



**POWER  
INDUSTRY  
TECHNOLOGIES**  
ASIA-PACIFIC  
PRODUCTS



## PLUG INTO BUCKMAN EXPERTISE.

As demand for energy rises, so does the need for efficient power production. While Buckman offers a wide range of chemical solutions, it is our commitment to improving your facility's performance that makes the best chemistry. Our highly trained professionals work with you to control costs, improve plant operations, and quickly solve daily problems as they arise. Buckman's culture of Continuous Improvement focuses on a long-term partnership to ensure your business is sustainable both now and for the future. Look to us for leading chemistries to help you optimize:

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- Influent Clarification
  - Ion Exchange Systems
  - Fuel Handling
  - Steam Generation
  - Cooling Water Systems
  - Closed Loop Systems
  - Wastewater
  - Reverse Osmosis Systems
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We can help you reduce your environmental footprint, too, even as we improve your return on investment. If you want to know more about any of these products and how they can make a difference in your plant, contact your Buckman representative or visit [buckman.com](http://buckman.com).

PRODUCT	DESCRIPTION
<b>Pretreatment / Reverse Osmosis Products</b>	
<b>Bulab 8862</b>	A <b>broad-spectrum microbicide</b> based on a non-oxidizing biocide that has a <b>slow mode of action</b> . It is applied directly into the feedwater flow before the membrane system on an intermittent basis, based on current performance. The product is effective against microbial contamination across a broad pH range. Bulab 8862 is designed for thin film and cellulose acetate based membranes.
<b>Bulab 8861</b>	A <b>broad-spectrum microbicide</b> based on a non-oxidizing biocide that has a <b>fast mode of action</b> . It is applied directly into the feedwater flow prior to the membrane system on an intermittent basis. The product is safe to use for thin film and cellulose acetate membrane material.
<b>Bulab 8806</b>	<b>RO scale inhibitor for seawater</b> is especially effective against calcium sulphate. Bulab 8806 is a combination scale inhibitor package that prevents the precipitation of dissolved solids on the membrane surface. The product also includes a dispersant to aid in flushing contaminants and foulants from membrane and feedwater spacer surfaces. Bulab 8806 is compatible for use on thin films and cellulose acetate based membranes.
<b>Bulab 8809</b>	<b>Scale inhibitor for brackish water reverse osmosis membrane systems</b> . The product is effective for use in stressed water to control both calcium carbonate and calcium sulphate based scales. Bulab 8809 can be used on thin film and cellulose acetate based membranes. It is also effective in controlling barium sulphate and strontium sulphate scales. Bulab 8809 is a nonphosphate, nonphosphonate inhibitor package that prevents problems that may be encountered with calcium phosphate precipitation. <i>Bulab 8809 is FDA allowed under (21 CFR) Sections 173.310 and 176.170.</i>
<b>Bulab 8808</b>	<b>Scale inhibitor for reverse osmosis membranes</b> that is especially effective against silica and magnesium silicate deposition. Bulab 8808 is a blended scale inhibitor package that is effective in preventing the precipitation of dissolved solids on the membrane surface. The product also includes a high-performance terpolymer to aid in flushing contaminants and foulants from the membrane and feedwater spacer surfaces.
<b>Bulab 8884</b>	<b>Alkaline cleaner used in CIP for reverse osmosis membranes</b> . Bulab 8884 is a proprietary cleaning formulation that is effective in removing organic matter and foulants, as well as inorganic colloids. The product includes a chelating agent for iron and copper sequestration and a dispersant to aid in flushing contaminants from the membrane and feedwater spacer surfaces during the CIP process. Bulab 8884 is an alkaline product and is formulated for use on both thin film composite and cellulose acetate membranes, depending on the pH of the final cleaning solution.
<b>Bulab 8893</b>	<b>Acid cleaner agent in CIP for reverse osmosis membranes</b> . The product is effective at cleaning metallic oxides, deposits and has a surfactant to improve its wetting ability. Bulab 8893 can be used alone when cleaning inorganic scales or foulants from the membrane. Bulab 8893 is an acidic product and is formulated to be used on both thin film composite and cellulose acetate membranes. <i>This product is allowed under FDA 21 CFR § 176.170 and 176.180.</i>
<b>Oxamine® Technologies</b>	Oxamine, Buckman's newest technology, is an <b>oxidizing biocide program</b> generated in-situ at the plant site. It is active against a broad range of microbes and is particularly efficacious against filamentous bacteria. It is able to work in a pH range from 6.0 – 9.5, while having less corrosion potential than other oxidizing biocides. Oxamine can be used for the control of algal, bacterial and fungal deposits in industrial cooling towers, recirculating cooling water systems, evaporative condensers, influent water systems, brewery and food pasteurizers, industrial fresh water systems, seawater desalination and reverse osmosis systems.
<b>Oxygen Scavengers</b>	
<b>Bulab 9622</b>	Bulab 9622 is a <b>carbohydrazide based product</b> . It does not contaminate the workplace with hydrazine vapours. Bulab 9622 is designed to only produce hydrazine in the boiler system when exposed to heat and high pH. Hydrazine will protect the boiler and feedwater systems from oxygen attack. Hydrazine does not contribute to conductivity in the boiler feedwater system and is a strong passivator. The product is a liquid for ease of dosing into the system.
<b>Bulab 9605</b>	Bulab 9605 (diethylhydroxylamine) is a <b>volatile oxygen scavenger and metal passivator</b> . Bulab 9605 is catalysed to further increase its rate of reaction with oxygen, which insures complete oxygen removal from the feedwater and prevents oxygen attack. Being volatile, Bulab 9605 will travel into the steam to help protect the condensate system from oxygen attack and promote the formation of magnetite in the condensate return system. This will reduce iron levels in the returning condensate and provide an increased level of protection from iron deposition in the boiler.
<b>Bulab 9601</b>	Bulab 9601 is a <b>catalysed powder sulphite</b> designed to protect boiler and feedwater systems by rapidly reacting with and removing oxygen. The product is <b>not volatile</b> and is easy to test for in boilers. It can be used in boilers up to 900 psig, although it is preferable to use Bulab 9601 when the drum pressure is less than 600 psig.
<b>Bulab 9602</b>	Bulab 9602 is a <b>catalysed liquid sulphite</b> designed to protect boiler and feedwater systems by rapidly reacting with and removing oxygen. The product is <b>not volatile</b> and is easy to test for in boilers. It can be used in boilers up to 900 psig, although it is preferable to use Bulab 9602 when the drum pressure is less than 600 psig. This product is low odour and can be fed directly or diluted prior to feeding.

PRODUCT	DESCRIPTION
<b>Internal Boiler Treatment Program</b>	
<b>Bulab 9564</b>	Bulab 9564 is a <b>powder phosphate product</b> for use in a coordinated phosphate treatment program. The product can be used in combination with other boiler treatment products. Bulab 9564 acts to control the pH in the internal boiler system to minimize corrosion. The product can be used alone or in combination with other boiler treatment chemicals. <i>The product is Halal certified and allowed under FDA 21 CFR § 173.310 for use where steam can contact food.</i>
<b>Bulab 9534</b>	Bulab 9534 is an <b>internal boiler water treatment</b> designed for boilers operating at pressures below 84 kg/cm <sup>2</sup> . It is recommended for use in boilers using softened or softened/dealkalised makeup water. Bulab 9534 combines polyphosphate with polymeric scale inhibitors and dispersant/sludge conditioners to protect against mineral scale and sludge deposits that interfere with heat exchange. Bulab 9534 must be used with an oxygen scavenger and condensate treatment. <i>The product is Halal certified and its components are allowed under FDA 21 CFR § 173.310 for use where steam can contact food.</i>
<b>Condensate Treatment Program</b>	
<b>Bulab 9708</b>	Bulab 9708 is a <b>blend of two neutralising amines</b> suitable for a wide variety of condensate corrosion applications. The product is designed to cover a range of distribution ratios so that feeding to the deaerator or the main steam header should maintain condensate pH in all plant areas. In some situations it may be necessary to feed supplemental product to handle extended steam systems. <i>The product is allowed under FDA 21 CFR § 173.310 for use where steam can contact food.</i>
<b>Bulab 9715</b>	Bulab 9715 is a <b>blend of three neutralising amines</b> designed to cover a range of distribution ratios so that a single application to the deaerator or main steam header will protect the condensate system from acid corrosion. In some situations it may be necessary to feed supplementary product to handle extended steam systems. <i>It is allowed under FDA 21 CFR § 173.310 for use where steam can contact food and is Halal certified.</i>
<b>Bulab 9731</b>	Bulab 9731 is a <b>highly concentrated blend of three neutralizing amines</b> suitable for use in large plants where condensate corrosion due to low pH is a problem. Generally, a single application to the deaerator or the main steam header should maintain condensate pH in all plant areas. In some situations it may be necessary to feed supplemental product to handle extended steam systems. Bulab 9731 is able to protect both turbine wet end and extended condensate systems. <i>It is allowed under FDA 21 CFR § 173.310 for use where steam can contact food and is Halal certified.</i>
<b>Coal Combustion Catalyst</b>	
<b>Bulab 9672</b>	A <b>product to improve boiler efficiency and reduce SO<sub>x</sub> emissions</b> , Bulab 9672 is a unique blend of fuel additives that increases coal combustion efficiency and reduces SO <sub>x</sub> and NO <sub>x</sub> emissions by up to 40-80%. Bulab 9672 combines smart chemistry and proprietary Buckman technology to create more efficient coal burning steam generating systems. Bulab 9672 helps reduce the activation energy required to complete the combustion process, delivering greater steam yields. Plants that use Bulab 9672 typically experience benefits since: <ul style="list-style-type: none"> <li>• it is suitable for low calorific value coal</li> <li>• there are few to no slagging issues</li> <li>• a 4 – 13% reduction in pulverized coal consumption can occur</li> <li>• it can deliver fireside corrosion control</li> </ul> Bulab 9672 improves combustion efficiency, improves system reliability and reduces maintenance costs. It also allows a reduction in the amount of coal necessary to operate boiler systems effectively and efficiently, saving money on labour, energy and supplies.
<b>Coal Dust Control</b>	
<b>Bulab 8608</b>	Bulab 8608 is a <b>unique blend of wetting and crusting agents</b> specifically designed to control fugitive dust emissions. Bulab 8608 is a concentrated coal dust control agent that can minimize dust from coal handling systems. It contains a surfactant with penetration properties and is an excellent crusting agent. The product can improve coal handling operations.



PRODUCT	DESCRIPTION
<b>Desulphurisation Catalyst In FGD Systems</b>	
<b>Bulab 8304</b>	<p>Bulab 8304 is a <b>blend of alkaline and reactive materials</b> effective at removing oxides of sulphur from flue gas desulphurisation systems. It can speed up the dissolution of calcium carbonate, reducing the Ca/S ratio, enhances lime slurry pH cushioning performance and improving sulphur-dioxide gas-liquid mass transfer rates. Thus, it speeds up and enhances the absorption of SO<sub>2</sub>. Meanwhile, it is also able to inhibit the deposition of calcium sulphate scale dispersion. Bulab 8304 is used as a power plant gas desulphurisation catalyst so that the emission of SO<sub>x</sub> can be reduced and meet the local standards. Your Buckman representative can make recommendations based on the specific needs of your system. Benefits of using Bulab 8304 are:</p> <ul style="list-style-type: none"> <li>• enhanced SO<sub>x</sub> absorption efficiency</li> <li>• reduction in the outlet SO<sub>x</sub> concentration</li> <li>• reduction in total SO<sub>x</sub> discharge volume</li> <li>• lowered energy consumption to run the slurry recirculation pump</li> </ul>
<b>Liquid Fuel Additive</b>	
<b>DEVIS</b>	<p>DEVIS is a <b>ready-to-use fuel conditioner</b> formulated to treat problems associated with the transport, storage, and combustion of residual liquid fuels. Treatment of fuel oils with DEVIS provides better dispersion of heavy hydrocarbons, carbon, water, and other sludge or deposit forming substances. Treatment improves dispersion, viscosity, atomisation and combustion of the fuel oils. It also decreases corrosion of metal equipment that comes in contact with the fuel oil. Some of the benefits derived from the use of this product include reduced buildup of tank-bottom sludge; minimal varnish and gum formation; cleaner lines, strainers, preheaters, orifices, and burners. It also promotes fewer deposits in the furnace and less soot formation, which improves the overall furnace efficiency. Characteristic economic benefits obtained from the use of DEVIS in fuel oils include:</p> <ul style="list-style-type: none"> <li>• savings in fuel consumed per unit of steam produced — a result of more complete combustion and heat transfer</li> <li>• fewer stoppages for fireside cleaning</li> <li>• less downtime and fewer man-hours required for cleaning of tanks, lines, strainers, pumps and furnace equipment</li> <li>• longer service life for equipment due to reduced corrosion</li> </ul>
<b>Chlorine Stabiliser</b>	
<b>Bulab 6187</b>	<p>Bulab 6187 is a <b>halogen stabiliser</b>, designed to optimize the performance of active chlorine sources, such as hypochlorite, whether fed as a liquid or generated by electro-chlorination units. Bulab 6187, when applied in conjunction with chlorine, minimises chlorine degradation and loss from undesirable side reactions or environmental conditions. Bulab 6187 slows down degradation of chlorine and hence increases its biocidal efficacy. Bulab 6187 is approved for use in process waters. Use of Bulab 6187 improves consistent chlorine residue, reducing the requirement of shock/overdose; overdose generally results in higher corrosion of lines and equipment in both water and air that comes in contact with escaped chlorine gas.</p>
<b>Anti-Scalant Seawater Systems</b>	
<b>Bulab 7098</b>	<p><b>Alkaline scale inhibitor</b> in high stress water systems. Bulab 7098 is a solution of synthetic polymers to prevent scaling in seawater semi once-through open cooling water systems and seawater desalination systems. Bulab 7098 is used at low dose levels and offers the following advantages:</p> <ul style="list-style-type: none"> <li>• liquid form provides easy handling</li> <li>• reduced plant corrosion</li> <li>• polyphosphate free, which eliminates problems related to these chemicals</li> </ul>

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