Dow Water Solutions Claim Evaluation Form

This form must be filled in with all the requested information and e-mail to sos@dow.com before the Claim Process is started. You will receive an email containing a Return Authorization (RA) Number and shipping instructions.

Claim Evaluation: Complete Sections 1 & 2 (Section 2 – Fill out section based on technology)

A return authorization (RA) number will be provided to start the process to assess products supplied by Dow. The RA number will be provided only once the required operational data and information related to the installation is provided by the customer. Products returned to Dow facilities without proper identification (RA number) will be disposed. As a result of the assessment of any Warranty Evaluation (WE) claim, an acceptance or Denial letter will be issued. No cost or chargeable fee associated. Cleanings or any other activity intended to improve the performance of the installation where the products are operated are excluded from the scope of any claim.

Section 1: Must be completed for for all cases independent of the technology

<table>
<thead>
<tr>
<th>Product Return Details</th>
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</thead>
<tbody>
<tr>
<td>Name</td>
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<tr>
<td>Company</td>
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<tr>
<td>Plant Name</td>
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<tr>
<td>Address</td>
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<td>City</td>
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<td>State</td>
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<tr>
<td>Country</td>
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<tr>
<td>Postal Code/Zip</td>
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<tr>
<td>Phone</td>
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<tr>
<td>Fax</td>
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<tr>
<td>e-mail</td>
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</tbody>
</table>

DOW Representative Contacts

Have you contacted a Dow Representative? Yes No

DOW TS&D Contact: E-mail:
DOW KAM Contact: E-mail:
Section 2: Technology Evaluation

Type of warranty provided at purchase:
- 3 Year Element Warranty
- 5 Year System Warranty
- Other (Describe)

Reverse Osmosis Elements:
Number of membrane elements sent for WE: (Attach separate sheet if needed with S/N's)
Total number of membrane elements that may be affected:

<table>
<thead>
<tr>
<th>Product Model(s)</th>
<th>Serial Number(s)</th>
<th>Date Installed</th>
<th>Element Position (lead, tail, etc...)</th>
<th>Symptoms Description (Low Flow, poor rejection...)</th>
</tr>
</thead>
<tbody>
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</table>

System Information – Required for Return Authorization number to be provided

Application
- □ Industrial/Power
- □ Pharma
- □ Specialties
- □ Oilfield
- □ Municipal
- □ Others, please indicate:

# trains: # stages: # pressure vessels in each stage: # elements per pressure vessel:

Permeate flow: System recovery (%): Feed water temperature: □ °C □ °F

RO or NF Pretreatment:
- □ UF
- □ Media
- □ Coagulation
- □ Cartridge
- □ Other (describe)

Feed water source:
- □ Surface Water
- □ Well Water
- □ Salt Water (Ocean/Sea)
- □ Municipal Waste Water
- □ Industrial Waste Water
- □ Other (Please describe)

Chemicals used for cleanings (if any)

Feed water chemistry available?
- □ YES (attach separately)
- □ NO

Operational data available?
- □ YES (attach separately)
- □ NO

Performance Data and Feed Water Characterization

Attach Normalized Operational Data (i.e: Normalized Permeate Flow, dP progress, Normalized Salt Rejection, etc) and recent feed water analysis.

Typical tests performed in a warranty evaluation

<table>
<thead>
<tr>
<th>Reverse Osmosis/ Nanofiltration Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual inspection</td>
</tr>
<tr>
<td>Performance Test (if possible)</td>
</tr>
<tr>
<td>Autopsy (only visual inspection)</td>
</tr>
<tr>
<td>Chemical Degradation</td>
</tr>
</tbody>
</table>
**Ultrafiltration Modules:**

Number of modules sent for WE:  
Total number of modules that may be affected:

<table>
<thead>
<tr>
<th>Product Model(s)</th>
<th>Serial Number(s)</th>
<th>Date Installed</th>
<th>Module Position on Skid</th>
<th>Symptoms Description (Low Flow, high TMP...)</th>
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</thead>
<tbody>
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</tbody>
</table>

**System Information – Required for Return Authorization number to be provided**

Application  
☐ Industrial/Power  
☐ Specialties  
☐ Municipal  
☐ Pharma  
☐ Oilfield  
☐ Others, please indicate:

# trains:  
# modules per train:  
Operational Flux (L/m²·h):  
Filtration Cycle:  
Backwash Flux (L/m²·h):  
Type of water used for Backwash:  
Air Scour Flow (Nm³/h):  
Oxidant CEB Chemical/Frequency:  
Alkali CEB Chemical/Frequency:  
Acid CEB Chemical/Frequency:  
CIP Frequency:  
CIP Recipe:  
Feed water source:  
☐ Surface Water  
☐ Well Water  
☐ Salt Water  
☐ (Ocean/Sea)  
☐ Municipal Waste Water  
☐ Industrial Waste Water  
☐ Other (Please describe)

Feed water chemistry available?  
☐ YES (attach separately)  
☐ NO  
Operational data available?  
☐ YES (attach separately)  
☐ NO

Upstream Process  
☐ Aeration  
☐ Pressure Sand Filter  
☐ A/O treatment  
☐ Multimedia Filter  
☐ Coagulation/Flocculation  
☐ Green Sand Filter  
☐ Sedimentation  
☐ Activated Carbon  
☐ Clarification  
☐ Cartridge Filter. Pore size  
☐ Exchange Frequency  
☐ Secondary Sedimentation  
☐ Bag Filter. Pore size  
☐ Exchange Frequency  
☐ Lime Softening  
☐ Self cleaning filter. Pore size  
☐ Exchange Frequency  
☐ Sterilization/Disinfection  
☐ Other (please specify)

Chemicals used (if any)  
☐ Sodium Hypochlorite  
Dosage (ppm):  
Dosing Point  
☐ Ferric Chloride  
Dosage (ppm):  
Dosing Point  
☐ Organic Polymer  
Dosage (ppm):  
Dosing Point  
☐ Aluminum Chloride  
Dosage (ppm):  
Dosing Point  
☐ PAC (Powder Activated Carbon)  
Dosage (ppm):  
Dosing Point  
☐ Other (Please describe)  
Dosage (ppm):  
Dosing Point

**Typical tests performed in a warranty evaluation**

<table>
<thead>
<tr>
<th>Ultrafiltration Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual inspection</td>
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<tr>
<td>Flux Test</td>
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<tr>
<td>Integrity Test</td>
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<tr>
<td>Autopsy (if applicable)</td>
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</tbody>
</table>
Ion Exchange Resins (for performance claims):

Number of resin samples sent: (Attach separate sheet if needed production batch number)

Total number of vessels that may be affected:

<table>
<thead>
<tr>
<th>Product Name(s)</th>
<th>Resin Type(s) (SAC, SBA, WAC, WBA)</th>
<th>Vessel Number (1,2,A, B…)</th>
<th>Samples (1)</th>
<th>Regenerated or exhausted</th>
<th>Symptoms Description</th>
</tr>
</thead>
</table>

(1) Please indicate if the sample was taken from the top (T), middle (M), bottom (B) of the bed or if it is an average sample.

Persistent or Recurring Problems:

- **WATER**
  - [ ] Softening
  - [ ] Demin
  - [ ] Industrial Water
  - [ ] Power
  - [ ] Condensate Polishing
  - [ ] Ultrapure Water

- **SPECIALTY**
  - [ ] Industrial Process (Catalysis, Mining, Chemical Processing)
  - [ ] Sweeteners
  - [ ] Bioprocessing
  - [ ] Nutrition
  - [ ] Others. Please, specify

<table>
<thead>
<tr>
<th>Vessel for Sample</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>Identification</td>
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<td>Diameter (ft/m)</td>
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<td>Height of Resin Bed (ft/m)</td>
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<td>Height of Vessel (ft/m)</td>
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<tr>
<td>Resin Type</td>
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<td>Lot Number(s), if possible</td>
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<td>Approx. Date Installed (Mo\Yr)</td>
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<td>Has it Been Topped Off?</td>
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<td>Approx. Rebed Time, months</td>
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<td>Regenerant Used and Concentration</td>
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<tr>
<td>Regeneration Temperature Range</td>
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<td>Regeneration Flowrate</td>
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<td>Regeneration Volume</td>
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<tr>
<td>Co- or Counter-current Regeneration Mode?</td>
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<tr>
<td>Cross-Regeneration Frequency</td>
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<tr>
<td>Cross-Regeneration Used and Concentration</td>
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</tbody>
</table>

**Typical tests performed in a performance claim**

<table>
<thead>
<tr>
<th>Resins Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual inspection</td>
</tr>
<tr>
<td>Total Exchange Capacity</td>
</tr>
<tr>
<td>Moisture Retention Capacity</td>
</tr>
<tr>
<td>Microscopic bead examination</td>
</tr>
<tr>
<td>Particle Size Distribution</td>
</tr>
<tr>
<td>Whole Bead</td>
</tr>
</tbody>
</table>

SM Service Mark of The Dow Chemical Company