

# **DuPont Water Solutions for Oil & Gas**

Water quality is critical to improve the recovery and minimize the environmental impact of hydrocarbon production. Solids removal and salinity adjustments from the industrial water produced during this process are a major concern for oil and gas producers looking to protect their wells, lower costs, protect downstream equipment, and reduce safety and environmental issues. DuPont Water Solutions offers expertise and a growing portfolio of technologies to address the unique industrial water resource management needs of the hydrocarbon exploration and production industry.

#### Water technologies for onshore and offshore systems

The prevention of sulfate precipitation and souring in an injection well or reservoir is a major concern for oil and gas producers looking to effectively extract oil from wells, reduce costs, protect downstream equipment, and mitigate safety and environmental risks. Since injection water quality is critical to improve oil recovery, DuPont Water Solutions provides various solutions that can be used in various steps of injection water treatment systems for safe and reliable operation.

Products Offered for Injection Water		
Pretreatment for Particle Removal	<ul> <li>DuPont™ IntegraFlo™ Ultrafiltration</li> <li>Integrated Ultrafiltration (iUF)</li> </ul>	• MEMCOR® P20N
Offshore Sulfate Removal	• FilmTec™ SR90-400i • FilmTec™ SR90-440i	• FilmTec™ SR90HR-440i • FilmTec™ Fortilife™ SR90i
Desalination	• Reverse osmosis & nanofiltration elements	
Degasification	<ul> <li>DuPont™ Ligasep™ LDM-040-LS</li> <li>DuPont™ Ligasep™ LDM-120-LS</li> </ul>	<ul> <li>DuPont™ Ligasep™ LDM-040-HS</li> <li>DuPont™ Ligasep™ LDM-120-HS</li> </ul>

## Addressing pressing needs for produced water treatment

Produced water is the water byproduct that comes out of the well with the crude oil. The composition of produced water varies widely from well to well, but typically contains soluble and non-soluble oil/organics, suspended solids, dissolved solids, and toxic heavy metals and must be treated before discharge or reinjection. DuPont offers a variety of solutions to effectively treat produced water for reuse or discharge.

Organics / Oil Removal	<ul> <li>DuPont™ AmberLite™ ROC110 Oil-Coalescing Media</li> </ul>	<ul> <li>DuPont™ AmberLite™ SCAV1</li> </ul>
3	• DuPont™ AmberSorb™ L493 Polymeric Adsorbent	Ion Exchange Resin
	<ul> <li>DuPont™ AmberLite™ XAD™ 4 Polymeric Adsorbent</li> </ul>	<ul> <li>DuPont™ AmberLite™ SCAV2</li> </ul>
	<ul> <li>DuPont™ AmberLite™ XAD™ 16 Polymeric Adsorbent</li> </ul>	Ion Exchange Resin
Biodegradable Organics & Nutrients Removal	• MEMCOR® B40	
Salinity Management	• FilmTec™ SW30HRLE Elements	<ul> <li>FilmTec<sup>™</sup> Fortilife<sup>™</sup> XC Elements</li> </ul>
	• FilmTec™ SW30XHR Elements	• FilmTec™ XUS180808
Hardness Removal	• DuPont™ AmberLite™ IRC83 H	• FilmTec™ Fortilife™ XC-N
	• DuPont™ AmberLite™ HPR8300 H	• FilmTec™ NF270 Elements
	• DuPont™ AmberLite™ HPR1100 Na	• FilmTec™ NF90 Elements
	<ul> <li>DuPont™ AmberSep™ Chelating Resins</li> </ul>	
Heavy Metal Removal	<ul> <li>DuPont™ AmberSep™ IRC748 UPS Chelating Resin</li> </ul>	• DuPont™ AmberLite™ HPR1100 Na Resin
	• DuPont™ AmberSep™ 43600 Chelating Resin	• DuPont™ AmberLite™ HPR9200 Cl
	• DuPont™ AmberSep™ GT74 Ion Exchange Resin	• DuPont™ AmberLyst™ A21
	• DuPont™ AmberSep™ 21K XLT Ion Exchange Resin	<ul> <li>DuPont™ Ultrafiltration SFP Modules</li> </ul>
	• DuPont™ AmberSep™ G26 H Ion Exchange Resin	
	• DuPont™ AmberLite™ IRC83 H Resin	

### Unconventional & sustainable production of hydrocarbons

Unconventional oil and gas extraction refers to extraction methods other than traditional vertical oil well pumping. Unconventional extraction processes require the use of new, often complex, methods such as developing oil sands (also known as tar sands or bituminous sands), hydraulic fracturing and directional drilling. As these processes become more popular, the exploration of these oil resources also raises environmental concerns such as groundwater contamination and overuse of scarce surface water. DuPont offers innovative water treatment technologies to minimize the environmental impact of unconventional oil and gas extraction methods.

Shale Oil	<ul> <li>DuPont™ AmberSorb™ L493</li> <li>DuPont™ AmberLite™ IRC83 H</li> <li>DuPont™ AmberLite™ HPR8300 H</li> <li>FlimTec™ Fortilife™ XC-N</li> </ul>	<ul> <li>FilmTec™ SW30XFR-400/34</li> <li>FlimTec™ Fortilife™ XC70</li> <li>FilmTec™ SW30XHR</li> <li>FilmTec™ XUS180808</li> </ul>
Coal Seam Gas	<ul> <li>DuPont™ IntegraFlux™ SFP-2880</li> <li>DuPont™ IntegraFlux™ SFP-2880XP</li> <li>DuPont™ AmberLite™ IRC83 H</li> <li>FilmTec™ SW30XFR-400/34</li> </ul>	<ul> <li>FilmTec™ BW30XFRLE-400/34</li> <li>FilmTec™ ECO PRO-400</li> <li>FilmTec™ Fortilife™ series</li> <li>FilmTec™ XUS180808</li> </ul>
Steam-Assisted Gravity Drainage (SAGD)	<ul> <li>DuPont™ AmberLite™ IRC83 H</li> <li>DuPont™ AmberLite™ IRC120 Na</li> <li>DuPont™ AmberLite™ HPR1100 Na</li> </ul>	• FilmTec™ Eco Pro™ • FilmTec™ Fortilife™ series elements

## Learn more about DuPont's product offering in the Oil & Gas industry:

Injection Water
Treatment brochure



Water Treatment for Unconventional
Oil & Gas Extraction Processes brochure



Produced Water
Treatment brochure



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Water Solutions dupont.com/water

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