PETROLEUM INDUSTRY

OIL RID:
OIL SPILL REMOVER

BIOXY S NEW **:**
SOLID PERACETIC ACID – SANITIZER

EQUATION:
PREVENTS SCALE AND SLUDGE FORMATION

BACT O MAX:
MULTIPLE SPORE BLEND FOR ODOR CONTROL
QUICK CLEANING ACTION – ORGANIC REMOVAL

BOIL KLIN :
BOILER WATER TREATMENT - SCALE & CORROSION INHIBITOR

COOL T KLIN:
SCALE AND CORROSION INHIBITOR

CLR NF:
A NON FOAMING ACID DETERGENT

CORROSION FREE:
CORROSION INHIBITOR PRODUCT

PREVENT:
CORROSION INHIBITOR PRODUCT

BOIL KLIN S:
BOILER WATER TREATMENT - SCALE & CORROSION INHIBITOR

REACTION 2000:
LIQUID ALKALINE NON-FOAMING NON-CHLORINATED
CLEANER FOR CIP SYSTEMS

atomes 6065 Thimens, Saint Laurent (Quebec) Canada H4S 1V8 Tel. :(514) 745 2597 Fax: (514) 745 5176

POLY QUAT:
WATER TREATMENT - QUATERNARY BIOCIDES

SAFE ACID NF UNIQUE **:**
NON FOAMING ORGANIC ACID BASED CLEANER - PHOSPHATE FREE

OXY CHLOR 12:
SANITIZER - SODIUM HYPOCHLORITE

SOLID UNIQUE **:**
NON-FOAMING DEGREASER
CAUSTIC-FREE, CHLORINE-FREE

NT PRODUCT UNIQUE **:**
BIOTECHNOLOGY BASED - ELIMINATES VFAs and H_2S

FORMUL-A-CID:
CONCENTRATED ACID CLEANER

DE FOAM:
DEFOAMER

ATO TRAK :
BIODEGRADABLE HARD SURFACE - CLEANER AND BIOSTIMULANT

ATO ZYME :
MULTIPLE SPORE BLEND CONCENTRATE

ATO FLOC 919 Flocculant UNIQUE **:**
ANIONIC GRANULAR GRADE POLYMER

ATO PAC 101 UNIQUE **:**
POLYALUMINUM CHLORIDE – INORGANIC COAGULANT

ATO FLOCs Floculants :
CATIONIC POLYACRYLAMIDE

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OIL RID
OIL SPILL REMOVER

DESCRIPTION
OIL RID dissolves and disperses oil slicks on water rendering them harmless to birds, fish, and other aquatic Life. **OIL RID** will dissolve slick oil spills on roadways, runways, racetracks, parking lots, and floors. This will reduce their flammability, and make them water soluble so they can be rinsed with ease. **OIL RID** is safe to use on cement, asphalt, and other paving and flooring surfaces.

OIL RID is non toxic, non flammable, and biodegradable.

PROPERTIES

Appearance	Clear amber liquid
pH (solution 1%)	~ 7.5
Specific gravity	~1.04
Upper cloud point	~ 43°C (110°F)

APPLICATION
ON WATER: Spray **OIL RID** on oil spill. It will slowly Turn milky white then dissipate.
ON HARD SURFACES: Spray **OIL RID** uniformly over oil Spill. Allow **OIL RID** to remain in contact with spill for 3-5 minutes, then rinse with water to the drainage. If instant removal is required, brush the treated area with A broom, the rinse with water.

PRECAUTIONS
OIL RID is a non-toxic compound, but ordinary Precautions should be taken when any chemical is used.
Do not swallow. In case of eye or skin contact, rinse immediately with water for 15 minutes. Obtain medical attention.

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BIOXY S NEW

SOLID PERACETIC ACID – SANITIZER

Unique to atomes

DESCRIPTION

BIOXY S is a powdered product that generates peracetic acid in water. **BIOXY S** was formulated to sanitize surfaces in contact with food, reservoirs, C.I.P. evaporators, fillers, aseptic equipment and pasteurisers found in dairies, wineries, breweries, and food, beverage and meat processing and packaging plants. **BIOXY S** is used in as a sanitizer water, wastewater treatment plants and petroleum industries. Use **BIOXY S** to sanitize water reservoirs.

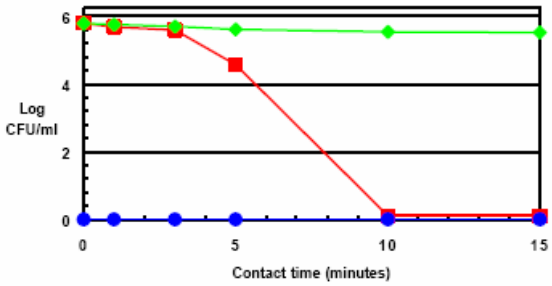
DIRECTIONS FOR USE

Use **BIOXY S** on previously cleaned equipment. Use at a concentration of 0.2% (2 g **BIOXY S** in 1 liter of water ; or 20 g **BIOXY S** in 10 liters of water; or 200 g **BIOXY S** in 100 liters of water). This concentration of 0.2% yields 200 ppm of active peracetic acid. Allow a 0.2% solution to circulate at 5-40^{0}C (40-105^{0}F) and keep in contact for at least 60 seconds. Drain. Do not rinse with water (active ingredients break down into water, oxygen and vinegar). **BIOXY S** can be used from a concentration ranging from 0.2% up to 2%. **BIOXY S** at 2% (20 g/L) concentration is considered as a chemical sterilant.

PROPERTIES

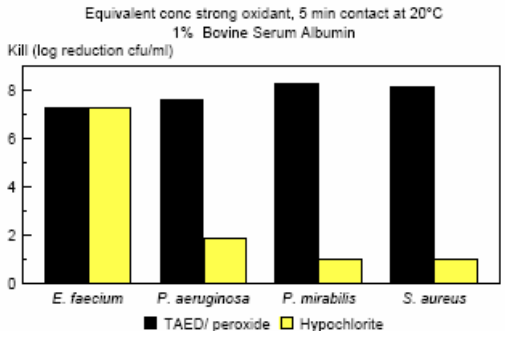
Appearance: White powder
Odour: Mild
Solubility: Complete

Effect of **BIOXY S** against Legionella pneumophila



- **Red BIOXY S**
- **Green Perborate**
- **Complete Kill**

Soil tolerance of **BIOXY S**



- **BIOXY S**
- **Hypochlorite**

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Comparison
BIOXY S NEW vs Liquid Peracetic Acid

Description	BIOXY S - atomes	Liquid Peracetic acid
Activity	10% active (2 times more concentrated)	5% active
Concentration used	0.2% 2 g / L = 20g / 10 L	0.4% 4 ml / L
Physical status	Solid	Liquid
Transportation	Safe	Hazardous
Odor	No odor	Offensive – Strong acetic acid smell
pH	Reacts with water to generate peracetic acid at **neutral** pH levels	The pH is highly **acidic**
Corrosion / surfaces	No induced corrosion	Extremely corrosive to surfaces
Handling / employees	Safe to handle	Extremely dangerous to handle
Storage	Requires a limited place	Requires large and a secured space to prevent leaking
Chemical stability	Stable	Decomposes if exposed to heat or organic materials

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EQUATION

PREVENTS SCALE AND SLUDGE FORMATION

DESCRIPTION

EQUATION is a semi-viscous liquid engineered to prevent the formation of diverse scales (i.e. calcium carbonate, calcium oxalate, etc.). Once **EQUATION** is used at a continual basis, acid descaling is not necessary. **EQUATION** is ideal for RO membrane.

APPLICATION

EQUATION must be used between the range of 2-50 ppm depending on the hardness and types of salts.

PROPERTIES

Appearance: Yellowish liquid
Odor: Mild
pH (as is):6.50±0.50
Specific gravity @ 25°C: 1.190±0.050
Solubility: Complete

PRECAUTION

EQUATION may cause irritation with eye and skin contact. In case of eye contact, rinse with copious amount of water for at least 15 minutes and if irritation persists, consult physician. When handling, use rubber gloves and safety chemical goggles. Do not breath dust particles.

INGREDIENTS

Contains: wetting and sequestering agents, etc.

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BACT O MAX

MULTIPLE SPORE BLEND FOR ODOR CONTROL
QUICK CLEANING ACTION – ORGANIC REMOVAL

BENEFITS

-Components are listed on the Canadian Domestic Substances List (DSL)

-Designed to provide an environmentally safe solutions for many types of organic wastes and odor problems.

-Biodegrades the organic contents of ***garbage*** completely to CO_2 and H_2O. Its biostrains specifically promote optimum enzymatic activity of protease, lipase, amylase and cellulase, and provides outstanding breakdown of protein, starch, carbohydrates, fats, oils and grease.

-It is designed to provide exceptional ***odor control*** performance in septic and waste treatment.

APPLICATIONS

Fill the truck reservoir with clean warm water. The reservoir has to be clean and free of disinfectants. Fill the reservoir with clean warm water and then add **BACT O MAX** to clean water prior vaporization. Mix 0.1% to 1% **BACT O MAX** in the water.

1% **BACT O MAX** yields 5.4×10^5 CFU/ml. That is 540 000 bacteria per ml; or 540 million bacteria per L vaporized.

0.1% **BACT O MAX** yields 5.4×10^4 CFU/ml. That is 54 000 bacteria per ml; or 54 million bacteria per L vaporized.

In the beginning, do a shock treatment that is a higher concentration for the bacteria to get adapted to the new environment; then reduce the concentration to maintain the biodegradation process.

PRODUCT CHARACTERISTICS

Bacteria count:	5.4×10^7 CFU/ml
Bacteria type:	Blend of *Bacillus* spores
Salmonella/*Shigella*	Negative
Stability	2 years at 2°C to 35°C (35°F-95°F)
Enzyme Production	Lipase, Protease, Amylase and Cellulase
Bacterial Pathways	Aerobic & facultative anaerobic
pH range	5.0 –9.8
Temperature range	3°C to 63°C (38°F-145°F)

CHARACTERISTICS

-High enzyme production of: Lipase, Protease, Amylase and Cellulase.

-Grease biodegradation outperforms other competitive formulations in laboratory and field studies.

-Superior germination and outgrowth results in increased bacterial activity in a variety of organic waste applications.

-Accelerated enzymatic degradation – Synergistic action allows the multiple spore blend to work faster and more effectively.

-General organic waste degrader.

-Enhanced aerobic and anaerobic performance, designed for applications subject to aerobic and anaerobic environments.

DOSAGE

Specific recommendations, can be provided by your atomes representative.

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BOIL KLIN

BOILER WATER TREATMENT
SCALE & CORROSION INHIBITOR

DESCRIPTION

BOIL KLIN is a concentrated blend of chemicals designed to prevent deposition and corrosion in low and medium pressure boilers, which have low levels of make-up. **BOIL KLIN** contains diverse anti-corrosion agents and a neutralizing amine to provide corrosion protection in both the boiler and the condensate system. Diverse sequestering and chelating agents are included to disperse any scale forming materials that may enter into the boiler water.

BENEFITS

- Easy to administer single product
- Prevents boiler corrosion
- Concentrated formula
- Economical
- Simple to test product
- Prevents scale deposition

DOSAGE

The dosage of **BOIL KLIN** will vary depending on plant conditions. Specific recommendations, can be provided by your atomes representative.

FEEDING

BOIL KLIN may be fed directly to the boiler or be added to either the feed water or condensate storage tanks. No special materials of construction are required for the chemical feed system.

PRODUCT SPECIFICATIONS

- Specific Gravity: 1.125
- Freezing Point: Not available
- Appearance: Clear liquid
- Odour: Amine
- pH (1%): 11.50
- Flash Point: >95°C

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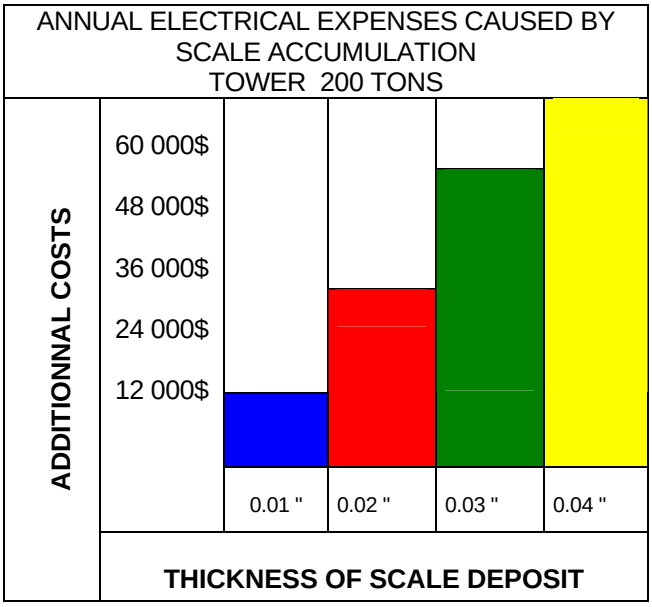
BOIL KLIN

SCALE AND CORROSION INHIBITOR

BOIL KLIN helps you to keep your water free of solids and impurities in order to increase the efficiency of your equipments.



Cooling tower of 200 tons that operates 24 hours per day with a 70% charge. It consumes 2600 kWh per day. And 0.075$ per kWh. The electrical costs daily are 195, 00$

LOSS OF CALORIFIC TRANSFER CAUSED BY SCALE DEPOSITS	
Thickness of scale	Efficiency loss
0.006 "	30%
0.012 "	45.9%
0.024 "	63.9%
0.036 "	71.8%

BOIL KLIN is a unique water treatment……..

One product, One operation!

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COOL T KLIN

SCALE AND CORROSION INHIBITOR

APPLICATION

COOL T KLIN is a concentrated blend of chemicals designed to prevent deposition and corrosion in cooling towers, which have low levels of make-up. **COOL T KLIN** contains diverse anti-corrosion agents to provide corrosion protection in the cooling tower. Diverse sequestring and chelating agents are included to disperse any scale forming materials that may enter into the cooling tower water.

BENEFITS

- Easy to administer single product
- Economical
- Prevents boiler corrosion
- Simple to test product
- Concentrated formula
- Prevents scale deposition

DOSAGE

The dosage of **COOL T KLIN** will vary depending on plant conditions. Specific recommendations, can be provided by your ATOMS representative.

COOL T KLIN may be fed directly to the cooling tower or be added to either the feedwater or condensate storage tanks. No special materials of construction are required for the chemical feed system.

PROPERTIES

Appearance: Clear yellowish liquid
pH (1%): 11.50 ±1.00
Specific Gravity: @ 25°C: 1.125 ±0.050
Odour: Amine

PRECAUTIONS

COOL T KLIN contains potassium hydroxide. May cause severe burns. Do not take internally. If ingested, give 3-4 glasses water or milk to drink and seek medical attention. DO NOT INDUCE VOMITING. If product comes in contact with eyes, flush for at least 15 minutes with a large amount of water. If irritation persists, consult a physician.

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CLR NF

A NON FOAMING ACID DETERGENT

DESCRIPTION

CLR NF is a concentrated acid detergent containing non foaming surfactants. This chemical will efficiently remove mineral deposits. It is extremely good for cleaning in place. **CLR NF** is ideal for CIP and pipelines cleaning.

APPLICATION

CLR NF is used at a concentration of 0.5-2.0% (5 mL/L to 20 mL/L ; 0.625 oz / gal to 2.56 oz/gal) for cleaning in place. A concentration of 5.0% (50 mL/L ; 6.4 oz/gal) is recommended for manual cleaning. Temperatures in excess of 50ºC should be avoided when using this chemical.

PROPERTIES

Appearance: Clear liquid

pH (1% solution): 2.00±1.00

Specific gravity @ 25°C: 1.442±0.050

PRECAUTIONS

Do not take internally. If ingested, give 3-4 glasses water to drink and seek medical attention. DO NOT INDUCE VOMITING. If product comes in contact with eyes, flush for at least 15 minutes with a large amount of water. If irritation persists, consult a physician.

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CORROSION FREE

CORROSION INHIBITOR PRODUCT

DESCRIPTION

CORROSION FREE is a concentrated blend of chemicals designed to prevent corrosion, scale and the formation of red water in industrial closed cooling - and hot water systems filled with soft/softened water. It is also applied in once through cooling systems and in domestic and potable water supply lines and fire fighting systems to prevent corrosion and scaling problems. **CORROSION FREE** contains diverse anti-corrosion agents and neutralizing amines to provide corrosion protection in various systems. **CORROSION FREE** contains also other effective corrosion inhibitors such as silicate and tetrapotassium pyrophosphate.

BENEFITS

Easy to administer single product.
Economical. Extends pipe and equipment life.
Simple to test product. Easy and safe to handle liquid product.
Concentrated formula.
Multiple anti-corrosion agents.
Prevents corrosion and deposit formation in industrial and domestic water supply systems.
Effectively controls corrosion in corrosive, low hardness waters.
Prevents formation of “red water” .
Potable grade - can be used in domestic and potable water lines.

DOSAGE

The dosage of **CORROSION FREE** will vary depending on plant conditions. Specific recommendations, can be provided by your atomes representative.
CORROSION FREE may be fed directly to the boiler or be added to either the feed water or condensate storage tanks. No special materials of construction are required for the chemical feed system.

PRODUCT SPECIFICATIONS

- Specific Gravity: 1.10
- pH (1%): Mildly alkaline
- Odour: Amine
- Appearance: Clear liquid

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PREVENT
CORROSION INHIBITOR PRODUCT

DESCRIPTION
PREVENT is a concentrated blend of chemicals designed to prevent corrosion, scale and the formation of red water in industrial closed cooling - and hot water systems filled with soft/softened water. It is also applied in once through cooling systems and in domestic and potable water supply lines and fire fighting systems to prevent corrosion and scaling problems. **PREVENT** contains diverse anti-corrosion agents (i.e. silicate and tetrapotassium pyrophosphate) to provide corrosion protection in various systems.

BENEFITS
Easy to administer single product.
Economical. Extends pipe and equipment life.
Simple to test product. Easy and safe to handle liquid product.
Concentrated formula.
Multiple anti-corrosion agents.
Prevents corrosion and deposit formation in industrial and domestic water supply systems.
Effectively controls corrosion in corrosive, low hardness waters.
Prevents formation of “red water” .
Potable grade - can be used in domestic and potable water lines.

DOSAGE
The dosage of **PREVENT** will vary depending on plant conditions. Specific recommendations, can be provided by your atomes representative.
PREVENT may be fed directly to the boiler or be added to either the feed water or condensate storage tanks. No special materials of construction are required for the chemical feed system.

PRODUCT SPECIFICATIONS
- Specific Gravity: 1.10
- pH (1%): Mildly alkaline
- Odour: Bland
- Appearance: Clear liquid

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BOIL KLIN S

BOILER WATER TREATMENT
SCALE & CORROSION INHIBITOR

DESCRIPTION

BOIL KLIN S is a concentrated blend of chemicals designed to prevent deposition and corrosion in low and medium pressure boilers, which have low levels of make-up. **BOIL KLIN S** contains diverse anti-corrosion agents and sulfite to provide corrosion protection in both the boiler and the condensate system. Diverse sequestering and chelating agents are included to disperse any scale forming materials that may enter into the boiler water.

BENEFITS

- Easy to administer single product
- Prevents boiler corrosion
- Concentrated formula
- Economical
- Simple to test product
- Prevents scale deposition

DOSAGE

The dosage of **BOIL KLIN S** will vary depending on plant conditions. Specific recommendations, can be provided by your atomes representative.

FEEDING

BOIL KLIN S may be fed directly to the boiler or be added to either the feed water or condensate storage tanks. No special materials of construction are required for the chemical feed system.

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REACTION 2000

LIQUID ALKALINE NON-FOAMING NON-CHLORINATED CLEANER FOR CIP SYSTEMS

DESCRIPTION

REACTION 2000 is a special alkaline cleaner for CIP systems and pipeline degreasing. **REACTION 2000** was engineered as a chlorine free cleaner for stainless steel. It is a non foaming cleaner. **REACTION 2000** cleans both organic and inorganic deposits.

APPLICATION

GENERAL CLEANING: use at 0.5%-3.0% solutions, circulate for 10 - 30 minutes, then rinse. For specific uses, follow Company Representative's instructions and methods of use.

PROPERTIES

Appearance : Clear yellowish liquid
pH (1% solution):12.50±0.50
Specific gravity @ 25^{o}C : 1.220 ± 0.010
Solubility: Instant and complete

INGREDIENTS

Contains : Potassium hydroxide, dispersants, etc.

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POLY QUAT

WATER TREATMENT
QUATERNARY BIOCIDES

CAS Number- 68424-95-3 and 68424-85-1

POLY QUAT is a radically new development based upon atomes "Twin Chain" quaternary ammonium compound technology. **POLY QUAT** , when evaluated by accepted laboratory procedures, provides superior bactericidal, algaecides and fungicidal activity far beyond that achieved with other available quaternary ammonium compounds. This provides the formulator with unequaled latitude in the design of biocidal products.

Chemical Composition – Typical
Active Ingredients POLY QUAT
Alkyl (C14 50%, C12 40%, C16 10%) Dimethyl Benzyl Ammonium Chloride 2.0%
Octyl decyl dimethyl ammonium chloride 1.5%
Dioctyl dimethyl ammonium chloride 0.6%
Didecyl dimethyl ammonium chloride 0.9%

Specifications
pH (1% Active Solution): 7.00
POLY QUAT contains 5% active polyquats. When used at:
-0.2% (2 mL/L), it generates 100 active ppm
-0.4% (4 mL/L), it generates 200 active ppm
-0.8% (8 mL/L), it generates 400 active ppm
-1.0% (10 mL/L), it generates 500 active ppm

Summary of the superior performance characteristics of POLY QUAT :

- Broad spectrum biocidal activity against both gram-positive and gram-negative organisms.
- Increased hard water tolerance.
- Superior fungicidal performance.

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MICROBIAL ACTIVITY

Test Organism	Minimum Effective Concentration
Staphylococcus aureus	250 ppm active quaternary
Salmonella choleraesuis	250 ppm active quaternary
Pseudomonas aeruginosa	450 ppm active quaternary
Pseudomonas cepacia	450 ppm active quaternary
Escherichia coli	250 ppm active quaternary
Serratia marcesens	250 ppm active quaternary
Brevibacterium ammoniagenes	250 ppm active quaternary
Salmonella typhi	250 ppm active quaternary

Test Organism	Hard Water Concentration	Minimum Effective Concentration
Pseudomonas aeruginosa	0 ppm/$CaCO_3$	450 ppm active quaternary
	300 ppm/$CaCO_3$	850 ppm active quaternary
	400 ppm/$CaCO_3$	850 ppm active quaternary
	500 ppm/$CaCO_3$	1000 ppm active quaternary
Salmonella choleraesuis	0 ppm/$CaCO_3$	250 ppm active quaternary
	300 ppm/$CaCO_3$	600 ppm active quaternary
	400 ppm/$CaCO_3$	600 ppm active quaternary
	500 ppm/$CaCO_3$	700 ppm active quaternary
Pseudomonas cepacia	400 ppm/$CaCO_3$	850 ppm active quaternary

POLY QUAT has been cleared by the FDA as an “Indirect Food Additive’’, under 21 CFR part 178.1010 at a concentration of 150-400 ppm active, and requires no water rinse. This clearance covers the usage of **POLY QUAT** on food processing equipment and utensils and food contact surfaces in public eating places. In addition, the use of sanitizing solutions based on **POLY QUAT** fulfills the criteria of the Grade “A” Pasteurized Milk Ordinance 1978 Recommendations of the United States Public Health Service.

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Fungicidal Activity
Test Organism Ten Minute Killing Dilution (100% Active)
Trichophyton mentagrophytes 1:8000 (125 ppm)

APPLICATIONS
POLY QUAT will control algae and bacterial slimes found in recirculating cooling tower water and oil field water floods. They help clean and loosen slime deposits from cooling and flooding system surfaces. When used in slug doses, no other biocide is often required.

Application	**Recommended Use-levels on a 100% Active Basis**
Recirculating Cooling Tower	
- Initial Dosage	20-30 ppm
- Subsequent Dosages	7-10 ppm
Oil FieldWater Flood	
- Continuous Addition	5-10 ppm
- Intermittent Addition	5-20 ppm

Recirculating Cooling Towers
Initially use 20 ppm active quaternary. Increase to 30 ppm if satisfactory results are not obtained. Repeat the initial dose every 7 days or more frequently if needed. Once control is achieved, lower dosage to 7-10 ppm to maximize cost performance. Repeat weekly as needed. Should slime develop again, go back to initial dosage. Cooling tower waters which are inherently low in algae growth and bacteria count may be adequately controlled by the lower range of these dosages, and slug fed every 7 days.

Oil Field Water Flood/Salt Water Disposal System
DO NOT APPLY IN MARINE AND ESTUARINE OIL FIELDS.
For control of slime-forming and sulfate-reducing bacteria in oil field water flood or salt water disposal systems, add 5-10 ppm active quaternary continuously. Levels for effective control will vary depending on conditions at the site. For intermittent use, dose at a rate of 5-20 ppm active for 4-8 hours per day, one to four times a week as needed to maintain control.

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SAFE ACID NF UNIQUE

A NON FOAMING ORGANIC ACID BASED CLEANER

PHOSPHATE FREE

DESCRIPTION
SAFE ACID NF is a concentrated new-technology based, phosphate-free organic acid cleaner. This chemical will efficiently remove mineral deposits. It is extremely good for cleaning in place and for floor cleaning. **SAFE ACID NF** is safer than all known inorganic deposits removers.

APPLICATION
SAFE ACID NF is used at a concentration of 0.5-5.0% (5 mL/L to 50 mL/L for cleaning in place and for removing scale deposits from floors).

A concentration of 5.0% (50 mL/L ; 6.4 oz/gal) is recommended for manual cleaning. Temperatures in excess of 50ºC should be avoided when using this chemical.

PROPERTIES
Appearance: Clear liquid
pH (1% solution): 3.00±1.00
Specific gravity @ 25°C: 1.120±0.050

INGREDIENTS
Contains: urea- monohydrochloride and urea-sulfate

MADE IN CANADA

FOR INDUSTRIAL ESTABLISHMENTS

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OXY CHLOR 12

SANITIZER - SODIUM HYPOCHLORITE

DESCRIPTION
OXY CHLOR 12 is a solution of sodium hypochlorite. **OXY CHLOR 12** is a sanitizer that controls microorganisms such as bacteria, yeast and mold.

APPLICATION
Cleaning: Use **OXY CHLOR 12** at a concentration of 0.2 to 3% in water.
For food plant use, food contact surfaces should be rinsed with abundant potable water before re-use.
Sanitation in food plants (meat, fish, poultry, dairy and other food plants)**:** use at a concentration of 0.2% maximum (2ml per liter). Do not rinse if concentration is at 200 ppm available chlorine or below.
For fish processing plants: Use to treat influent processing water for microbial control. Product should be fed into incoming water source with appropriate metering equipment and monitoring controls so as not to exceed 3 ppm total chlorine.
For water and wastewater plants: Use to treat influent processing water for microbial control. Product should be fed into incoming water source with appropriate metering equipment and monitoring controls so as not to exceed 3 ppm total chlorine.

PROPERTIES
Appearance: Yellowish liquid
pH (1% solution): alkaline
Available chlorine~ 10%
PRECAUTIONS
OXY CHLOR 12 may cause severe burns. Do not take internally. If ingested, give 3-4 glasses water or milk to drink and seek medical attention. DO NOT INDUCE VOMITING. If product comes in contact with eyes, flush for at least 15 minutes with a large amount of water. If irritation persists, consult a physician.
INGREDIENTS
Contains: Sodium hypochlorite

MADE IN CANADA

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SOLID UNIQUE

NON-FOAMING DEGREASER

CAUSTIC-FREE, CHLORINE-FREE

DESCRIPTION

SOLID is a powdered cleaner formulated to clean surfaces in contact with food, reservoirs, C.I.P. evaporators, fillers, aseptic equipment and pasteurisers found in dairies, wineries, breweries, and food, beverage and meat processing and packaging plants. **SOLID** is caustic free and chlorine free ideal to clean and remove carbonised materials from pipeline systems in petroleum industries.

DIRECTIONS FOR USE

Usually, **SOLID** is used at a concentration of 0.2 to 3% for CIP systems. Dilute 2 to 30 g **SOLID** in 1 liter water. Let it circulate for at least 10 to 30 minutes then rinse with abundant potable water.

PROPERTIES

Appearance: White powder
Odour: Mild
pH (1% sol.): 10.00±0.50
Specific gravity @ 25°C: 1.350±0.050
Solubility: Complete

INGREDIENTS

Contains: Sodium meta silicate, sodium percarbonate and sequestering agents, etc.
MADE IN CANADA

For industrial use only

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NT PRODUCT UNIQUE

BIOTECHNOLOGY BASED
ELIMINATES VFAs and H_2S

DESCRIPTION

NT PRODUCT is an environmentally benign, non-toxic and non-biocidal iquid for odor control. Under anaerobic conditions, bacteria metabolize organic carbon compounds to produce malodorous and explosive chemicals. These chemicals, (which include volatile fatty acids (VFA's), hydrogen sulfide (H_2S) and mercaptans) create nuisance odors objectionable to citizens leaving near or around municipal waste treatment plants. **NT PRODUCT** effectively and economically prevents the production of VFA's, H_2S and mercaptans, thereby stopping odors from formin thus creating a pleasant living environment.

DESCRIPTION

NT PRODUCT is a powdered product that is applied at low concentrations depending upon the initial concentration of hydrogen sulfide and/or volatille fatty acids. This product is generally applied in areas where VFAs and H_2S are generated such as: water and wasterwater treatment plants, pulp and paper mills, petroleum wells, municipality drains and septic systems, grease traps and wherever anaerobic activity is present. A start-up concentration to prevent the formation of these malodors varies from 25 to 100 ppm. Unlike other products, **NT PRODUCT:**

- Is not a biocide
- Is environmentally-friendly and not toxic
- Prevents the initial formation of these malodors and does not only mask it.
- Modifies the metabolism of anaerobic bacteria and does not kill these bacteria essential for anaerobic biodegradation, therefore BOD and COD are not affected.

PRECAUTIONS

For professional use only – Product not regulated by W.H.M.I.S.
Warning : May cause eye irritation.
Precautionary measures : Do not ingest. No special personal protection equipment required.
First Aid : **Eyes** : Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
Ingestion : Drink several glasses of water or milk. Seek medical attention.
KEEP OUT OF REACH OF CHILDREN.
Ingredients : Sodium nitrate, etc.

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FORMUL-A-CID

CONCENTRATED ACID CLEANER

DESCRIPTION

FORMUL-A-CID is a highly concentrated blend of nitric and phosphoric acids. This product eliminates all traces of mineral deposits and will not foam. **FORMUL-A-CID** is ideal to remove scale and inorganic deposits in CIP systems, pipelines in petroleum industry.

APPLICATION

FORMUL-A-CID is used for in place cleaning with a concentration of 0.5-2.0% wt/wt. It is also efficient at low temperatures.

PROPERTIES

Appearance: Clear liquid

pH (1% solution): Acidic

PRECAUTIONS

Do not take internally. If ingested, give 3-4 glasses water to drink and seek medical attention. DO NOT INDUCE VOMITING. If product comes in contact with eyes, flush for at least 15 minutes with a large amount of water. If irritation persists, consult a physician.

INGREDIENTS

Contains: Phosphoric acid, Nitric acid.

MADE IN CANADA

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DE FOAM
DEFOAMER

DESCRIPTION:

DE FOAM is a highly stable, long-lasting, "reacted" silicone defoamer which virtually eliminates problems associated with improperly emulsified silicone oils found in most silicone defoamers. Readily dispersible, **DE FOAM** is effective under a broad range of conditions including high-temperature and pressure processes.

TYPICAL PROPERTIES:

Appearance :	Milky white liquid.
Chemical nature :	Reacted poly-siloxane dispersion.
Ionic charge :	Nonionic
Dispersibility :	Easily dispersed in water.
Stability :	Excellent to dilute acids and alkalis at dye bath concentrations.

ADVANTAGES:

- Eliminates foam efficiently throughout dyeing cycle - defoams even during depressurizing of jets.
- Superior compatibility with dyes and other chemicals stable to most electrolytes.
- Efficient and stable at high temperatures; resistant to emulsification by processing surfactants.
- Effective in all types of dyeing equipment; leaves no scum ring, avoids dye spots.

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APPLICATION:

Selecting a defoamer involves far more than evaluating its efficiency to kill foam. The product must be finely balanced to control foam, yet have the stability necessary to prevent any negative effects caused by the active defoaming ingredients.

DE FOAM is a "stabilized" silicone defoamer manufactured by an exclusively developed HYDRO-SILICONE reaction process. By altering the defoaming molecule, we have greatly increased its foam killing efficiency and made it far more resistant to emulsion breakdown. The water dispersibility of **DE FOAM** is also superior to that of other silicones, so it rinses freely from the goods.

Unlike other silicone defoamers **DE FOAM** is stable in baths containing high concentrations of electrolytes which can come from one or more of the following sources:

1. pH modifiers (ammonium sulphate, MSP, TSP, other salts).
2. Water (hardness ions and trace metals).
3. Dyestuffs (the dye molecule, salt, diluents, and/or dispersants).
4. Chemicals (cationic or anionic materials).
5. Salts (common salt, Glauber salt).

While most defoamers (silicone or non-silicone) show poor emulsion stability in electrolytes, **DE FOAM** exhibits no breakdown in as much as 50 g/l electrolyte solutions.

USE LEVELS:

Because **DE FOAM** is a stabilized, reacted silicone product, very low silicone levels are required for effective defoaming.

For most applications, the use of 0.25 - 0.5% O.W.G. (on weight of goods) **DE FOAM** provides effective foam control. Greater amounts are required only where surfactant levels in the bath are unusually high.

DILUTION PROCEDURE:

Pre-dilute **FOAM KILL** with 10 - 20 times its weight of cold water (16° - 32°C / 60° - 90°F), using hand mixing or light, low speed mechanical agitation (as with any defoamer emulsion, the use of lengthy or high speed mechanical mixing during the dilution process should be avoided, as it can tend to over-shear and break down the emulsion). Add **DE FOAM** to the dyeing machine before the addition of any other chemicals. **DE FOAM** should not be mixed with acid or any other chemicals before adding to the dye bath.

DE FOAM is normally added at the beginning of the dye cycle. However, when properly diluted as above, it can be added to the bath during the dye cycle if needed.

COLD WEATHER HANDLING:

KEEP FROM FREEZING. If exposed to temperatures below 4°C (40°F), freezing damage may result. If this occurs, consult *Atomesbio* before using.

For more information concerning the handling, the manipulation or the use of this product, please consult our material safety data sheet or consult our Technical Service department.

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ATO TRAK

BIODEGRADABLE HARD SURFACE CLEANER AND BIOSTIMULANT

DESCRIPTION

ATO TRAK is a proprietary blend of bacterial spores, concentrated biodegradable surfactants and biostimulating agents. The components in ***ATO TRAK*** are listed on the Canadian Domestic Substances List (DSL). ***ATO TRAK*** is quick acting and effective in removing surface stains resulting from spilled petroleum products on concrete, asphalt, and other hard surfaces.Used alone or in conjunction with Atomes Biologicals' other bioremediation products, ***ATO TRAK*** shortens clean-up times, increases contaminant bioavailability and initiates biodegradation.

Features

- Inoculates contaminations with bacteria
- Cleans surfaces of oil spills and stains
- Cleans oily equipment, vehicles and tools
- Contains no petroleum distillates or solvents
- Contains essential microbial nutrients

Directions for Use

ATO TRAK can be diluted 1:2 (1 part ***ATO TRAK*** to 1 part water) for heavier loads and stains. Dilute 1:4 (1 part ***ATO TRAK*** to 3 parts water) for lighter applications.

- **Hard Surface Cleaning - concrete, asphalt:** Dampen the contaminated surface, apply ***ATO TRAK*** and allow it to work for 20-30 minutes. Keep the worksite damp during treatment and repeat as necessary.
- **Recommended Application Equipment:** ***ATO TRAK*** cleans petroleum based materials from nearly all surfaces regardless of the application.
- **General Equipment Cleaning:**

Do not pre-wet surfaces or use in direct sunlight on painted surfaces. A 1:3 (1 part ***ATO TRAK*** to 2 parts water) dilution is recommended for most applications with a maximum recommended dilution of 1:5 (1 part ***ATO TRAK*** to 4 parts water).

- **Pressure Washing/Degreasing:**

Pressure blast heavy materials. Spray surface with a 50/50 solution and pressure wash again from bottom up. Do not allow surfaces to dry.

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ATO TRAK

Product Characteristics

Cell count	7.6 billion/gallon
pH	10.4 - 10.7
Percent volatile	0
Soluability in water	99%
Boiling Point	>100° C
Flash Point	Non-flammable
Appearance	Cream to white liquid
Odor	Floral perfumed

Storage and Handling

Store in a cool, dry place. Avoid excessive inhalation. Wash hands thoroughly with warm, soapy water after handling. Avoid eye contact. Wear protective clothing (rubber gloves, eye protection, etc.). Pre-test new equipment finishes by applying to a small area first in the shade. Best results are seen when applied to damp concrete surfaces.

Available Packaging

- 5 gallon pail
- 55 gallon drum
- 4 x 1 gallon unit cases

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ATO ZYME

MULTIPLE SPORE BLEND CONCENTRATE

DESCRIPTION

ATO ZYME is a multiple spore blend concentrate designed for use as a base culture in the formulation of biological based products. This specialized microbial blend provides exceptional performance over a wide range of organic waste related applications. The components of **ATO ZYME** are listed on the Canadian Domestic Substances List (DSL). **ATO ZYME***'s* innovative multiple spore blend can be used to design environmentally safe product solutions for many types of organic waste, odor and stain problems.

The select blend of biostrains in **ATO ZYME** specifically promote optimum enzymatic activity of protease, lipase, amylase and cellulase, and provides outstanding breakdown of protein, starch, carbohydrates, fats, oils and grease.

Benefits

• Odor control
• Quick cleaning action
• Organic removal
• Accelerated enzymatic degradation – synergistic action allows the multiple spore blend to work faster and more effectively.
• Superior germination and outgrowth – results in increased bacterial activity in a variety of organic waste applications.
• Enhanced aerobic and anaerobic performance ideal for applications subject to aerobic and anaerobic environments.

Applications

ATO ZYME is designed to provide exceptional performance across multiple applications:
• Drain line and grease trap maintenance and odor control
• Bathroom cleaner and deodorizer
• Carpet and fabric care – odor and removal of milk, vomit, urine, feces, blood, coffee, wine, etc.
• Laundry pre-spotter for organic stains
• Septic and waste treatment

Product Characteristics

Bacteria Count	5.4 x 107 cfu/ml
Bacteria Type	Blend of Bacillus spores
Salmonella/Shigella	Negative
Appearance	Tan liquid
Stability	2 years at 35° - 95°F (2° - 35°C)

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ATO ZYME

Performance Characteristics

Enzyme Production	Lipase, Protease, Amylase, and Cellulase
Bacterial pathways	Aerobic & facultative anaerobic
pH range:	5.0 – 9.8
Temperature range	38° - 145°F (3° - 63°C)

Storage and Handling

Store in a cool, dry place. Avoid inhalation. Wash hands thouroughly with warm, soapy water after contact. Avoid eye contact.

Available Packaging

- 5 gallon pail
- 55 gallon drum
- 4 x 1 gallon unit cases

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ATO FLOC 919 Flocculant UNIQUE

ANIONIC GRANULAR GRADE POLYMER

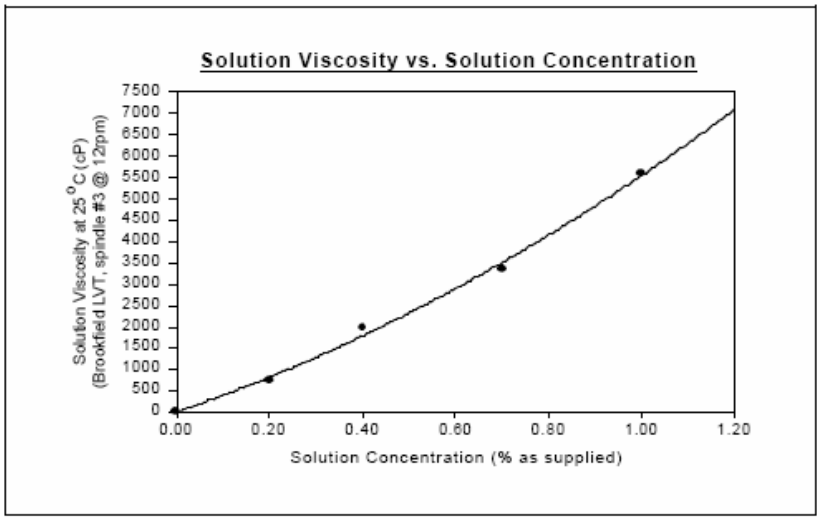
Description ATO FLOC 919 is a very high molecular weight, polyacrylamide based flocculant which exhibits a high degree of anionic charge. **ATO FLOC 919,** once hydrated in water, reacts readily to provide superior floc formation and performance in a variety of solids/liquid separation processes.

ATO FLOC 919 is supplied in a free-flowing granular form.

Principal Uses ATO FLOC 919 has been designed as a flocculant for a variety of municipal and industrial waste substrates. It has been proven especially effective for conditioning these substrates for solids sedimentation, thickening, and dewatering processes.

ATO FLOC 919 offers greatly improved solids/liquid separation efficiencies over a wide range of pH and is available in a variety of packaging for ease of handling and safety.

Typical Properties		
	Physical form	Off-white, free-flowing granules
	Bulk density	45 lbs./ft^3
	Particle size	10% > 780µm, 50% > 570µm, and 90% > 240µm
	Solution pH	6-8
	Solution Viscosity	See graph below



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Application & Storage

Recommended solution concentrations:
Stock solution 0.25%-0.5%
Feed solution 0.01%-0.2%
Recommended storage periods:
Product as Supplied Up to two years
Stock solution 2-5 days
Feed solution 1-3 days

Storage of the product and solutions for longer than the recommended periods may be acceptable under the correct conditions but could result in some loss of product efficiency. Product should be stored in a cool, dry place, and conditions of high temperature and high humidity should be avoided. Under such conditions, the hygroscopic nature of the product may result in excessive moisture up-take and product caking. Packages should be kept sealed when not in use. Further advice on solution preparation using Atoms Specialty Chemicals automated make-up systems is available, and details may be obtained on request.

Corrosive Properties Corrosion towards most standard materials of construction is very low. Stainless steel, fiberglass, polyethylene, polypropylene and rubberized surfaces are recommended. In some cases, aluminum and galvanized surfaces can be adversely affected.

Packaging ATO FLOC 919 is supplied in 55lb. (25kg.) bags, 1,102lb. (500kg.) tay bags, 1,543lb. (700kg.) tay bags, 2,000lb. (907kg.) tay bags, or in bulk by tanker delivery (40,000lb./18,149kg. maximum).

Spills Spills of **ATO FLOC 919** should be contained and disposed of in accordance with local regulations. Discharges of product or solutions of product to waterways should be avoided since some polymeric products may have an adverse effect on the mucous membranes on fish gills. Solutions of **ATO FLOC 919** are very slippery.

Technical Service Complete technical service is provided in the sale of **ATO FLOC 919**. This includes advice and full assistance in all aspects of product selection, laboratory testing, troubleshooting, and plant trials.

Health and Safety ATO FLOC 919 exhibits a very low order of toxicity and does not present any abnormal problems in its handling or general use. Standard industrial safety procedures should be observed. Detailed information on handling and any precautions to be observed in the use of the product(s) described in this leaflet can be found in our relevant Material Safety Data Sheets.

Warranty The information contained in this leaflet is given in good faith but no liability is assumed nor is freedom from any patent owned by Atoms Specialty Chemicals or others implied. This information should not be taken to represent a specification for the product.

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ATO PAC 101 UNIQUE

POLYALUMINUM CHLORIDE – INORGANIC COAGULANT

DESCRIPTION

ATO PAC 101 is a PolyAluminium Chloride coagulant. This product belongs to inorganic macromolecular polymer, enjoying strong adsorbing force, adhesive force, forming large flocculent lumps with small dosage and quick sedimentation rate. Moreover it has the advantages of wide applying range. Therefore, this product is a water-cleaning agent with high efficiency, quick speed, low consumption and safety.

Performances and Uses:

(1)As a water-cleaning agent, it has the advantages of small dosage, low cost, and strong practicability. It has competitive price and a wide range of application. According to the feedback of customers with long-term use of this product, it enjoys significant effect and accordingly well favored by them.

(2) It has ideal cleaning effects on all water turbidity and pollutant concentrations.

(3)It suits any water including drinking water and industrial water as well as various waste water with the quality of treated water reaching state stipulated standard.

(4)Due to OH radical in its structure, it causes little corrosion to pipelines and equipment, and is safe and convenient for use.

(5) This product can clean drinking water, industry-used water and various waste water, effectively eliminate solid suspended substances, sulfide,and lower heavy metal, phenol, fluoride etc.

(6) It can act as solidifying agent, adhesive agent in place of amine chloride in precise casting industry.

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ATO FLOCs Floculants

A BASE DE POLYACRYLAMIDE CATIONIQUE (PAM) EN EMULSION

Les floculants **ATO FLOCs** sont des émulsions cationiques avec une plage très étendue de charges et de poids moléculaires. Ils sont utilisés en vue du conditionnement des boues, du traitement des eaux usées et des procédés de clarification des eaux dans de nombreuses industries. La plage de produits disponibles assure qu'il existe un produit convenant à chaque application individuelle.

Avantages

• Large plage de charge cationique
• Usage économique : niveaux de dosage considérablement plus bas
• Améliorent la production et la formation de matières solides en gâteau
• Taux de capture efficient
• Facilement hydrosolubles ; à dissolution rapide
• Sous forme liquide pour faciliter leur manipulation
• Obtiennent de bons résultats sur une large plage de pH

Usages principaux

L'usage des floculants **ATO FLOCs** est recommandé en vue des procédés de séparation liquide-solide suivants :
• filtres à bande, presses à vis et centrifugeuses : amélioration du taux de production, de la siccité du gâteau et du taux de capture ;
• flottation à l'air dissous : produisent des courants de fond plus clairs et améliorent les vitesses d'écoulement ;
• décantation gravitaire : améliorent la formation de floc permettant des taux de décantation plus rapides, un compactage de boues accru et une amélioration de la qualité de l'eau
• aides-coagulants : aident à la décantation en combinaison avec des coagulants organiques et inorganiques ;
• clarification de l'eau : améliorent la qualité de l'eau des affluents, des eaux de traitement et des effluents en réduisant les matières en suspension et la turbidité ;
• épaississement : amélioration de compactage, sédimentation, drainage et qualité des effluents. Les utilisations susmentionnées sont les principales applications pour ces floculants. Ces produits peuvent être utiles dans tous les procédés de séparation solide-liquide.

Application

Avant leur usage initial, il convient d'agiter vigoureusement les floculants au moyen d'un agitateur pour fût à faible régime (< 475 tours/mn) ou d'une pompe de reprise pour en assurer l'uniformité. Il est recommandé d'utiliser des solutions mères d'une concentration de 0,5 %, toutefois on peut préparer des solutions mères d'une concentration maximale de 2 % au moyen d'un dispositif de mélange automatisé ou par lots. Les solutions doivent reposer 30 minutes pour atteindre leur efficacité maximale. Utiliser de l'eau d'appoint de haute qualité. De l'eau de dilution secondaire peut être ajoutée à la solution mère avant l'adjonction du produit afin d'améliorer le mélange avec le substrat dans une proportion d'au moins 10 : 1. Il est recommandé d'avoir recours à un collecteur ou à un anneau de distribution dans le circuit de traitement. Éviter les pompes centrifuges pour le transfert de polymère.

Santé et sécurité

Ces produits peuvent provoquer une irritation oculaire ou cutanée. Il est recommandé de porter des gants de caoutchouc, des lunettes à coques et des vêtements de protection lors de leur manipulation. Ils ne se sont pas révélés d'une toxicité aiguë par voie orale ou dermique sur des animaux de laboratoire, bien qu'une irritation oculaire ait été constatée. Consulter la fiche signalétique pour des données complètes sur la sécurité, la santé et la protection de l'environnement liées à ces produits.

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