

TMF SYSTEM



ICMQ's TMF System is the ideal treatment process for industrial wastewater which contains a high metal content and where a robust and transportable system is required.

KEY FEATURES OF THE TMF SYSTEM INCLUDE

- ✓ Easy operation, maintenance and control;
- ✓ Continuous operation and performance;
- ✓ Resistance to abrasion and temperature fluctuations;
- ✓ High flux rates;
- ✓ Capacity to handle high solids loads;
- ✓ Capacity to handle the full pH range of 0-14;
- ✓ Capacity for further processing to remove a wide range of contaminants (contact ICMQ for details).

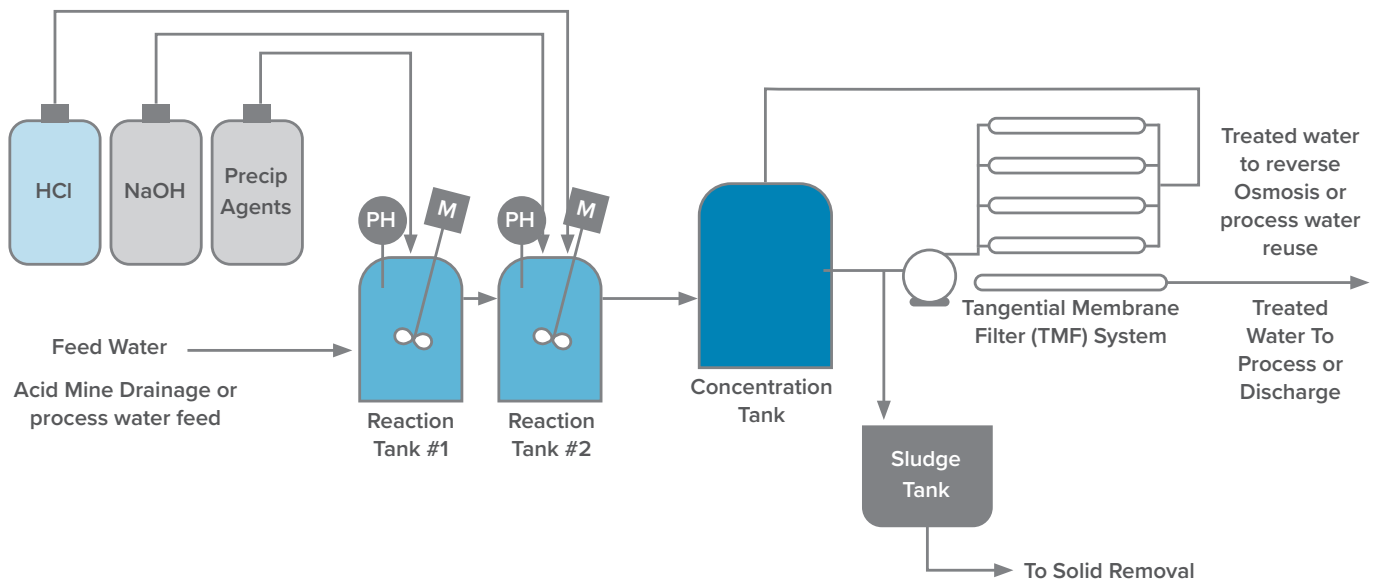
Being modular, the TMF System can incorporate an optional RO unit for an even higher quality product water that can be reused. There is also the option to include a GAC unit to remove pollutants such as dissolved hydrocarbons or amines.

TMF SYSTEM COMPONENTS

A standard TMF System has four main components:

1. Precipitation which is achieved by chemical dosing and mixing;
2. The TMF unit where the process water is circulated, and clean water is produced via tangential membrane filtration;
3. Solids processing where the solids are removed from the sludge produced by the TMF unit with the recovered liquid being returned to the start of the process; and
4. Product processing which can be tailored to meet output requirements and may include pH adjustment, RO, or GAC.

Example Process Flow Diagram for a Tangential Membrane Filter Metals Precipitation System



Tangential Membrane Filtration by ICMQ utilises Porex® Technology.

Some typical results and markets for the TMF System are:

Parameter	Feed Water (ppm)	Product Water (ppm)
Aluminium	10-1000	0.5
Arsenic	1-50	0.005
Cadmium	25-115	0.05
Chromium	3-275	0.1
Copper	1-1500	0.1
Cyanide	5-300	0.1
Gallium	4-20	0.5
Germanium	20-110	0.5
Gold	1-12	0.15
Iron	2-1500	0.02
Lead	2-100	0.05
Manganese	1-10	0.02
Mercury	3-30	0.005
Nickel	4-300	0.1
Rhodium	20-500	0.1
Silver	10-200	0.1
Tin	20-75	0.1
Uranium	1-15	0.01
Zinc	2-400	0.1

Market	Application
Acid Mine Drainage	Removal of heavy metals to below 0.1ppm
Metal Finishing	Removal of heavy metals to less than 0.1 ppm
Groundwater Remediation	Removal of heavy metals to less than 0.1 ppm
Battery Manufacturing	Removal of lead and cadmium from wastewater
Automotive	Removal of zinc and phosphate from phosphatizing operations
General Industry	Removal of heavy metals from incinerator scrubber water Pretreatment for reverse osmosis water recycling Lime softening of cooling tower blowdown for water recycling General heavy metals removal to less than 0.1 ppm Replacement of clarifier or a clarifier followed by sand filter Arsenic removal to less than 0.1 ppm Fluoride removal to below 5 ppm Cutting fluid recycle from silica grinding and slicing operations Deionised water recycle from wet blast and back grinding processes Heavy metals removal from tin/lead plating onto lead frames Removal of heavy metals to less than 0.1 ppm



CONTACT US



ICMQ Filtration
4/274 Beatty Road, Archerfield Qld 4108
+617 3393 5311 | info@icmq.com.au
www.icmqfiltration.com.au