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# GET TO KNOW NORCHEM



(From left to right) Karineh Minissian, Corina Minissian, Houri Minissian, Vaughn Minissian

# FAMILY-OWNED & OPERATED

Norchem puts the needs of its customers at the forefront of all product development and customer care initiatives while maintaining it's core values of

trust, sustainability, and the willingness to pursue solutions for challenging environments. The Norchem family tree grew as Kevin Minissian was joined by his wife Houri Minissian, and children, Vaughn, Karineh, and Lorina in the day to day operations and holistic management of Norchem. The Minissian family and the Norchem team will continue to

carry his legacy and bring success, honor, innovation and growth to Norchem, just as Kevin built it up to be.



### REMEMBERING OUR FOUNDER

Originally founded in 1978 by Kevin Minissian, the company has evolved into a multi-disciplined clean technology firm founded under the principle that innovation can only be driven by customer necessity.



# LEADERSH

Vaughn Minissian
President





Vice President, Engineering & Field Ops



Karineh Minissian

Vice President, Managing Director





Senior Director of Customer Care



Jeonardo Gastelum

Director of National Accounts, Customer Care



Martin Mora

Project & Systems Design Manager



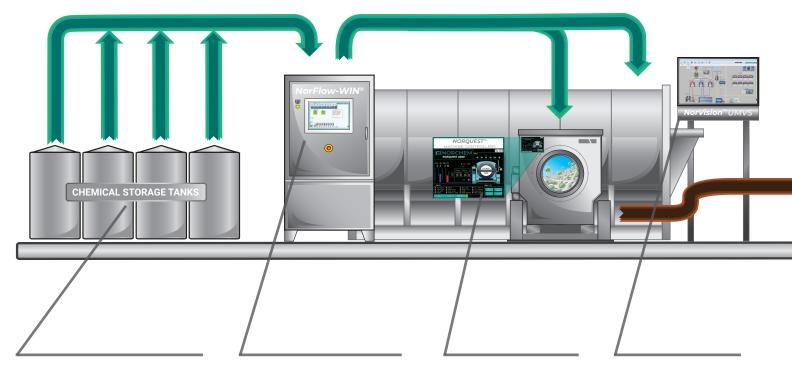
Michael Coussa

Corporate Director of Sales

# THE NORCHE

NUphase PRO® NorFlow-WIN®

**NorQuest**<sup>™</sup> **NorVision**<sup>™</sup>



Liquid laundry chemicals are held in Norchem bulk storage tanks.

**Automated Dosing System** records the volumes and generates production reports.

Retrofit your production machines with the latest in **NEMA** rated controller technology

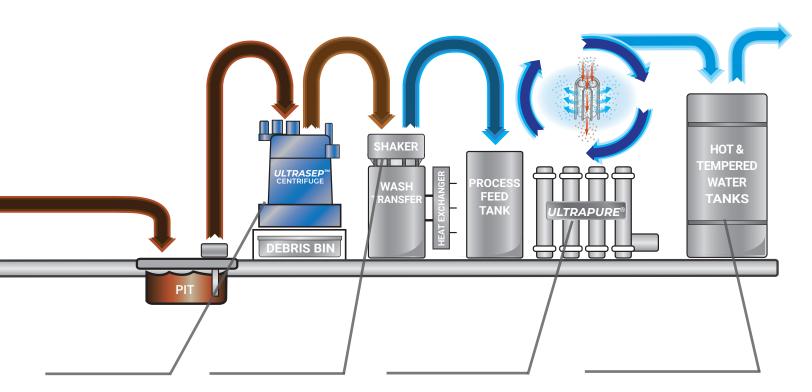
A customized software platform to analyze plant labor productivity and utility usage in real time



# MPROCESS

### FROM START TO FINISH

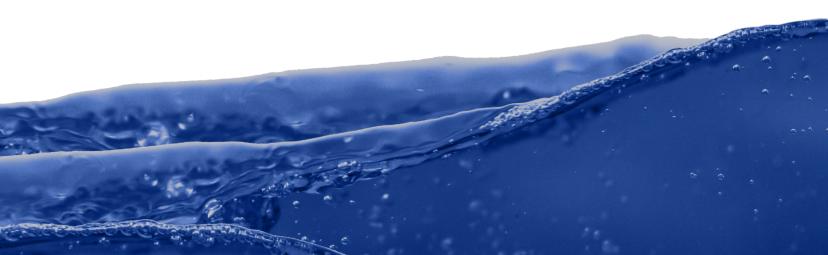
UltraSep<sup>™</sup> Shaker Screen UltraPure<sup>®</sup> Hot & Tempered



Separate suspended solids from the water stream

Screen fine particles like lint from your waste stream

Crossflow membrane filtration removes oil, grease, BOD's, and other microscopic contaminants Recycled water tanks with pump stations supply production with reclaimed water



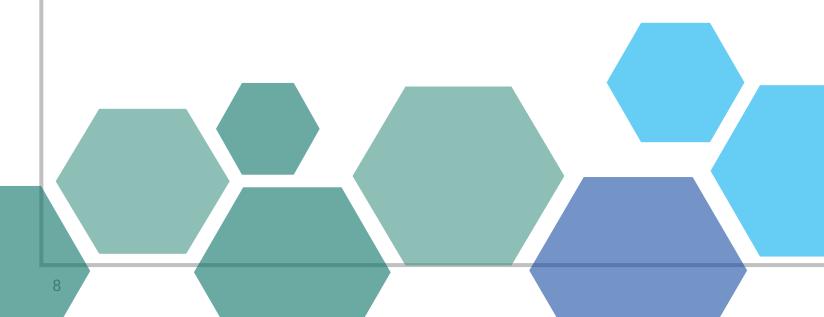
# DIVISIONS-























# **DETERGENT WASH PROGRAMS**

**NUpHase Pro**® is the result of five years research to produce a program that combines alkalinity, powerful detergency, and excellent wetting properties to not only lower wash chemical cost but also improve overall washroom efficiency. This detergent program minimizes fabric degradation and lowers alkali usage.

**ALKAPON™** is a cost-efficient detergent wash program, backed by a proprietary blend of cleaning solutions. Experience longer-lasting fabrics, a reduction in lint & utility costs, a lower rewash percentage, and an improved bottom line.

**NorGEN** $^{\text{TM}}$  is a new generation NPE-APE free biodegradable laundry detergent program specially formulated for cleaning and stain treating all 100% cotton, synthetic and blended textiles used in hospitality, cleanroom, healthcare, linen, and industrial product mixes.

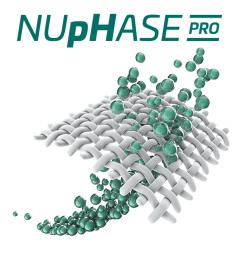
**ColdClean**® is offered as an alternative to hot wash formulas for light to medium soil hotel room linen. The greatest satisfaction has been achieved with bath towels, bed sheets, pillow slips, and pool towel formulas.



All detergent wash programs delivered with

# **NORFLOW-WIN®**

**Automated Chemical Dosing Systems** 



# CLEANER AND BRIGHTER TEXTILES WITH BALANCED WASH FORMULAS

Superb soil removal

Minimizes fabric degradation

Provides excellent wetting and soil suspension, effective FOG emulsification, and faster rinsing

Boosts stain removal with carefully dosed chlorine bleach and liquid alkali

Concentrated caustic-built detergent with strong soil suspension, anti-redeposition, and chelating properties



# SUPERB SOIL REMOVAL AT LESS COST

Eliminate added liquid alkali on select light and medium soil formulas

Reduces lint and residual chemicals that can cause static

Lift FOG (Fats, Oils, and Grease), medicine stains, and protein stains with more efficiency

Deeply penetrates natural and synthetic fabrics

Highly concentrated caustic-built detergent formulated to effectively clean most soils with no separate liquid alkali



# THE 100% BIODEGRADABLE SUSTAINABLY-FOCUSED DETERGENT PROGRAM

100% biodegradable detergent that delivers clean, static-free textiles

Highly effective at removing petroleum & food-based oils

**Excellent wetting properties** 

Designed to increase productivity and fabric lifespan

Advanced non-caustic liquid detergent for all fabric types utilizing the highest-grade blend of biodegradable surfactants



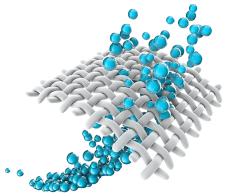
# OUR INNOVATIVE 3-STEP SYSTEM THAT THOROUGHLY CLEANS WITHOUT THE NEED FOR HOT WATER

100% WATER HEATING SAVINGS (on select formulas)

ColdClean® simplifies wash formulas into 3 easy steps: suds, rinse twice, and extract

Thoroughly cleans fabrics, deodorizes, and brightens linens without the need for hot water on most light soil formulas

Specifically formulated surfactant blend paired with a stain removal & whitening agent effective at cleaning light to medium soil in 80°-90° temps







Norchem.shop

# SCAN SIGNATURE OF THE SHOP CHEMICALS

10

# LAUNDRY CHEMISTRY PRODUCTS

















Most chemical products available in bulk packages and sizing. 1 Gal Jug, 5 Gal Jug, 15 Gal Drum, 55 Gal Drum, 250 Gal Tote, 300 Gal Tote



# **ULTRAPURE®**

### WASTEWATER FILTRATION SYSTEM

Advanced Ceramic Membrane Technology

The UltraPure® produces high quality recycled water for applications in commercial laundry, food processing, and many others with no added treatment chemicals. The ultra-filtration process uses an innovative ceramic crossflow membrane design that can reclaim up to 90% of wastewater and 85% of wastewater heat.

- Proven to recycle up to 90% of Effluent Wastewater
- Reduce energy cost for heating water by up to 85%
- Automated Clean in Place (CIP) technology
- Reduce FOG, TSS, TDS, BOD & COD's
- Designed to fit in any plant, big or small, with added capacity for future growth at less cost





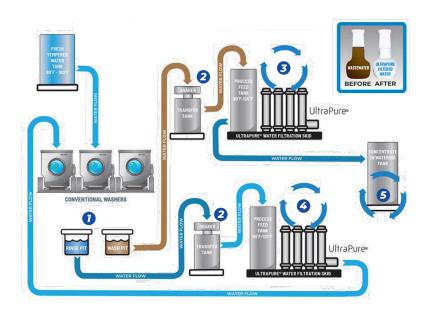
## **OPERATING CAPABILITIES**

Processes Wastewater Temp up to 211°F Wastewater between 0-14 pH Ceramic membranes process FOG above 1000 mg/L Low pressures reduce power demand

# **CONTAMINANT REDUCTIONS**

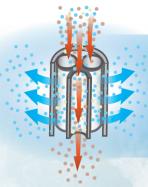
COD up to	97%
BOD up to	93%
TSS up to	100%
(FOG) Oil and Grease up to	99%
Precipitated Heavy Metals up to	99%

# THE PROCESS



- Heavy soil wash water and rinse water can be separated into 2 pits to maximize savings
- Large solids & lint removed through MicroPure System
- The hot recycled water is used on all wash steps
- Rinse water can be treated separately and pumped to the tempered water tank
- Contaminates removed during the 5 filtration process are concentrated daily and disposed of periodically

\*when combined with tertiary Reverse Osmosis filtration, the wastewater does not need to be separated between rinse and wash\*



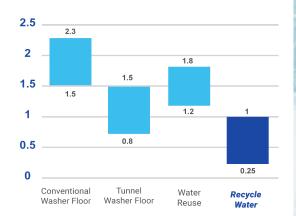
# **MEMBRANE FILTRATION**

PROPRIETARY The UltraPure® can **CERAMIC** significantly reduce the retentate without bypassing to sewer or using a filter press.

WATER **USAGE** COMPARISON

UltraPure® allows for optimal wetting of your textile, while still lowering your gallon/lb usage.

TOTAL PLANT WATER



- Anti-fouling membrane material coating
- Membranes are chemically inert
- No annual filter replacement cost
- Average membrane lifespan is 7-10 years
- Low sensitivity to temperature, pH, chemical & mechanical abrasion
- Channels tolerate more suspended solids unlike hollow fiber and other tubular technologies

# SMART & DEPENDABLE

- ✓ Chemical-free filtration
- √ 100% stainless steel construction
- ✓ Compact footprint & modular for expandability
- ✓ Remote access for easy monitoring and serviceability
- ✓ Membrane health monitoring
- ✓ Data Management & Reporting
- ✓ QC sensors for conductivity, turbidity, pressure, and temperature
- ✓ Early adoption driven by superior flux performance and membrane longevity.

# THE CHOICE IS



# **WATER QUALITY & CONSERVATION PARAMETERS**

Parameter	Fresh Water	Reuse	Multi Media	DAF	<b>ULTRAPURE</b> ®			
Filtration Size	0.0001 µm	150 - 250 μm	2 μm	150 - 250 μm	.02 µm			
TDS	<800 mg/L	1,000 - 1,200 mg/L	450 - 1,000 mg/L	1,300 - 1,800 mg/L	450 - 1,000 mg/L			
TSS	<1 mg/L	181 mg/L	1 - 25 mg/L	25 - 50 mg/L	0 mg/L			
рН	6.5 - 9.0 su	7.0 - 11.0 su	7.0 - 9.0 su	10.5 -12 su	8.5 - 10 su			
Alkalinity	<10 ppm	5 - 15 ppm	5 - 15 ppm	150 - 300 ppm	5 - 200 ppm			
Iron	<0.1 ppm	<1.5 mg/L	<0.5 mg/L	<1.5 mg/L	<0.1 mg/L			
Hardness	<17 ppm	<30 mg/L	<30 mg/L	15 - 50 mg/L	<17 mg/L			
FOG	0 mg/L	5 - 50 mg/L	0 - 50 mg/L	10 - 200 mg/L	0 - 5 mg/L			
POTENTIAL COST SAVINGS								
Recycle/Reuse Savings		10% - 20%	50% - 75%	10% - 30%	50% - 90%			
Energy Savings (water heating)		0%	25% - 30%	0%	50% - 85%			
Wash Chemical Savings		0%	0%	0%	10% - 30%			



# **HOT & TEMPERED**

STORE, SUPPLY, AND HEAT YOUR WATER

### Reliability, Consistency, & Efficiency.

Since hot and tempered water is the life blood of most plant operations, we build our hot and tempered water systems to last. The most robust and reliable systems for any production environment. Our team of automation engineers design and build these systems based on customer specifications.



# WATER STORAGE SYSTEMS



- Transducers to monitor tank fluid levels
- Flat or cone bottom | 200 gallons to 10,000 gallons capacity
- Vertical or horizontal tanks with double-sided welds for durability

# WATER SUPPLY SYSTEMS



- Stainless steel pre-piped pump skids and impellers
- Single, dual, or triplex pump systems with 1 hp - 60 hp pumps
- Temperature, pressure, TDS, and pH monitoring with **UL-approved system controls and Industrial PC HMI** Touchscreen

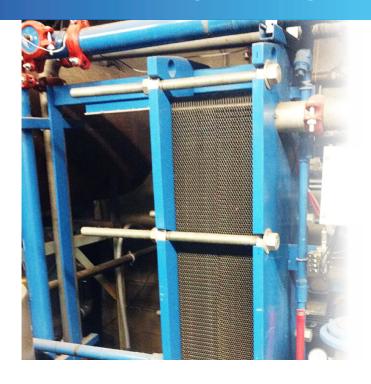
### WASTEWATER HEAT RECLAMATION SYSTEMS



- Our systems are designed to fit any application
- The cooling of wastewater is especially ideal for plants that chemically treat effluent water
- Capture and reuse heat from the wastewater to then heat incoming city water that efficiently produces tempered water for production



# HEAT EXCHANGERS





# PLATE AND FRAME

- Stainless steel base and frame
- Pre-piped with stainless steel and valves
- Automated valves for backflush to prevent solids build up
- CIP cleaning system to clean plates and maintain high performance
- UL-approved panel pre-wired and mounted to the skid
- Industrial PC HMI Touchscreen
  Dashboard

### SHELL AND TUBE

- Stainless steel base and frame
- Stainless steel shell and tubes
- Pre-piped with stainless steel and valves
- Automated valves for backflushing to prevent solids build up
- CIP cleaning system to clean plates and maintain high performance
- UL-approved panel pre-wired and mounted to the skid
- Industrial PC HMI Touchscreen
  Dashboard



Anionic, nonionic, and cationic flocculants in dry powder, liquid emulsion, and liquid solution forms.

Norchem supplies cationic, organic coagulants in liquid form.

### **SCALE INHIBITORS**

Norchem offers innovative scale inhibitors from inorganic substances, which are a frequent problem with water used in a variety of applications such as boilers and cooling towers.

# HEAVY METAL CHELANTS

Chelating agents designed and formulated to enhance the removal of heavy metals from waste streams via precipitation.



# UNISOFT™

### A ROBUST WATER SOFTENING SYSTEM





- Single, duplex, or triplex tank systems
- Skid piping is welded with flange connections to make for easy assembly
- Reduces volume of rinse water necessary during regeneration
- Smart flow sensors monitor precise water volume through the resin to maximize efficiencies and minimize resin regeneration

- **☑** UL & NEMA rated smart controls
- Level sensors for brine tank ensure proper salt concentration
- Tanks meet ASME code and will outlast carbon steel and fiberglass tanks
- Brine is injected with a dedicated pump instead of water pressure for consistent, accurate delivery

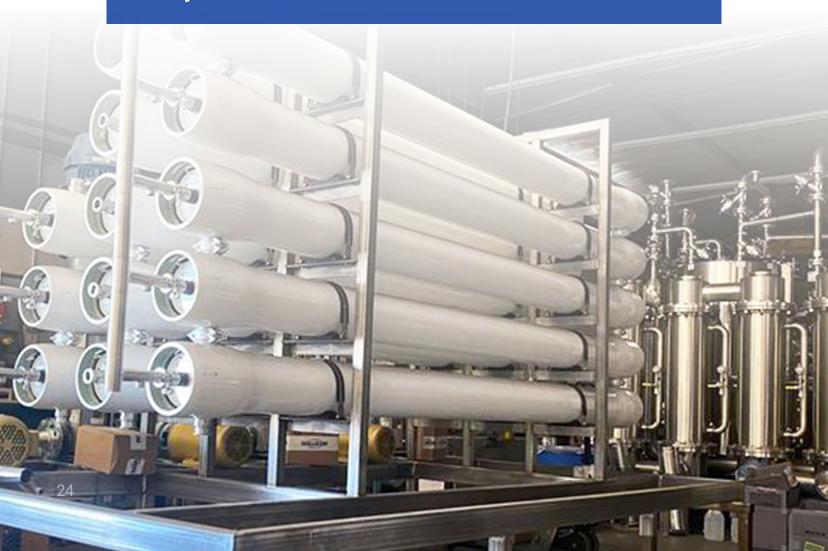


# **RO PURE™**

### **REVERSE OSMOSIS SYSTEM**

If your plant uses water in its production process and requires low TDS process water, then Norchem's Reverse Osmosis System is a worthwhile solution to explore.

Used for incoming water filtration and process water tertiary filtration to remove TDS, ROpure™ utilizes membranes with specialized coating to increase the flux rate by as much as 70%.



# SUPERIOR TDS REDUCTION

# **SPECIFICATIONS**

- Fully automated with UL-approved & NEMA-rated smart controls
- Reduces the overall TDS discharge to sewer after the filtration process
- Stainless Steel Skid Mount

- Fully scalable from 5 GPM to 1000 GPM
- Pre-piped with all stainless-steel components



# TYPICAL APPLICATIONS

### **INCOMING LAUNDRY WATER**

In addition to hard water, high TDS is known to cause problems with linen discoloration. The application of the ROpure™ to the wash process mitigates the risks of hard water that result in spending more money on excess wash chemicals and elongated wash times.

### TERTIARY FILTRATION

ROpure™ will greatly increase the performance of the UltraPure® Wastewater Filtration System by acting as a tertiary control mechanism for the TDS levels coming off the membranes.

### **BOILER FEED WATER**

- ROpure<sup>™</sup> for boiler feedwater filtration increases the cycle time
  of boilers by reducing the number of blow downs



# **PROCESS SOLIDS SEPARATORS**

### MECHANICAL SEPARATION MADE EASY

Norchem offers various suspended solids removal technologies to remove diverse solids from the waste stream. We offer vibrating screens, self-cleaning trench screens, rigid basket filters and vertical bowl centrifuges.

The UltraSep™ Solids Removal System is the superior solution for removing sand, silica, gravel, and other particles from wastewater streams. Excellent option for operations with tight TSS discharge requirements.

**Shaker Screening Systems** remove lint and large particles to lower TSS prior to discharge to the city, and prior to ultra-filtration or wastewater heat exchangers.

The Trenchmaster is a stainless-steel conveyor screening system to remove large solids in the wastewater prior to the clarifier or wastewater pit.





- High rpm rotation reaches 1,500-2,000G
- Minimizes need to pump solids from wastewater pits
- UL and NEMA rated pre-wired panel and mounted to the skid
- Automated self-scraping technology cleans the bowl in between spin cycles

- 98% removal of the settling solids from process water
- Industrial PC HMI Touchscreen Dashboard
- The vertical bowl centrifuge is designed for high volume TSS with specific gravity above 1.2



- **☑** All stainless-steel construction
- Stainless steel screen form 60 mesh to 400 mesh
- UL and NEMA rated panel pre-wired and mounted to the skid
- Industrial PC HMI Touchscreen Dashboard

- 200-to-1,000-gallon transfer tank sizes
- Coarse filtration from 45 to 75 μM (microns)
- Two-stageT304 stainless steel shaker screen and basket strainers for solids collection



- **✓** All stainless-steel construction
- Protects the wastewater pit pumps from clogging
- Self-cleaning conveyor screen
- Solids are easily disposed of in a waste receptacle



# **NORFLOW-WIN®**

# **Automated Chemical Dosing Systems**

**NorFlow-WIN**® is a fully automated chemical dispensing system, engineered to be the most reliable and held to the highest quality standard with the smallest margin of error. Norchem engineers have optimized the production process by designing injection configurations to reduce water energy and chemical usage for laundry

configurations to reduce water, energy, and chemical usage for laundry operators. The system can be used to inject product on timed injection or flow meter-controlled injection.

NorFlow-WIN® systems are available in two versions: G3 for Conventional washers and G4 for CBW's.



# **TECHNICAL FEATURES & BENEFITS**

- Faster pumping for shorter formula times
- Smaller footprint to maximize washfloor space
- Eliminates day tanks
- Injects by volume or time

- Robust touch screen PC and software
- Improved workplace safety by safer chemical handling
- Creates custom production reports to meet your needs
- Custom built to fit any floor





# NORCART™

# **Cart Washer Systems**

The Norchem Cart Washer was built to handle different size carts with adjustable wash cycle times per the customer's specifications. Specialized high pressure drip proof nozzles prevent over-spraying and lower utility consumption. The UL-listed control panel allows for easy access to system settings and metrics.

Norchem pairs its own hard surface cleaning product, KoreKlean™, with its cart washers for optimum cart cleaning and disinfection. This can be offered in 30 Gallon drums, 55 Gallon drums, and 250 Gallon totes.





# **TECHNICAL FEATURES & BENEFITS**

- Fast cycle times ranging 2-3 minutes
- Single Cart and Dual Cart configurations
- Unique drain design to improve runoff
- ☑ User Friendly Automation
- Low Water Usage

- Start and Finish Cycle Indicators
- Dual Blower Fans for high performance drying
- Guaranteed thermal and chemical disinfection

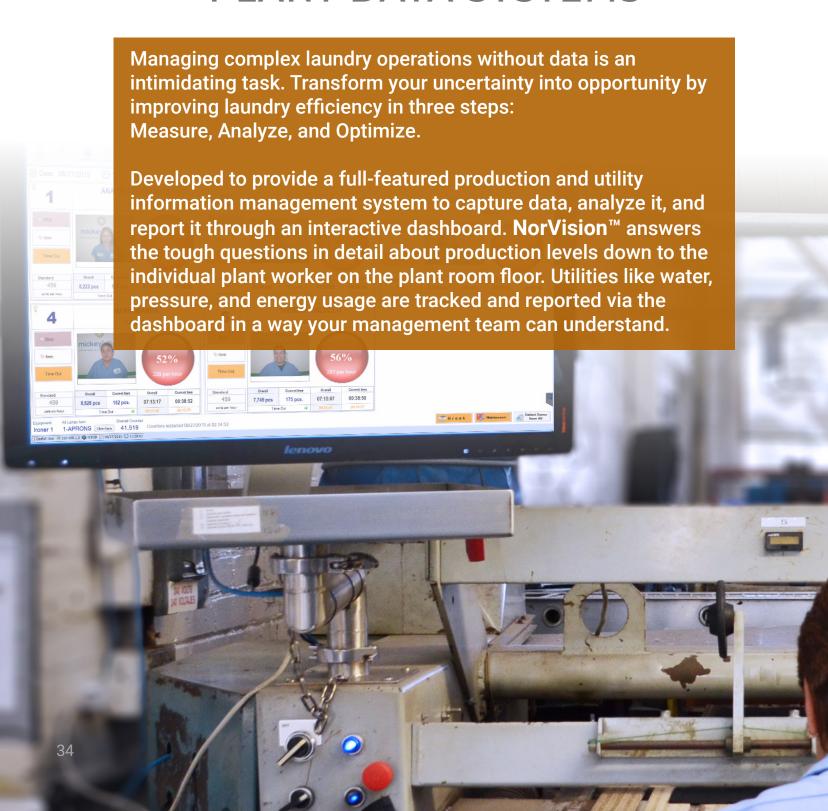
Pair Norchem's Cart Washer with...



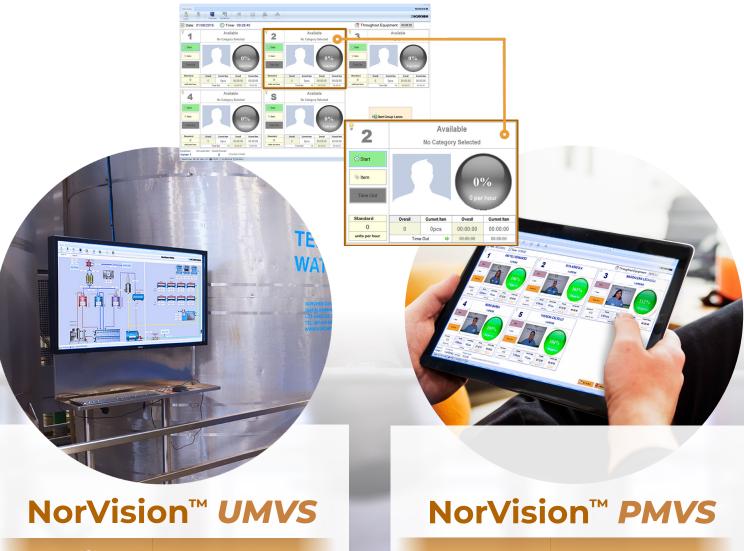


# NORVISION™

# PLANT DATA SYSTEMS



# MEASURE. ANALYZE. OPTIMIZE.



# **Utility** Management Vision System

- A custom software platform to analyze utility usage in real time
- Drive down utility costs and increase profitability
- Water, Temperature, & Gas monitoring for entire wash floor

# **Productivity** Management Vision System

- Overhead displays show employee productivity percentages
- Optimize workflow & increase productivity
- Collects and reports data in real time



# NORQUEST<sup>TM</sup> MACHINE CONTROLLERS

Norchem offers two types of machine controllers: the *NorQuest™* 3000 for smaller machines and the *NorQuest™* 6000 for larger machines. Both types are programmed for washers and dryers. The NorQuest™ features the latest microprocessor technology based on a robust Programmable Logic Controller (PLC) for easy programming and operation. All instructions, formulas, and settings are set via the touchscreen.

Retrofit a mechanically sound washing or drying machine with modern controller intelligence to optimize equipment performance and networkability without the need to purchase a costly new piece of equipment.



## NorQuest<sup>™</sup> 3000 CONTROLLER FEATURES

- Programmable Digital Temperatures (0-250°F)
- Programmable Digital Water Level (0-27 in.)
- 31 Formulas, 35 Steps per Formula

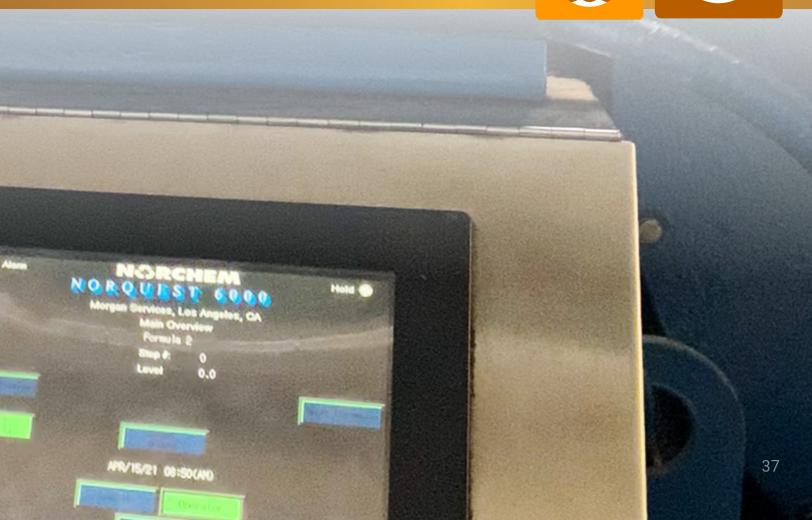
## NorQuest<sup>™</sup> 6000 CONTROLLER FEATURES

- Auto and Manual Lint Blowdowns
- Dry Options: Time, Temperature
  Differential, or Moisture Content
- 99 Wash or Dry Formulas

## The Perfect Combination for Industrial WASHERS & DRYERS









# Fabricated In-House Southern California, USA

Norchem's in-house fabrication team and parts department can supply a diverse range of prefab piping, valves, pump assemblies and more. These are applicable to a wide range of industries, including but not limited to commercial laundry, dye houses, food processing, pharmaceutical, and Oil & Gas.





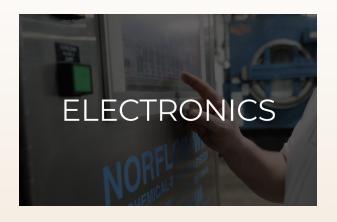
#### Contact Us For New Parts Or Replacements

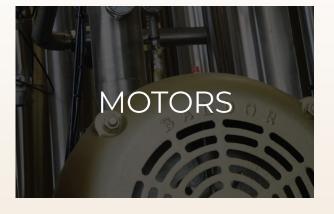
We carry all of the supported components to our system assemblies, from Pump Kits to Electrical Components.

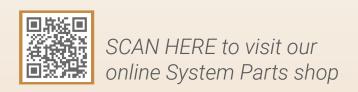














## CLEANING PRODUCTS

BY NORCHEM







### **Hand Cleaners**

KLENZ<sup>™</sup> hand cleaners are FDA approved and come in 75% or 80% alcohol-based Hand Sanitizer, or as Hand Soap.

#### KLENZ™ 75% alcohol-based:

isopropyl alcohol-based antiseptic topical solution that helps reduce bacteria that potentially can cause disease when water and soap are not immediately available. This alcohol-based formula is formulated according to the Food and Drug Administration (FDA) guidelines using ingredients that meet USP grade requirements.

#### KLENZ™ 80% alcohol-based:

ethyl alcohol based antiseptic topical solution that helps reduce bacteria that potentially can cause disease when water and soap are not immediately available. This alcohol-based formula is formulated according to the Food and Drug Administration (FDA) guidelines using ingredients that meet USP grade requirement. Convenient container sizes start at 8 oz bottles and are ideal for when you are on the go.

#### **KLENZ™ Hand Soap:**

This simple formulation incorporates a mild surfactant, recommended for this type of product because of its skin mildness; it is a concentrate of surfactants and emollients which offers gentle but effective cleansing leaving skin refreshed. In addition to household use, Klenz™ Hand Soap is ideal for use in restaurants, office buildings, school, food service, and health clubs.

# KLEN



SIZE	PACKAGE
16 oz	Bottle w/ trig spray
32 oz	Bottle w/ trig spray
32 oz	Bottle w/ pump
1 Gal	Jug   4x1 Case
5 Gal	Carboy
15 Gal	Drum
30 Gal	Drum
55 Gal	Drum



Available as 75% or 80% Hand Sanitizer, & Hand Soap

- Kills 99.999% of common germs that can cause disease
- Evaporates quickly and leaves no sticky residue
- pH: 6.5-8.5
- Ideal for when you are on the go, and for an office or commercial type setting
- Thoroughly cleans hands yet is gentle to the skin



### **Surface Cleaners**

**KoreKlean™ Hard Surface Disinfectant** is a non-flammable, non-quaternary, antimicrobial cleaner designed for use on various hard surface cleaning applications. KoreKlean™ has low corrosivity, making it effective for household and institutional cleaning applications, including removing soap scum, grease, and hard water deposits.

**KoreKlean™ All-Purpose Cleaner** offers exceptional cleaning strength on multiple non-porous surfaces and various soils. It was formulated with a well-balances blend of surfactants and solvent to remove, penetrate, soften, and emulsify soils like grease, oil, dirt, grime, soap, scum, and body oils from hard non-porous, washable surfaces.



# KOREKLEAN



SIZE	PACKAGE
16 oz	Bottle w/ trig spray
32 oz	Bottle w/ trig spray
32 oz	Bottle w/ pump
1 Gal	Jug   4x1 Case
5 Gal	Carboy
15 Gal	Drum
30 Gal	Drum
55 Gal	Drum



Available as Hard Surface Disinfectant & All-Purpose Cleaner

Cleans, disinfects, and deodorizes - leaves a fresh clean scent

Effective and efficient soap scum and hard water salt removal

Low toxicity - safe in its intended uses for consumer

Disinfects without harsh chemicals and without chlorine odors

Environmentally-friendly, biodegradable in 7 days

Removes buildups of dirt, oil, grease, grime, ink, and food soils

## Pair KoreKlean™ with the Electrostatic Portable FOGGER



**Norchem's Portable Electrostatic Fogger** utilizes electrostatic technology to charge each droplet to provide effective application of formulations. The droplets stay separated due to the charged nature allowing uniform coverage on entire targeted surface. Pair your new electrostatic Fogger with Norchem's KoreKlean™ for the most efficient clean sweep.

This fogger is ideal for use in spraying commercial and residential areas, such as: hotels, schools, green-houses, warehouses, medical facilities, sanitation, germicidal treatments and disease control programs.













- Multi-Purpose Stain Remover
- Removes Ink, Paint, Grease
- Dropper caps for easy use and no-drip safety
- Removes Rust From Fabric
- Keeps fabric safe, targets rust
- Dropper caps for easy use and no-drip safety



## SCAN TO VISIT NorchemCorp.com

