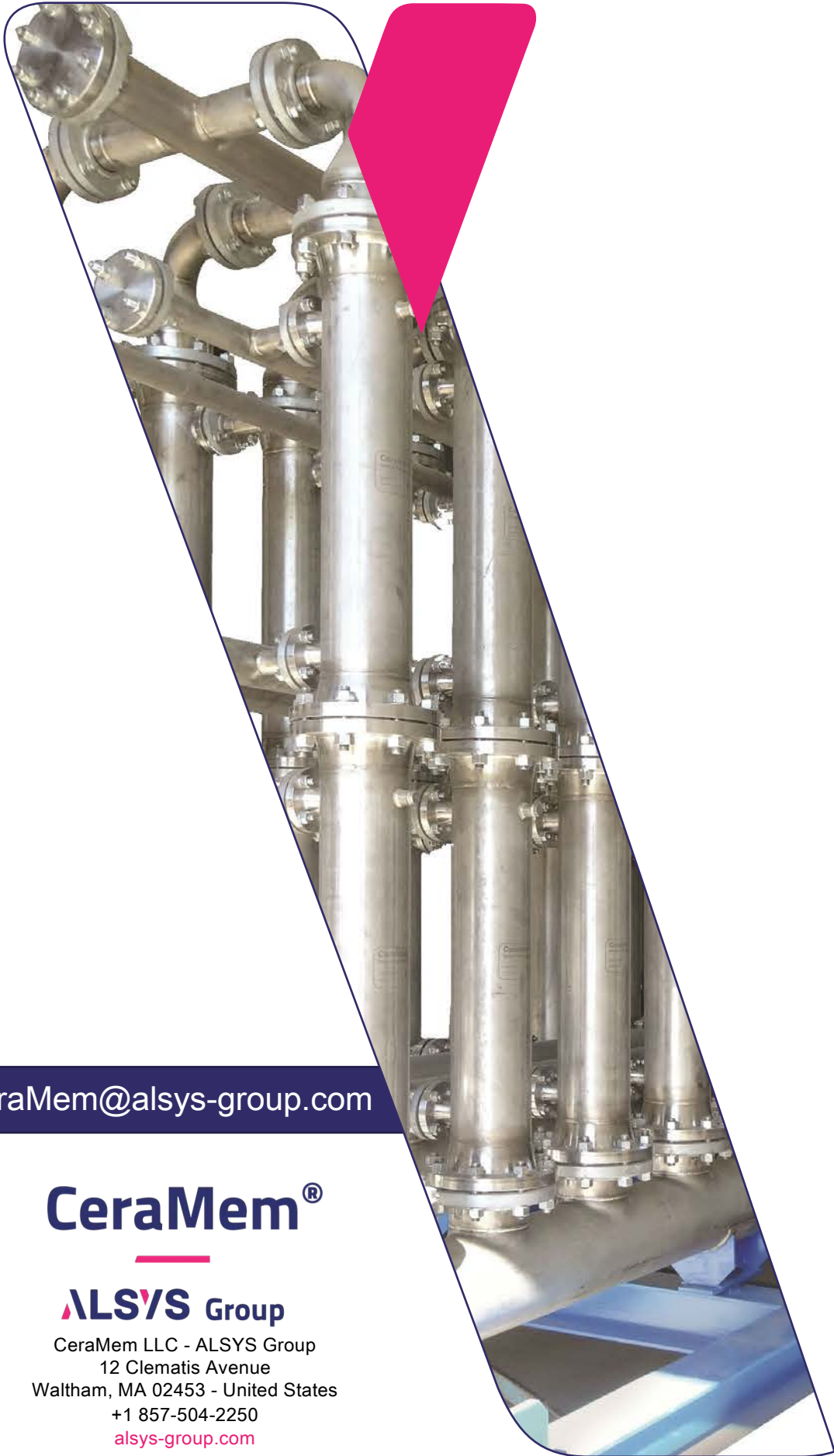
PERFORMANCE DATA: LIGHT LAUNDRY SYSTEM

Parameter	Feed [ppm]	Permeate [ppm]	Regulatory Limits
Oil & Grease	136	1.0	20
COD	4,670	550	600
Lead	0.8	0.1	0.2
Nickel	0.2	0.01	0.2
Copper	1.5	0.3	0.3
Zinc	5.9	0.4	1.0

Why ALSYS?

CeraMem LLC is a member of the ALSYS Group. ALSYS is a leader in specialty markets, offering a full package of advanced materials, process engineering, industrial equipment, and custom services with strong expertise in filtration and catalysis technologies.

CeraMem, together with its sister companies, has more than 420 membrane system references worldwide



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