

BIO-CEL® MBR PROCESS QUESTIONNAIRE

Project Name: _____
 OEM: _____ Engineering Company: _____
 End User: _____ Project Country: _____
 Project Phase: Evaluation Tendering Bidding Job in Hand
 Other: _____
 Project type: New plant Capacity expansion Replacement of existing MBR
 Expected start-up date of the project: Q1 Q2 Q3 Q4 year 20 _____

1. Source of feed flow:
 Municipal Commercial (public use) Industrial
 → Type: _____
 % of each source (in case of mixed industrial wastewater): _____

2. Is there mechanical / chemical pretreatment upstream to MBR (please explain)?

3. When one / all filtration line(s) are out of service, is there enough buffer capacity for the required duration to hold the inflow upstream to the filtration step (1 hour / week), for module inspections (max. 1 day, once or twice per year)?

4. Must the permeate production be non-stop (24 h, 7 days) due to further use of it (e.g. use in production or as feed to RO)?

5. Hydraulic load to filtration step:

Please give ONLY the values after equalization tank.

- Annual daily average flow, Q_d : _____ m^3/d
- Hourly peak flow, $Q_{h,max}$ (dry weather, no mixture with rain water): _____ m^3/h
- Hourly peak flow, $Q_{h,max}$ (wet weather, applicable for municipal STP with combined sewer system): _____ m^3/h
- Maximum duration of Peak flow (per day and week): _____ h/d _____ d/w
- Maximum duration of Rain flow (municipal mixed sewer): _____ d/month _____ d/year

Wastewater temperature * (°C):

- Minimum temp. Summer: _____
- Maximum temp. Summer: _____
- Minimum temp. Winter: _____
- Maximum temp. Winter: _____

* If there is a table for long-term temperature regimen available, please attach it to your inquiry.

6. Is there any antifoam / chemical addition in biological tank (if yes, please explain)?

7. The composition of flow: (if a detailed water analysis is available in English or German, please attach it)

Parameter	Value	Unit	Parameter	Value	Unit	Other Unit
COD	_____	mg/L	Suspended Solids (TSS)	_____	mg/L	_____
BOD ₅	_____	mg/L	FOG – Free	_____	mg/L	_____
Total Nitrogen	_____	mg/L	FOG – Emulsified	_____	mg/L	_____
Ammonia NH ₄ -N	_____	mg/L	Salinity (TDS)	_____	mg/L	_____
Nitrate NO ₃ -N	_____	mg/L	Chloride (Cl ⁻)	_____	mg/L	_____
Phosphorus (as PO ₄ -P)	_____	mg/L	TOC	_____	mg/L	_____
Alkalinity (as CaCO ₃)	_____	mg/L	Conductivity	_____	µS/cm	_____

Solvents_Cationic _____ mg/L Solvents_Anionic _____ mg/L _____

8. Required effluent quality:

_____ mg/L _____ mg/L
 _____ mg/L _____ mg/L

9. The aim of the filtration (use of permeate):

- | | |
|--|--|
| <input type="checkbox"/> Irrigation | <input type="checkbox"/> Toilet flushing |
| <input type="checkbox"/> Discharge to surface waters | <input type="checkbox"/> Reuse in production |
| <input type="checkbox"/> Pretreatment before RO | <input type="checkbox"/> Other: _____ |

10. Further details / tender specifications:

- Which automation level is expected for the plant?
 - High automation level → all treatment steps including periodic chemical cleaning of MBR system will be 100% operated by PLC.
 - Low automation level → the plant is partly/mostly operated manually. The periodic chemical cleaning of MBR system will be done manually by staff.
- Is the design flux defined by the tender (please specify peak or average flux)?

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- Is the number of filtration lines fixed by the tender or project demands?

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- Are there any existing plans and drawings (P&ID, GA, etc.) of this plant? If yes, please attach.

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- Additional Information:
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