



Reduce Operating
Costs & Increase
Efficiencies
in the Food & Beverage
Industry

DReeM Polymer™



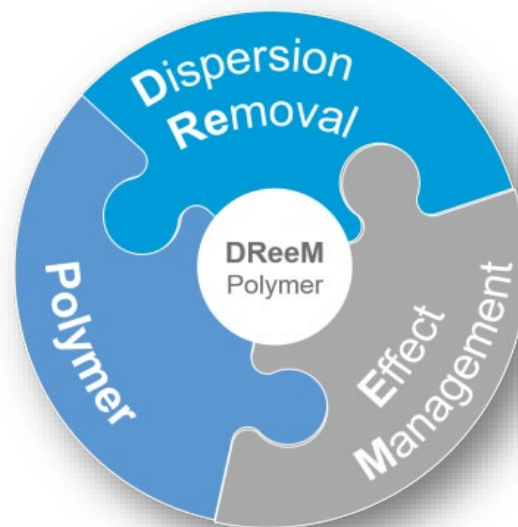
 **KURITA**

F&B Challenges and Solutions

Food and beverage (F&B) facilities need to maintain high quality water entering their steam boilers. If they do not, deposition can reduce operating efficiency.

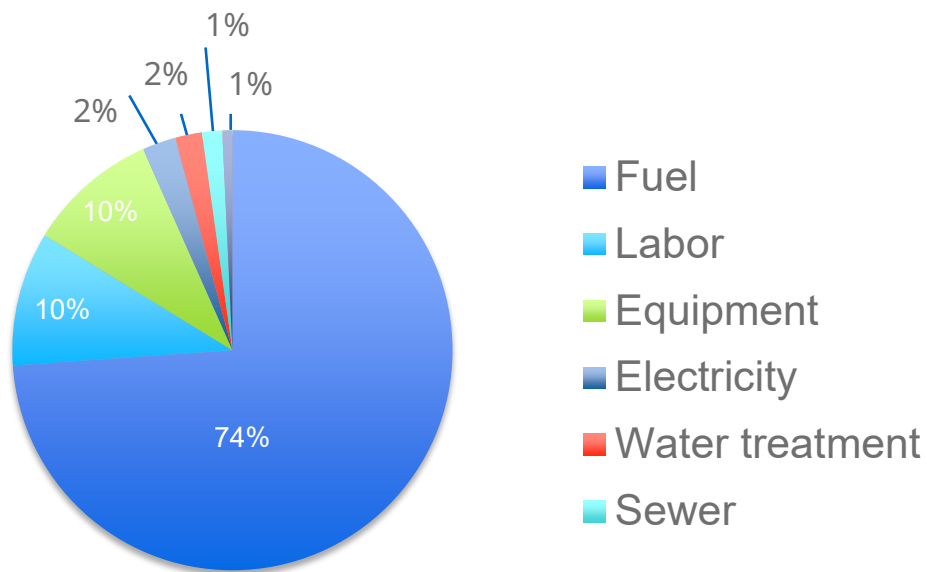
The multi-functional properties of the award-winning DReeM Polymer keep heat transfer surfaces in boiler systems free of scale and remove existing hardness and silicate deposits during boiler operation.

To help customers do so, Kurita offers a variety of Value+ solutions that are designed to enhance customer value by boosting productivity, reducing total cost of operations (TCO), and supporting sustainability objectives.



Why is silicate & scale control important?

Boiler System Operations Costs



Source: National Institute of Standards and Technology

Because applying DReeM Polymer prevents scale formation, your facility can:

- **Improve boiler efficiency**
- **Reduce fuel consumption**
- **Minimize operational costs**



DReeM Polymer Benefits

- Increases system efficiency and lifetime
- Saves water and energy
- Reduces carbon dioxide emissions
- Removes existing silicate and hardness scale from boiler surfaces up to four times more efficiently than conventional polymers
- Minimizes operational costs
- Complies with Food and Drug Administration (FDA) §173.310
- Meeting United Nations' Sustainable Development Goals (SDGs)

Sustainable Development Goals

DReeM Polymer helps reduce environmental impact by minimizing water consumption and promoting sustainable energy use and CO₂ emissions.



DReeM Polymer is used in 1000 boilers worldwide.

- *Food & Beverage*
- *Laundries*
- *Pharmaceutical*
- *Chemical Industry*
- *Metal Industry*
- *Paper Industry*
- *Plastics*
- *Automotive*
- *Biofuels*

References:



Water-tube and shell boilers up to 300 PSI (20 bars)



More 1,000 applications worldwide



Steam production rates from 1,000lbs/h (0.5t/h) to 353,000lbs/h (160 t/h)

Case Study #1: Sugar Industry

Introduction

Operating conditions:

- During sugar production periods, sufficient condensate return assures suitable make-up water quality.
- During sugar refining periods, low condensate return leads to hardness leakages due to excess softener capacity.

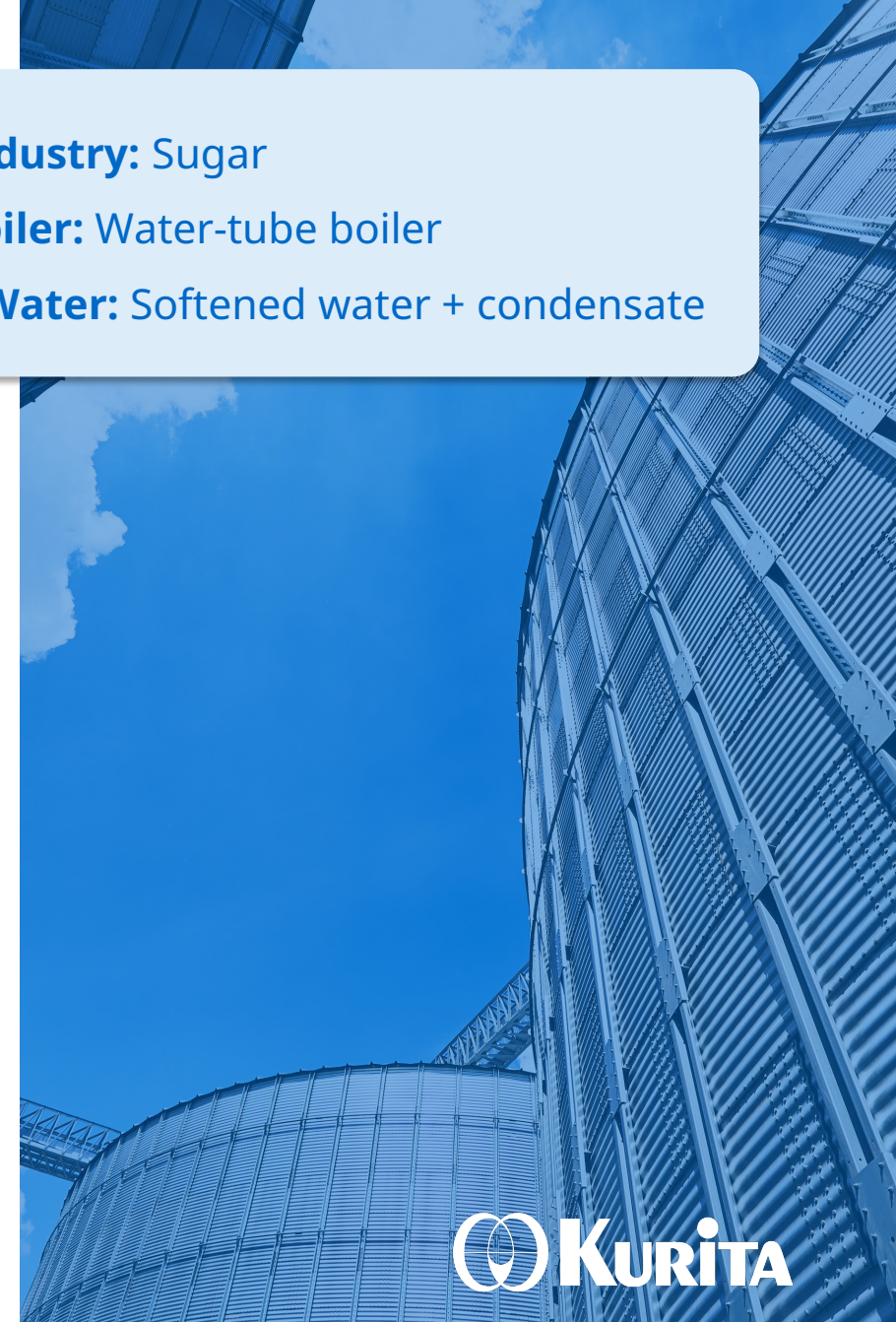
Former treatment:

- The traditional treatment had phosphates and a conventional polymer.

Type of Industry: Sugar

Type of Boiler: Water-tube boiler

Make-up Water: Softened water + condensate



Case Study #1: Sugar Industry

Results

With conventional treatment



Huge amount of sludge accumulation was observed in the lower drum.

After DReeM Polymer treatment



Some scaling deposition was still observed; however, there was no accumulation of sludge in either the upper or lower drums.

Case Study #2: Food Ingredients

Introduction

Operating conditions:

- Facility had chronic issue with process leaks in their heat exchangers at their gelatin processing unit.
- The gelatin caused foaming, and significant scale was formed in the boilers.

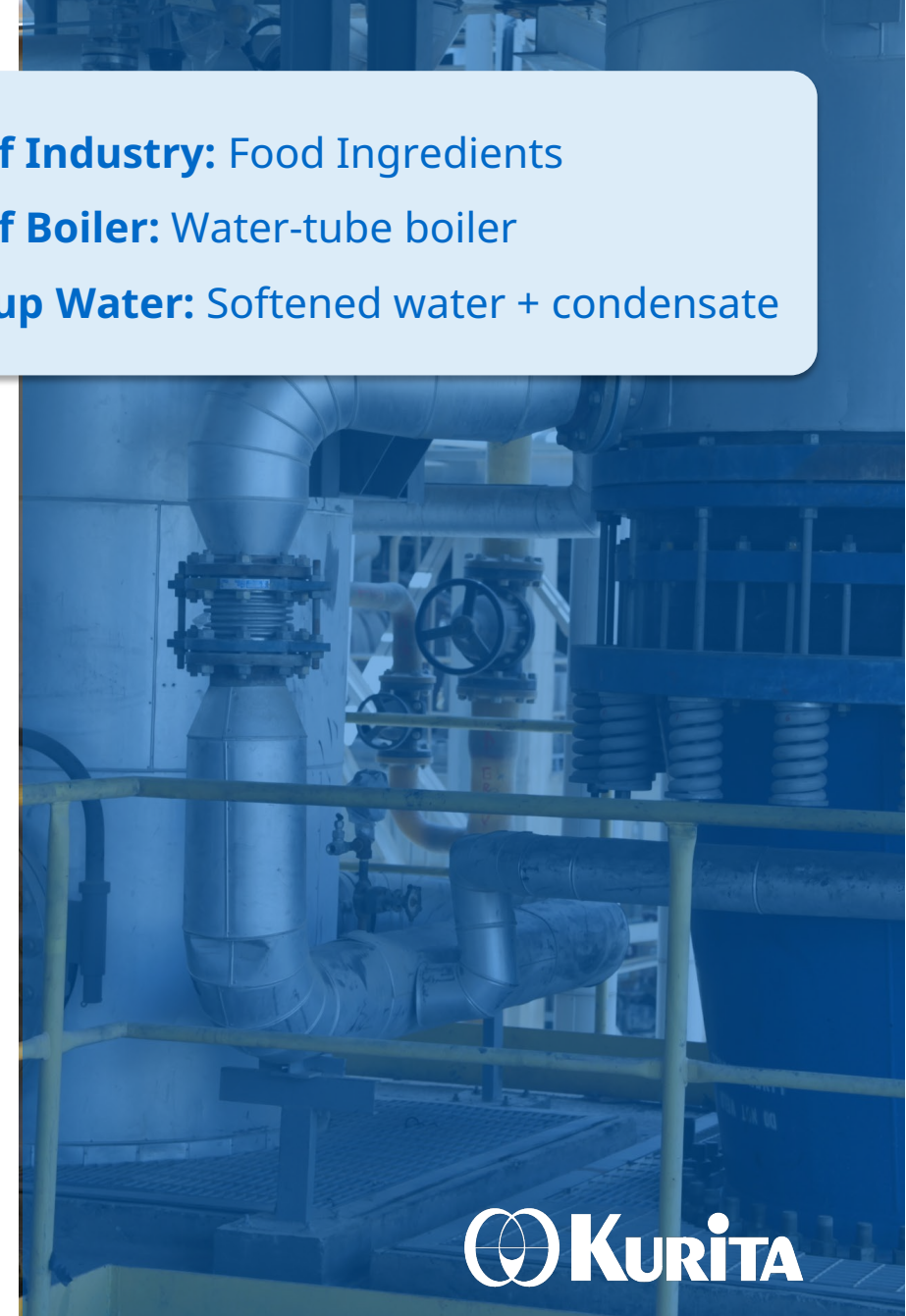
Former treatment:

- The traditional treatment required acid cleaning.

Type of Industry: Food Ingredients

Type of Boiler: Water-tube boiler

Make-up Water: Softened water + condensate



Case Study #2: Ingredients

Results

With conventional treatment



Required acid cleanings

After DReeM Polymer treatment



Two boilers reduced fuel use by 8.6% and 19.4% respectively.

Additional F&B Success Stories

Industry: Protein Harvesting

Background: Facility had increased costs from hauling off a full dumpster of sludge weekly.

Solution: After jar testing and a thorough review, Kurita suggested Kurifloc, which is fed at a lower rate than traditional inorganic coagulants.

A 60% reduction of sludge handling costs annually

Results averaged under 100 nephelometric turbidity unit (NTUs)

Saved \$100,000 annually

Industry: Cheese Manufacturing

Background: Proactive review of water consumption, production, cleaning practices, and wastewater discharge

Solution: Kurita performed a comprehensive site assessment, including data collection, cadence, and teamwork.

14 different improvement projects identified

Potential savings up to 22.3 million gallons (88.4 million liters) annually

Potential cost savings up to \$870,000



Left - before Cetamine treatment. Right - after 12 months of Cetamine treatment

Industry: Meat Processing Plant

Background: Calcium carbonate buildup on the heat exchanger surfaces put a strain on the cooling system and impacted plant operations.

Solution: Kurita tailored a solution with Cetamine, which creates a hydrophobic film on metal surfaces.

Save \$35,000 annually

Decreased CO2 emissions generated by 188 tons annually

Potential corrosion savings is \$250,000 annually



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The amount of front-end work with the Kurita team was instrumental in having good information to input.

It was invaluable to work with the Kurita team to help identify opportunities through their CSA process. The output was a roadmap to success in sustainability for the plan.

Sartori Cheese management

DReeM Polymer

Technology Awards

Energy Conservation Grand Prize

Kurita's DReeM Polymer received the **Energy Conservation Center Chairman's Award** for achieving significant energy and water savings in boiler systems.



Environmental Technology Award

Kurita's DReeM Polymer was awarded the Environmental Technology Award at the 49th Japan Chemical Industry (JCIA) Technology Awards as the outstanding technology with remarkable reductions in environmental impact.



[Watch our video](#)





Innovative Technologies for a Better World

DReeM Polymer is included in Kurita's **Value+** technologies portfolio to:



Reduce
fuel
consumption



Remove
accumulated
scale



Prevent
scale
formation



Increase
boiler efficiency
and lifetime

DReeM BL Plus

Manage Facility FSMA Compliance

The Food Safety Modernization Act (FSMA) requires food processing facilities to ensure the chemicals they use and processes they employ meet strict food safety requirements.

DReeM BL Plus meets 21 CFR 173.310 requirements for treating steam, providing facilities an option to consider DReeM BL Plus as part of their FSMA compliant program.



About Kurita

With over 75 years of experience, Kurita is a leading global water and process treatment provider.

Kurita's 8,000 employees strive daily to improve the efficiency of our customers' plants and projects through research and development, technologies, engineering, and service.

Kurita is dedicated to creating shared value for customers and society through the development of sustainable business practices and technologies for a better world.

Study the properties of water, master them, and we will create an environment in which nature and humanity are in harmony.



Kurita in the F&B Market

We serve a variety of industries in the F&B market with pre-treatment, utility and wastewater, and process technologies and water solutions.

Below are only some industries:

- Dairy (milk, butter, cheese, yogurt)
- Canning, fresh cuts, and juices
- Grain milling
- Meat processing and rendering
- Specialty beverages
- Spirits, beer, and wine
- Thermal processing





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