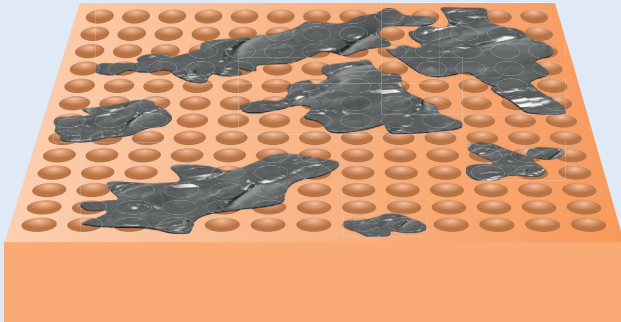
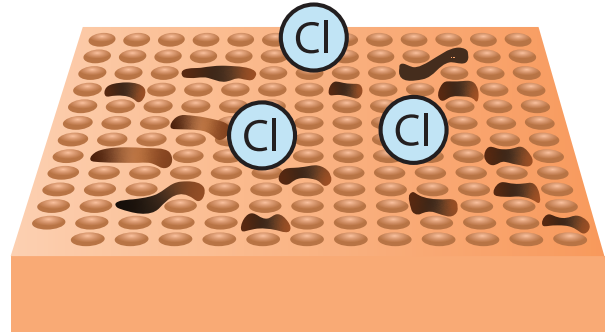


3 common problems cause RO membranes to operate poorly

1 CHEMICAL ATTACK

RO membranes are not tolerant to chlorine or chloramines. They attack the RO membrane pores, potentially causing irreparable damage.

The chemical attack leads to deteriorating permeate quality due to higher salt passage through the damaged RO membrane.



2 FOULING/PLUGGING

Possible contaminants dependent on water source:

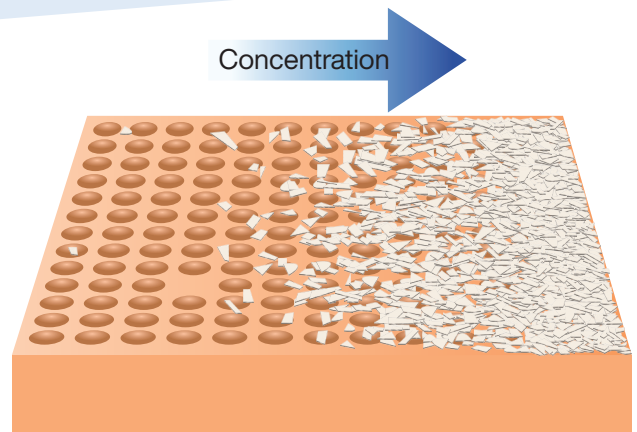
- Particulate and colloidal matter
- Organics
- Microorganisms
- Fines from pre-treatment beds

Fouling causes higher pressure drops resulting in lower permeate flows. This raises operating costs due to increased regular cleaning and earlier replacement of RO membranes.

3 SCALING

As dissolved (inorganic) compounds become more concentrated in the concentrate stream, scaling (precipitation) can occur when solubility limits are exceeded.

Scaling reduces permeate flow and quality because of higher differential pressures generated and higher salt passage.



INSIGHT

The correct pre-treatment selection will maintain optimum RO membrane life. But there is no perfect solution. For example, removing residual chlorine protects the RO membranes from attack. However, this allows bacteria to grow uninhibited, and cleaning cycles increase. It's always balance.

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