



Environmental Leverage

生物科技 来自美国

COMPANY PROFILE

公司简介

Environmental Leverage inc.:

Environmental Leverage is made up of a team of individuals with a diverse and extensive background in water and wastewater treatment experience.

Areas of expertise include in-depth process knowledge, hands on troubleshooting, equipment optimization, training and development, system auditing, chemical and biological additives, design and control. Training, consulting, audits, troubleshooting, product optimization and plant efficiencies are just a few services that we are able to provide.

环境杠杆公司是一家美国与环保相关的企业，由一批具有丰富的水处理和污水处理经验背景的专业人士组成。专业领域包括深入微生物领域、故障排除、设备优化、培训和发展、系统审计、化学和生物添加剂、设计和控制。培训、咨询、审计、故障排除，产品优化和效率，这几个服务是我们所能提供的。

Some of the Industries served: Municipal, Chemical, Pulp and Paper, Steel, Food and Beverage, Automobile, Pharmaceuticals, Rendering, Textiles, Animal feed lots, Refinery and Petrochemical, Meat and Poultry, Institutional, Restaurants, Ballast tanks for shipping, Cruise Lines, Hospitals, Petrochemical, Laundry, Bakeries, Agriculture, Gun Powder plant, Orange Juice factory, Cookie factory, Vegetable processing plant, Meat packing, Barbecue Restaurant, Aquaculture, Ornamental Ponds for algae control, CAFO, Nursing homes, Military, Campgrounds, Colleges, Food processing, Breweries and wineries, Meat and fish processing, Commercial laundries, Soft drink bottlers, Dairy products, Landfill leachate, Tanneries, Vac trucks, Aquatic animal production, Acid Tar, Tanker truck cleaning and car washes, any type of organic remediation – Soil, Rivers, Lakes.

服务的行业有：市政、化工、造纸、钢铁、食品和饮料、汽车、制药、印染、纺织、动物饲料，炼油及石化、肉和家禽、体制、食品、游轮、医院、石油化工、洗衣、面包店、农业、枪粉末厂、橙汁厂、饼干厂、蔬菜加工厂，肉制品包装、烧烤餐厅、水产养殖、藻类控制、公共卫生、军事基地、露营地、院校、食品加工、啤酒厂和酒厂、肉类和鱼加工、商业洗衣房、软性饮料瓶装、奶牛产品、垃圾填埋场渗滤液、制革公司、醋酸乙烯生产、水生动物生产、酸焦油、油轮载货汽车清洗和洗车，任何类型的有机修复-土壤、河流、湖泊。

美国环境杠杆公司 (Environmental Leverage inc.) 的微生物增效产品中国区总代理：江苏精科嘉益工业技术有限公司 (Jiangsu Jingke Total Solution Co., Ltd., JTS) 系新加坡嘉益亚洲有限公司投资组建的外商独资企业。公司致力于水处理、工艺处理和能源管理等领域工业技术和新产品的推广和应用。并以其雄厚的技术力量，高科技、多元化、全方位的经营发展模式，竭诚为各行业各领域的国内外企业提供优质的产品和服务。

中国地区总代理：

江苏精科嘉益工业技术有限公司

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生物增效技术介绍

美国环境杠杆公司 (Environmental Leverage Inc.) 生物增效技术是直接经过精心筛选的对污染物有高效降解能力的微生物菌种添加到处理系统中, 这样缩短了培养驯化的周期, 改变了活性污泥系统的种群结构, 增加了系统中有效生物的数量, 从而大大缩短启动时间, 提高了处理效率和系统的稳定性; 同时生物增效技术可以根据不同客户的需要提供对特殊污染物或者特殊条件下对污染物具有高效分解能力的菌种, 从而针对性提高废水的处理效率。

我们可以为您提供

- 工业化的高效率的微生物工程菌
- 必要的现场服务
- 帮助客户分析系统出现的问题及原因
- 找到解决的方案: 包括一些系统运行参数的调整、微生物工程菌的选择、工程菌的使用、运行过程中指标的控制等。

我们的生物增效产品 生物增效菌种类: 针对不同工业行业

名称	功效
MicroSolv 105	is specially formulated to help in Anaerobic reactors. 特殊配方可使用在厌氧反应器
MicroSolv 118	Is an improved biological product, specifically formulated and packaged for use in pulp and papermills to help with hard to degrade compounds. Because of the diversity of the microorganisms this product is excellent for pulp & paper wastewater applications where there are heavy influxes of cellulosic fibrous organic solids 是一种改良的生物制剂, 能用于纸浆及造纸厂, 帮助其降低混合物。由于微生物的多样性, 本产品很适合用于处理纸浆、造纸废水中难降解的纤维素、纤维有机固体。
MicroSolv 200-T	is a high potency, bacteria-laden, powdered formulation for use in textiles 是一种高效的使用在工业纺织厂的粉末状产品, 通常能更好的满足客户具体的需求, 方案一直在不停的完善以满足客户特定的需求。
MicroClear 202	contains a specially formulated blend of microorganisms, micro/macronutrients, and surface tension suppressants/penetrants. Because of the diversity of the microorganisms and enzyme systems, incorporated into this product, it is excellent for use in Industrial Wastewater applications. The safe, naturally occurring bacteria are present in high numbers to handle difficult industrial and landfill leachate wastewater problems. 含有特殊配方的微生物, 微营养素, 和表面张力抑制剂/渗透剂。由于微生物的多样性和酶系统纳入这个产品, 它很好的应用于工业废水中。安全、自然产生的细菌可用于大量难处理的工业和垃圾填埋场渗滤液废水问题。
MicroClear 205	Is a powdered product that was developed for use in the biological wastewater treatment of food based greases, fats and oils. This product helps digest the fats, oils and grease that can cause problems with foaming and filamentous bacteria. 是一种能改善食品中含有动植物油脂、脂肪和油的粉末状产品。这种产品能帮助消化可能产生泡沫及丝状细菌的脂肪, 油及动植物油脂。

名称	功效
MicroSolv 207	is used for softening and degrading food type fat, oil and grease in lift stations, municipal aeration systems and can also be used in lagoon systems. 是一种可以软化和降低食品中的脂肪、油和油脂，适用于提升站或者市政曝气系统，也可用于氧化塘。
MicroSolv 400	is an improved biological product, specifically formulated and packaged for use in Refineries and Chemical plants to help with hard to degrade compounds. The bacteria are extremely resistant to toxic effects of the chemical pollutant fraction and are able to multiply and metabolize in the presence of certain heavy metals. 是一种改良的生物制剂，适用于炼油厂和化工厂，帮助其降低化合物。这些细菌在化学品污染方面有极强的抗毒性能，在当前金属含量比较高的情况下能有有效的繁殖。
MicroClear 410	This product is an improved biological product, specifically formulated and packaged for use in Steel mills to help with hard to degrade compounds. The bacteria are able to degrade rolling oils and are able to multiply and metabolize in the presence of certain heavy metals. 是一种改良的适用于钢厂帮助其降低混合物的生物制剂。这种细菌能降低机械油同时在当前金属含量超标的情况下能有有效的繁殖。
MicroSolv 600L	is a high potency, bacteria-laden, liquid formulation containing aerobic and facultative bacteria, which help facilitate the nitrification/denitrification process under certain conditions that may occur in wastewater situations. MicroSolv 600L is a selectively chosen product of Nitrobacter spp. and Nitrosomonas spp. naturally occurring bacteria which are indigenous to soil, stream, and estuaries. 是一种高效的液态配方兼氧细菌，帮助促进在一定条件下可能发生在污水的硝化/反硝化过程。是一种特殊选择的硝化菌，反硝化菌和兼性菌，是土壤，流，与河口自然产生的细菌
MicroClear M100	This product is specifically formulated and packaged for use in wastewater treatment biological systems to obtain healthier biomass. It has been found to shorten the lag growth time and increase activity, as well as floc formation, BOD removal and TSS removal. 该产品是特殊制定和包装的，应用于废水处理的生物系统以获得健康的微生物，它能够缩短微生物生长的时间和增加活力，包括絮状物，BOD和TSS的去除率。

生物增效营养素类：配合增效菌种使用效果更佳

MicroSolv 600L For Nitrification/Denitrification

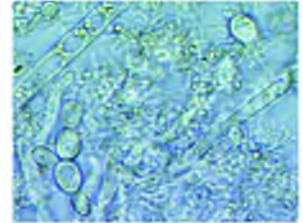
MicroSolv-600L is a high potency, bacteria-laden, liquid formulation containing aerobic and facultative bacteria, which help facilitate the nitrification/denitrification process under certain conditions that may occur in wastewater situations. MicroSolv-600L is a selectively chosen product of Nitrobacter spp., Nitrosomonas spp. and facultative naturally occurring bacteria which are indigenous to soil, stream, and estuaries.

ADVANTAGES

- * Greatly reduces labor time
- * Reduces hydrogen sulfide
- * Cost effective/Easy to use
- * No special equipment needed
- * Breaks down fat & grease buildup
- * Reduces ammonia levels
- * Enhances BOD/COD removal
- * Degrades a wide range of complex organics
- * Reduces Sludge Build-Up
- * Increases system efficiency
- * Eliminates malodors at their source
- * Changes biomass dynamics

APPLICATIONS

DIGESTERS	SLUDGE TANKS	SECONDARY CLARIFIERS
LAGOONS	RBC'S T	RICKLING FILTERS
IMHOFF T	ANKS AERATION TANKS	OXIDATION TANKS
CLARIFIERS	SLUDGE TANKS	



BACTERIAL COUNT

Minimum Bacterial Count of
67 billion cfu's per/gallon

PACKAGING

"MicroSolv-600L" is packaged in 5 gallon
pails & 55gallon drums

Each order is batch certified for our customers safety and satisfaction. Bacterial count and Salmonella negative certifications are available with each order.

CHARACTERISTICS

Form.....Liquid
Color.....medium amber liquid
Odor.....yeasty
Shelf Life.....12 months
Viscosity.....cps at 70F =20cps
Spec Gravity.....1.01 +/- .1
pH.....7.0 +/- .5
Flash Pt.....none

Applications/directions

EQUALIZATION TANKS, IMOFF TANKS, PRIMARY CLARIFIERS:

3 gallons per MGD daily to reduce Ammonia, Nitrites, Nitrates and for denitrification. After 30 days or when nitrification occurs, reduce to 1/2 gallons per MGD.

AERATION, SBRS, OXIDATION TANKS:

1 gallon per MGD daily for nitrification. After 30 days or when nitrification occurs, reduce to 1/2 gallon per MGD.

TRICKLING FILTERS:

1 gallon per MGD daily for nitrification. After 30 days or when nitrification occurs, reduce to 1/2 gallon.

RBC'S:

1 gallon per MGD daily for nitrification. After 30 days or when nitrification occurs, reduce to 1/2 gallon per MGD.

SECONDARY CLARIFIERS:

1 gallon per MGD daily for nitrification. After 30 days or when nitrification occurs, reduce 1/2gallon per MGD.

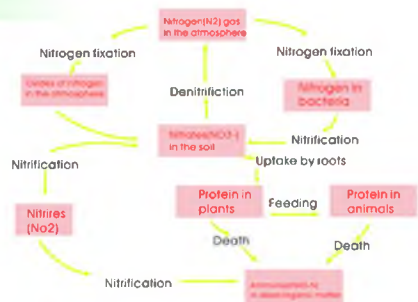
LAGOONS:

2 gallons per MGD daily for nitrification. After 30 days or when nitrification occurs, reduce 1 gallon per MGD.

DIGESTORS, SLUDGE TANKS:

2 gallons per MGD daily for nitrification. After 30 days or when nitrification occurs, reduce 1 gallon per MGD.

Nitrogen Cycle



product Description

产品说明

MicroSolv 600L 应用于硝化/反硝化

MicroSolv-600L是一种高效的液态配方兼氧细菌，帮助促进在一定条件下可能发生在污水的硝化/反硝化过程。MicroSolv-600L是一种特殊选择的硝化菌，反硝化菌和兼性菌，是土壤，河流，与河口自然产生的细菌。

MicroSolv-600L的优势

大大减少劳动时间	提升BOD/ COD去除率
减少硫化氢	降解多种类型的有机物
有效节省成本/容易使用	减少污泥的积累
不需要特殊的设备	提升系统效率
降解脂肪和油脂	消除恶臭的来源
减少氨含量	提高生物活性

MicroSolv-600L的应用

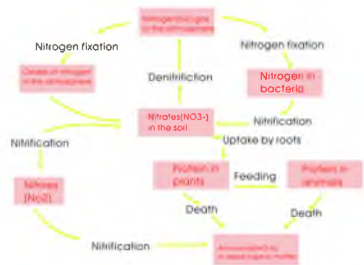
消化池	污泥池	二沉池	氧化塘	生物转盘
生物滤池	双层沉淀池	曝气池	氧化池	澄清池

MicroSolv-600L的技术参数

最小的细菌数量形态.....液体	形态.....琥珀色液体
气味.....酵母味	保质期.....12个月
粘性.....cps at 70F =20cps	密度.....1.01 +/- .1
PH.....7.0 +/- .5	闪点.....无

每个订单订单都会让客户觉得满意和安全。每份订单都有细菌总数和沙门氏菌的检测报告

Nitrogen Cycle



MicroSolv-600L的包装

MicroSolv-600L封装在5和55加仑桶中

产品应用

均质池 (调节池) 双层沉淀池 初沉池

减少氨、亚硝酸盐、硝酸盐反硝化每天加3加仑每百万加仑，30天后或当硝化作用产生时，减少到1/2加仑每百万加仑。

氧化塘

每天2加仑每百万加仑硝化工艺。30天后或当硝化作用产生时，减少到1加仑每百万加仑。

二沉池

每天1加仑每百万加仑硝化工艺。30天后或当硝化作用产生时，减少到每天1/2加仑每百万加仑。

曝气池 SBR 氧化池

每天1加仑每百万加仑硝化工艺。30天后或当硝化作用产生时，减少到每天1/2加仑每百万加仑。

生物滤池

每天1加仑每百万加仑硝化工艺。30天后或当硝化作用产生时，减少到1/2加仑每百万加仑。

污泥消化池

每天2加仑每百万加仑硝化工艺。30天后或当硝化作用产生时，减少到1加仑每百万加仑。

MicroClear-105 For Anaerobic Digestors

MicroClear-105 is a high potency, bacteria-laden, powdered formulation, for use in degrading many types of waste. MicroClear-105 contains a specially formulated, proprietary blend of microorganisms, micro/macronutrients, and surface tension suppressants/penetrants is specifically developed for use in anaerobic and food processing wastewater applications. This potent combination of billions of active Facultative and Anaerobic bacteria cultures are specially engineered to degrade animal fats, oils, and greases. The strong enzyme activity enhances and increases lipid reduction by converting lipids into carbon dioxide and water.

ADVANTAGES

Greatly reduces labor time Enhances BOD/COD removal
 Reduces hydrogen sulfide Reduces sludge buildup
 Cost effective/Easy to use Changes biomass dynamics
 No special equipment needed Increases system efficiency
 Breaks down fat & grease buildup Eliminates malodors at their source
 Contains facultative anaerobes Contains no chemicals
 Degrades a wide range of complex organic compounds

APPLICATIONS

LIFT STATIONS	WET WELLS	SUMP PITS
OXIDATION TANKS	Anaerobic	
RBC'S	CLARIFIERS	DIGESTERS
SLUDGE TANKS		
SEWER MAINS	LATERALS	IMHOFF
TANKS		
AERATION SBR'S	LAGOONS	TRICKLING
FILTERS		



DEGRADES

Fats, Oils & Grease	Starches	Proteins
Malodors	Animal Fats	Triglycerides
Foaming	Surfactants/Soaps	Chemicals

ENZYMATIC ACTIVITY

Protease (Casein Digesting)..... Units/Gram:
 35,000 Min.
 Amylase (Modified Wohlgemuth).. Units/Gram:
 55,000-80,000
 Lipase (USP)..... Units/Gram: 400
 Cellulase (CAU)..... Units/Gram: 150 Min.

PACKAGING

"MicroClear- 105" is packaged in 30 & 100 pound drums and is also available in (50 X 1/2lb) water

PERFORMANCE PROPERTIES

Effective pH range.....5.2-9.5
 Effective Temperature Range..35-130 degrees F
 Bacterial Enzyme Production...Protease, Lipase, Amylase, Urease, Cellulase

TYPICAL PROPERTIES

Appearance..... light tan
 Fragrance.....mild-earthy
 Form.....powder
 PH.....6.8-8.5
 Shelf-Life.....2 years/u.o.c.
 Flash Point.....none

STORAGE AND HANDLING

Storage.....Store in a cool, dry place
 Handling.....Wash hands thoroughly with warm, soapy water after handling

BACTERIAL COUNT

" Microclear-105 " >1x10⁹ per gram

product Description

产品说明

MicroClear-105 用于厌氧降解

MicroClear-105是一种高效的细菌粉末状制剂，用来降解多种废弃物。

MicroClear-105含有特殊配方，一种独特的微生物混合物、微生物营养素和表面张力抑制剂/渗透剂，是专门开发用于厌氧和食品加工废水。这有力的包含数十亿活跃的兼性厌氧菌培养是特别设计，降解动物脂肪，油，油脂。强大的活性酶增强了脂肪的降解能力使之转换成二氧化碳和水。

MicroClear-105产品优势

大大降低了劳动时间	提高BOD/COD去除率
减少硫化氢	减少污泥的累积
有效的成本/易于使用	提高生物活性
无需特殊设备	提高了系统效率
分解脂肪及油脂积聚	消除恶臭的来源
包含兼性厌氧菌	不含化学品
降低各种复杂的有机化合物	



MicroClear-105产品的应用

废水提升站	集水井	污水池	氧化池
厌氧池	消化池	生物转盘	澄清池
双层沉淀池	污水总管	测流管	生物滤池
SBR曝气池	兼氧塘		



MicroClear-105产品可降解

脂肪 油和润滑脂 淀粉 蛋白 恶臭 动物脂肪 甘油三酯 泡沫 表面活性剂/肥皂 化学品

MicroClear-105产品酶的活性

蛋白酶..... 单位/克: 35,000 Min.
 淀粉酶..... 单位/克: 55,000-80,000
 脂肪酶..... 单位/克: 400
 纤维素酶..... 单位/克: 150 Min.

性能特性

有效的PH值范围..... 5.2-9.5
 有效的温度范围..... 35-130 华氏度
 细菌酶的产生..... 蛋白酶, 淀粉酶, 脂肪酶,
 酶, 纤维素酶

贮存和注意事项

贮存..... 存放于阴凉干燥处
 注意事项..... 接触后用温热肥皂水清洗

MicroClear-105产品的包装

MicroClear-105密封包装于30&100磅的桶中和50 X 1/2lb的可溶性的袋中。

技术参数

外观..... 浅黄色
 气味..... 泥土味
 外型..... 粉末状
 pH..... 6.8-8.5
 保质期..... 2年
 闪点..... 无

细菌总数

" Microclear-105 " >1x10⁹ 每克

MicroSolv – 118 For Pulp & Paper Use

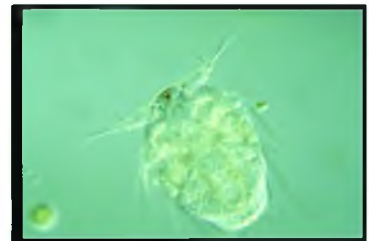
MicroSolv-118 is a high potency, bacteria-laden, powdered formulation, for use in degrading many types of waste. MicroSolv-118 contains a specially formulated blend of microorganisms, micro/macro nutrients, fungi, and surface tension suppressants/penetrants, developed for use in bioaugmentation. Because of the diversity of the microorganisms this product is excellent for pulp & paper wastewater applications where there are heavy influxes of cellulosic fibrous organic solids. The enzyme activity enhances cellulosic reduction by converting the fibrous solids into carbon dioxide and water.

ADVANTAGES

Greatly reduces labor time	Enhances BOD/COD removal
Reduces hydrogen sulfide	Reduces sludge build-up
Cost effective/Easy to use	Changes biomass dynamics
No special equipment needed	Increases system efficiency
Breaks down fat & grease buildup	Eliminates malodors at their source
Degrades a wide variety of complex organics	Contains facultative anaerobes

APPLICATIONS

DIGESTERS	SLUDGE TANKS	LAGOONS
RBCS	TRICKLING FILTERS	
IMHOFF TANKS	AERATED BASINS	
AERATION TANKS	STATIC PONDS	
ACTIVATED SLUDGE		



ENZYMATIC ACTIVITY

Protease (Casein Digesting).....Units/Gram: 35,000 Min.
 Amylase (Modified Wohlgemuth) .Units/Gram: 55,000–80,000
 Lipase (USP)..... Units/Gram: 400
 Cellulase (CAU)..... Units/Gram: 1800 Min.

DEGRADES

Cellulose Material	Lignin's
High BOD	Starch
Black/Green Liquor	Pine Soap & Tall Oil
Surfactants	

PACKAGING

"MicroSolv-118" is packaged in 25, 50, 100, and 400 pound containers and is also available in various sizes of water soluble "Bio-Pouches"

TYPICAL PROPERTIES

Appearance..... light tan
 Fragrance.....mild–earthy
 Form.....powder
 PH.....6.8–8.5
 Shelf–Life.....2 years/u.o.c.
 Flash Point.....none

PERFORMANCE PROPERTIES

Effective pH range.....5.2–9.5
 Effective Temperature Range.35–130degrees F
 Bacterial Enzyme Production.....Protease,
 Lipase, Amylase, Urease, Cellulase

STORAGE AND HANDLING

Storage.....Store in a cool, dry place
 Handling.....Wash hands thoroughly with warm, soapy water after handling

BACTERIAL COUNT

"MicroSolv-118"... > 1x10⁹per gram

product Description

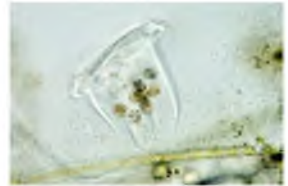
产品说明

MicroSolv-118 应用于纸浆与纸

MicroSolv-118 是一种高效的细菌粉末状配方, 用来降解各种类型的废弃物
MicroSolv-118含有特殊配方的微生物, 微/宏观营养, 真菌, 和表面张力抑制剂/渗透剂, 用于生物强化。由于微生物的多样性, 本产品很适合用于处理纸浆、造纸废水中难降解的纤维素, 纤维有机固体。酶的活性增强纤维素纤维的固体。强大的生物酶能减少纤维素使之转换成二氧化碳和水。

MicroSolv-118的优点

大大降低了劳动时间	提高BOD/ COD的去除率
降低硫化氢	降低污泥积累
有效的成本/易于使用的	提高生物活性
无需特殊设备	提高了系统效率



MicroSolv-118的应用

消化池	污泥池	氧化塘
生物转盘	生物滤池	曝气池
双层沉淀池	活性污泥池	
曝气槽	静态池塘	



生物酶的活性

蛋白酶 (Casein Digesting).....单位/克: 35,000 Min.
 淀粉酶 (Modified Wohlgemuth)....单位/克: 55,000-80,000
 脂肪酶 (USP).....单位/克: 400
 纤维素酶 (CAU).....单位/克: 1800 Min.55,000-80,000

MicroSolv-118可降解

纤维素材料	木质素	高BOD
浆粉	黑液	松香皂
高油	表面活性剂	

MicroSolv-118的包装

'MicroSolv-118'是 封装在 25, 50, 100, 和 400磅的容器, 也可在各种尺寸的水溶性袋中。

典型特征

外观.....浅黄色
 气味.....泥土味
 形态.....粉末状
 PH.....6.8-8.5
 保质期.....2年
 闪点.....无

性能特性

有效的PH范围.....5.2-9.5
 有效的温度范围.....35-130 华氏度
 细菌酶的产生.....蛋白酶, 淀粉酶, 脂肪酶, 尿素酶, 纤维素酶

贮存与处理

贮存.....存放于阴凉干燥处
 处理.....接触后用温热肥皂水清洗

细菌总数

'MicroSolv-118'..... >1x10⁹每克

MicroSolv 202 For Landfill

MicroSolv 202 is a high potency, bacteria-laden, powdered formulation for use in degrading many types of waste. MicroSolv 202 contains a specially formulated blend of microorganisms, micro/macronutrients, and surface tension suppressants/penetrants. Because of the diversity of the microorganisms' enzymes incorporated into this product, it is excellent for use in industrial wastewater applications. The safe naturally occurring bacteria are present in high numbers to handle difficult industrial and landfill leachate wastewater problems.

BIOAUGMENTATION ADVANTAGES

Reduces solids handling costs	Achieve improved final effluent permit results
Reduction in filamentous bulking	Increase BOD and TSS removal efficiency
Greatly reduces labor time	Enhances BOD/COD removal
Reduces hydrogen sulfide	Reduces sludge build-up
Cost effective/Easy to use	Changes biomass dynamics
No special equipment needed	Increases system efficiency
Eliminates malodors at their source	Degrades a wide variety of complex organics
Contains facultative anaerobes	Reduction in polymer and dewatering costs
Discharge compliance is maintained	Reduction in filamentous bulking
Reduction in toxicity	

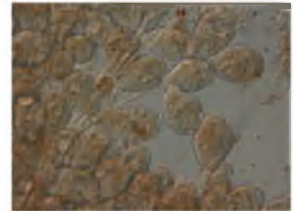
Assist in allowing nitrification easier by reducing toxicity and breaking down amines.

BIOAUGMENTATION APPLICATIONS

LIFT STATIONS WET WELLS SUMP PITS OXIDATION TANKS
 RBCs UNOX DIGESTORS SLUDGE TANKS SOIL REMEDIATION
 SEWER MAINS LANDFILL DRAIN LINES AERATION BASINS
 SBRS LAGOONS TRICKLING FILTERS

DEGRADES

Hydrocarbons	Oils & Grease	
Malodors	Triglycerides	High BOD
Dichloroethylenes	Heptachlor	Hydrocarbons
Chloride Vinyl	Soaps	Starches
Toluene	Phenols	Surfactants
Benzene	Gasoline	Crude Oils
Proteins	Animal Fats	Ammonia



ENZYMATIC ACTIVITY

Protease (Casein Digesting)..... Units/Gram: 35,000 Min.
 Amylase (Modified Wohlgemuth)... Units/Gram: 55,000–80,000
 Lipase (USP)..... Units/Gram: 400
 Cellulase (CAU)..... Units/Gram: 150 Min.

BACTERIA PERFORMANCE PROPERTIES

Effective pH range.....5.2–9.5
 Effective Temperature Range.....35–130 degrees F
 Bacterial Enzyme Production.....Protease, Lipase, Amylase, Urease, Cellulase

BACTERIA STORAGE AND HANDLING

Storage.....Store in a cool, dry place
 Handling.....Wash hands thoroughly with warm, soapy water after handling

BACTERIA PACKAGING

MicroSolv 202 is packaged in 1 lb water soluble Bio-Pouches. 25 lbs per 5 gallon plastic pail.

BACTERIA TYPICAL PROPERTIES

Appearance.....light tan
 Fragrance.....mild–earthy
 Form.....powder
 pH.....6.8–8.5
 Shelf–Life.....2 years/u.o.c.
 Flash Point.....none

BACTERIAL COUNT

MicroSolv 202.....>1x10⁹Billion per

product Description

产品说明

MicroSolv -202 应用于垃圾填埋场和垃圾渗滤液

microsolv202是一种高效可用于降解多类废物的粉末配方细菌。microsolv202含有特殊配方的微生物，微营养素，和表面张力抑制剂/渗透剂。由于微生物的多样性和专有生物酶系统，它非常适用于工业废水。安全的、自然产生的细菌，可用于许多难处理的工业和垃圾渗滤液废水问题。

产品优势

降低固体处理费用	提高最终污水的效果	减少丝状菌膨胀	提高BOD和TSS去除效率
大大降低了劳动时间	提高BOD/COD的去除率	减少硫化氢	减少污泥积累
有效的成本/易于使用	提高生物活性	无需特殊设备	提高了系统效率
消除恶臭的来源	降解各种复杂有机物的	包含兼性厌氧菌	减少脱水成本
减少毒性	协助让硝化更容易，降低毒性，降解胶		

产品应用

废水提升站	集水井	污水槽	氧化池
生物转盘	纯氧曝气	消化池	污泥浓缩池
土壤修复	下水总管	填埋场	排水管线
曝气池	SBR	氧化塘	生物滤池

microsolv202可降解

碳氢化合物	油及油脂	甘油三酯	高BOD
二氯乙烯类	七氯烃	氯乙烯	肥皂
淀粉	表面活性剂	甲苯	苯丙氨酸
汽油	原油	蛋白质	动物脂肪



生物酶的活性

蛋白酶	单位/克: 35,000 Min.
淀粉酶	单位/克: 55,000-80,000
脂肪酶(USP)	单位/克: 400
纤维素酶(CAU)	单位/克: 150 Min

特性性能

有效的PH范围	5.2-9.5
有效的温度范围	35-130 华氏度
细菌酶的产生	蛋白酶, 脂肪酶, 淀粉酶, 尿素, 纤维素酶

Microsolv202的贮存与处理

贮存	存放于阴凉干燥处
处理	接触后用温热肥皂水清洗

Microsolv202的包装

Microsolv202是封装在1磅水溶性袋中，每5加仑的塑料桶含有25磅产品。

典型特性

外观	浅黄色
气味	泥土味
形态	粉末状
pH	6.8-8.5
保质期	2年
闪点	无

细菌总数

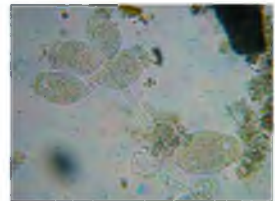
"Microsolv202" >1x10⁹ 每克

MicroClear-205 For Food Processing

MicroClear-205 is a high potency, bacteria-laden, powdered formulation, for use in degrading many types of waste. MicroClear-205 contains a specially formulated, proprietary blend of microorganisms, micro/macronutrients, and surface tension suppressants/penetrants is specifically developed for use in food processing wastewater applications. This potent combination of billions of active Aerobic and Anaerobic bacteria cultures are specially engineered to degrade animal fats, oils, and greases. The strong enzyme activity enhances and increases lipid reduction by converting lipids into carbon dioxide and water.

ADVANTAGES

Greatly reduces labor time Enhances BOD/COD removal
 Reduces hydrogen sulfide Reduces sludge buildup
 Cost effective/Easy to use Changes biomass dynamics
 No special equipment needed Increases system efficiency
 Breaks down fat & grease buildup Eliminates malodors at their source
 Contains facultative anaerobes Contains no chemicals
 Degrades a wide range of complex organic compounds



APPLICATIONS

LIFT STATIONS	WET WELLS	SUMP PITS
OXIDATION TANKS	Anaerobic	
RBC'S	CLARIFIERS	DIGESTERS
SLUDGE TANKS		
SEWER MAINS	LATERALS	IMHOFF
TANKS		
AERATION SBR'S	LAGOONS	TRICKLING
FILTERS		



DEGRADES

Fats, Oils & Grease	Starches	Proteins
Malodors	Animal Fats	Triglycerides
Foaming	Surfactants/Soaps	Chemicals

ENZYMATIC ACTIVITY

Protease (Casein Digesting)..... Units/Gram: 35,000 Min.
 Amylase (Modified Wohlgemuth).. Units/Gram: 55,000-80,000
 Lipase (USP)..... Units/Gram: 400
 Cellulase (CAU)..... Units/Gram: 150 Min.

PACKAGING

MicroClear-205 is packaged in 30 & 100 pound drums and is also available in (50 X 1/2lb) water

PERFORMANCE PROPERTIES

Effective pH range.....5.2-9.5
 Effective Temperature Range...35- 130 degrees F
 Bacterial Enzyme Production....Protease, Lipase, Amylase, Urease, Cellulase

TYPICAL PROPERTIES

Appearance..... light tan
 Fragrance.....mild-earthly
 Form.....powder
 PH.....6.8-8.5
 Shelf-Life.....2 years/u.o.c.
 Flash Point.....none

STORAGE AND HANDLING

Storage.....Store in a cool, dry place
 Handling.....Wash hands thoroughly with warm, soapy water after handling

BACTERIAL COUNT

* Microclear-205 * >1x10⁹ per gram

product Description

产品说明

MicroClear-205 适用于食品加工

MicroClear-205是一种高效的细菌粉末状配方产品，用来去除各种类型的废弃物。

MicroClear-205含有特殊配方，混合微生物，微营养素，和表面张力抑制剂/渗透剂，是专门开发用于食品加工废水。这有效的包含数十亿活跃好氧和厌氧细菌是特别用来降解动物脂肪，油，油脂。增强的活性酶降解油脂，使之转换成二氧化碳和水。

MicroClear-205的优势

大大降低了劳动时间	提高BOD/COD的去除率
减少硫化氢	减少污泥的积累
有效的成本/易于	使用提高生物活性
无需特殊设备	提高了系统效率
分解脂肪及油脂积聚	消除恶臭的来源
包含兼性厌氧菌	不含化学品
降解各种复杂的有机化合物	



MicroClear-205产品的应用

提升站	集水井	污水池	双层沉淀池
氧化池	生物转盘	SBR	曝气池
污泥池	下水总管	生物滤池	

MicroClear-205产品可降解

脂肪油和油脂 淀粉 蛋白质 动物脂肪 甘油三酸酯 泡沫 表面活性剂 化学品

生物酶的活性

蛋白酶.....	单位/克: 35,000 Min.
淀粉酶.....	单位/克: 55,000-80,000
脂肪酶.....	单位/克: 400
纤维素酶.....	单位/克: 150 Min.

性能特性

有效的PH值范围.....	5.2-9.5
有效的温度范围.....	35-130 华氏度
细菌酶的产生.....	蛋白酶, 淀粉酶, 脂肪酶, 酶, 纤维素酶

贮存与处理

贮存.....存放于阴凉干燥处
处理.....接触后用温热肥皂水清洗

MicroClear-205产品的包装

MicroClear-205密封包装于30与100磅的桶中和50 X 1/2lb的可溶性的袋中。

技术参数

外观.....	浅黄色
气味.....	泥土味
外型.....	粉末状
pH.....	6.8-8.5
保质期.....	2年
闪点.....	无

细菌总数

* Microclear-205 * > 1x10⁹ 每克

MicroSolv – 400 For PetroChemical Use

MicroSolv – 400 contains several types of microorganisms which can degrade aliphatic and Polynuclear Aromatic Hydrocarbon chemicals. MicroSolv – 400 contains Microflora that survives on hydrocarbon waste substances allowing it to utilize it as a source of carbon. Being extremely resistant to toxic effects of the chemical pollutant fraction and are able to multiply and metabolize in the presence of certain heavy metals. These safe, nonpathogenic microbes produce a broad spectrum of enzyme systems. Because of the diversity of the microorganisms and proprietary biological enzyme systems, this product is excellent for all types of aliphatic & aromatic hydrocarbon degradation.

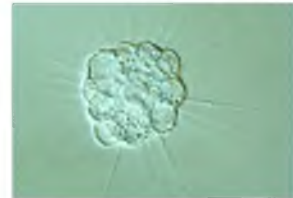
ADVANTAGES

Reduction in filamentous bulking	Greatly reduces labor time
Enhances BOD/COD removal	Reduces hydrogen sulfide & sludge buildup
Changes biomass dynamics	Cost effective/Easy to use
Degrades a wide range of organics	Increases system efficiency
Contains facultative anaerobes to work with or without oxygen	
Reduces corrosion due to sulfates	Discharge compliance is maintained
Increase BOD and TSS removal Efficiency	



APPLICATIONS

Activated Sludge	LATERALS	LIFT STATIONS
BIOSLURRY'S	SUMP PITS	INJECTOR PITS
DIGESTERS	SLUDGE TANKS	IN SITU REMEDIATION
UNOX	CLARIFIERS	BIOSTIMULATION
SOIL REMEDIATION	PARTS WASHERS	SBR's Lagoons



DEGRADES/(Partial Listing)

Dichloroethylenes	Heptachlor	Hydrocarbons	Vinyl Chloride
Toluene	Phenols	Nitrophenols	Halomethanes
Dinitrotoluene	Dichloroethylenes	Benzene	Gasoline
Crude Oils	Naphthalene	Kerosene	Diesel Fuel

TYPICAL PROPERTIES

Appearance..... light tan
 Fragrance.....mild–earthy
 Form.....powder
 PH.....6.8–8.5
 Shelf–Life..... 1 years/u.o.c.
 Flash Point.....none

PACKAGING

"MicroSolv – 400" is typically packaged in 25– one lb water soluble BioPouches per pail. The product is also available in 25, 50, 100, and 400 pound containers.

PERFORMANCE PROPERTIES

Effective pH range.....5.2–9.5
 Effective Temperature Range...55– 120 degrees F
 Bacterial Enzyme Production.....Facultative growth with or without oxygen

MICROBIOLOGICAL INFORMATION

Contents.... Multiple adapted microorganisms
 Growth Stimulants..... Micro & Macro nutrients

BACTERIAL COUNT

"MicroSolv – 400"..... > 1x10⁹ per gram

STORAGE AND HANDLING

Storage..... Store in a cool, dry place
 Handling..... Wash hands thoroughly with warm, soapy water after handling

product Description

产品说明

MicroSolv -400 应用于石油化工

MicroSolv -400包含多种类型的微生物可以降解脂肪族和多环芳香烃化合物

MicroSolv -400含有的微生物群落以碳氢化合物废物生存，并利用它作为碳源。极耐毒性作用的化学污染物，能够在存在某些重金属的情况下繁殖和代谢。这些安全的，属非病原微生物产生的广谱酶系统。由于微生物的多样性和专有生物酶系统，该产品是适合所有类型的脂肪族和芳香烃的降

MicroClear-400的优点

减少丝状菌膨胀	大大减少劳动时间
提高BOD/ COD去除率	减少硫化氢和污泥的积累
提高生物活性	有效的成本/容易使用
降解多种有机物	提高系统的效率
包含厌氧菌	减少由于硫酸盐的腐蚀
达标排放	有效的增加BOD/ TSS去除率



MicroClear-400产品的应用

活性污泥池	提升站	澄清池
污泥浓缩池	污水池	隔油池
消化池	污泥池	原位修复



典型特征

外观.....	浅黄色
气味.....	泥土味
形态.....	粉末状
PH.....	6.8-8.5
保质期.....	1年
闪点.....	无

MicroSolv -400可降解

七氯	碳氢化合物	氯乙烯	甲苯	苯酚
柴油	二硝基甲苯	苯	汽油	石油
煤油				卫生球

MicroClear-400产品的包装

"MicroSolv- 400"通常封装在25-一磅水溶性袋中。本产品也可在25, 50, 100, 和400磅的容器中。

性能特性

有效的PH值范围.....	5.2-9.5
有效的温度范围.....	55-120 华氏度
细菌酶的生长.....	兼性增长或没有氧气

微生物信息

内容.....	多种微生物
生长刺激剂.....	大量的微生物营养素

贮存与处理

贮存.....	存放于阴凉干燥处
处理.....	接触后用温热肥皂水清洗

细菌总数

* Microclear-400 * >1x10⁹ 每克

MicroClear M-100 MicroStimulant

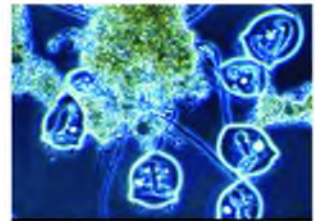
MicroClear M-100 is a proprietary formulation of micronutrients designed to enhance the performance of biological systems. It enhances biological growth, shortens lag time, increases biological activity and provides the critical building blocks necessary to maintaining a healthy floc-forming population. The formulation consists of micronutrients, trace minerals, amino acids and vitamins. There are sixteen trace minerals, including calcium, iron, magnesium, manganese and zinc. The formulation also includes twenty amino acids, such as glycine, and thirteen vitamins, including folic acid.

Product Uses

Regular application of MicroClear M-100 can provide numerous benefits to operators of all types of biological waste treatment processes. Research has shown that inadequate micronutrients can lead to poor settling or high effluent suspended solids due to unhealthy floc. The addition of micronutrients also increases the biological degradation rate in many situations which will allow the biomass to more rapidly respond to sudden increases in loads or toxic shocks. Finally, laboratory studies indicate that application of micronutrients can lower final effluent BOD5 levels by maintaining a healthy population capable of more complete organic reduction in a shorter time.

ADVANTAGES

Enhances BOD/COD removal Shortens lag time
 Reduces sludge build-up Increase characteristics in floc structure
 Cost effective/Easy to use Changes biomass dynamics
 No special equipment needed Increases system efficiency



APPLICATIONS

DIGESTERS SLUDGE TANKS LAGOONS
 RBC'S TRICKLING FILTERS Digestors
 PRIMARY CLARIFIERS AERATION TANKS SECONDARY CLARIFIERS
 ACTIVATED SLUDGE AERATED BASINS STATIC PONDS

ENZYMATIC ACTIVITY

All natural inorganic vitamins and nutrients

PACKAGING

MicroClear M100 is packaged in 25, 50, 100, and 400 pound containers and is also available in various sizes of water soluble "Bio-Pouches"

PERFORMANCE PROPERTIES

Effective pH range.....5.2-9.5
 Effective Temperature Range..35-130 degrees F

TYPICAL PROPERTIES

Appearance..... Dark Green
 Fragrance.....mild-earthy
 Form.....powder
 pH..... 6.5-7.5
 Shelf-Life.....2 years/u.o.c. Flash

STORAGE AND HANDLING

Storage.....Store in a cool, dry place
 Handling.....Wash hands thoroughly with warm, soapy water after handling

Micronutrients and Trace Minerals and Elements

16 Trace Minerals Calcium 1.9% Iron .08% Magnesium .123% Zinc .0035%
 Phosphorus 0.1 % Trace Vitamins: A, B, D, E, K
 Folic Acid 0.3mg Ascorbic Acid 150,000 mg Niacin 2,500 mg

product Description

产品说明

MicroClear M-100 微生物营养素

MicroClear M-100是一个专有配方营养素，旨在提高生物系统的性能。提高生物生长，缩短滞后时间，增强生物活性和一个健康的絮状颗粒提供重要支持。它包括微量营养素，微量元素，氨基酸和维生素。有十六种微量矿物质，钙，铁，镁，锰和锌等。还包括二十种氨基酸，如甘氨酸，和十三种维生素，包括叶酸。

产品用途

经常使用MicroClear M-100可以提供许多好处改善各类废水生物处理过程。研究表明，微量营养素不足，使得絮状物的沉降不佳，导致沉降性差或高出水悬浮固体。添加营养素也增加了生物降解率，在很多情况下这将使得生物质更快速的对突然增加的负荷或有毒物质的冲击做出反应。最后，实验室研究表明，应用微量营养素能够使菌群保持健康，在短时间内提高有机物的降解率，降低最终出水BOD₅。

MicroClear M-100的优势

提高BOD/去除COD	缩短培养菌种时间
减少污泥积聚	增加絮状物的规格参数
有效的成本/易于使用的	提高生物活性
无需特殊设备	提高了系统效率



MicroClear M-100的应用

沼气池 污泥池 氧化塘 SBR 生物滤池 消化池
初沉池 曝气槽 二沉池活性污泥池 曝气池 静态池塘

生物酶的活性

所有的无机天然的维生素和营养

性能特性

有效的PH值.....5.2-9.5
有效的温度范围.....35-130 华氏度

微量营养素和微量矿物质元素

矿物质：钙 1.9% 铁 0.8% 镁 .123%
 锌 .0035% 磷 0.1 %
维生素：A, B, D, E, K 叶酸0.3毫克，
 抗坏血酸维生素150000毫克
 烟酸2500毫克

MicroClear M-100的包装

MicroClear M100是封装在25, 50, 100, 和400磅的容器，也可在各种大小的水溶性袋中。

典型特征

外观.....深绿色
气味.....泥土味
形态.....粉末状
pH.....6.5-7.5
保质期.....2年

贮存和处理

贮存.....贮存于阴凉干燥处
处理.....接触后用温热肥皂水清洗

案例一：江苏某化工厂：解决COD、SS稳定达标

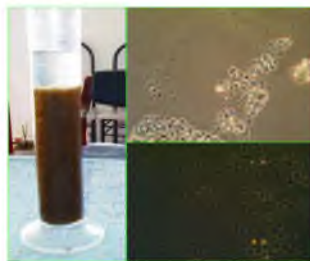
问题：设计废水处理能力为4000m³/d,采用物化+生化处理工艺。经物化处理后的废水进入CASS池，在池中进行常规活性污泥法的生物处理，进生化池水质约CODCr 450mg/L, SS（悬浮固体）500mg/L。出水水质需达到国家一级排放标准CODCr<100mg/L, SS<70mg/L。而其生产混合废水的酸性很强且富含锌盐和硫化物，治理难度较大，采用常规的物化+生化治理工艺存在运行效果不够稳定、出水水质CODCr、SS偏高等问题。

>>工艺流程：



>>解决方法：

为提高CODCr、SS的去除率，稳定出水水质，采用MicroSolv-400投加治理，对污水厂的4号CASS池进行改进。应用产品：MicroSolv-400，添加点见上述工艺流程图。投加前生物相不丰富，其中原生动物很少，且不活泼，胶团比较松散，没有特定的形状，大量的丝状菌穿插在菌胶团中，经过一个月的治理污泥混合液在显微镜下出现较多行动活泼的原、后生动物如钟虫、等枝虫等，菌胶团结合紧密，已有一些特定的形状。



投加MicroSolv-400前后具体的各项指标数据如下

日期	投加前一周	投加第一周	投加第二周	投加第一周	投加第一周
COD(mg/L)	100-85	75-35	65-45	60-30	45-25
SS(mg/L)	101-75	100-30	60-35	55-35	40-30
MLSS(mg/L)	3.5-4.5	34.6-5	5-6	36.5-7.5	6.5-9.0

注：MLSS为活性污泥浓度

由此可见，美国E. I公司MicroSolv-400对粘胶化纤废水生化处理上的改进是成功的，对废水中CODCr、SS的平均去除率可比未投加时分别提高了56%、44%，其出水水质良好、稳定。

Successful

成功案例

案例二：江苏某屠宰厂 解决COD达标排放以及油脂、恶臭问题

问题：该公司现圈养种猪15000头，处理污水4000t/d，处理工艺：厌氧+好氧+物化，在之前经过其他环保公司三年多污水处理COD出水排放为300左右，严重超过标准（现COD排放标准为100）。

>>工艺流程：



>>解决方法：

我公司于2009年7月15日投放使用MicroClear 205污水处理高效生物菌剂。

应用产品：MicroClear 205，添加点见上述工艺流程图

经过一周左右的时间，COD就由300下降到100以内，且经过二次的深度处理，现COD已稳定在60至70之间；达到见效快和稳定的好效果。

MicroClear 205



使用MicroClear 205生物高效复合菌剂前后的对比分析

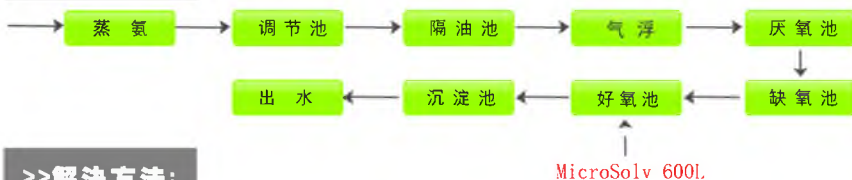
项目	处理前状况	处理后效益对比	
		执行COD100排放标准	执行COD380新标准
状况	进水COD有时高达20000以上，出水COD300左右	达标	达标
气味	有一定臭味	达标且减少臭味	达标且有效减少臭味
大肠杆菌	大肠杆菌等病菌大量存在	处理后可有效抑制大肠杆菌等病菌的繁殖	达标且超过标准
污泥产量	污泥产量不断增多	污泥将在内部消化	污泥在内部消化
技术服务		使用MicroClear 205高效生物复合菌剂技术，每月提供技术服务，每星期提供补充药剂。	使用MicroClear 205高效生物复合菌剂和物化处理技术服务，每月补充2至3次药剂

使用MicroClear 205后，大大提高和增强降解能力，从而强化生物降解水体中COD、BOD、色度的作用。调节池油脂壳由4.3米降为2.4米，泡沫消失，出水都能稳定的达标。

案例三：安徽某焦化厂——氨氮超标

问题：该焦化厂通过已有的一段好氧系统处理蒸氨后的废水，但氨氮去除效果不理想，通过生物增效技术快速将二段生化处理系统中的一条启动，来达到氨氮的有效去除而达标排放

>>工艺流程：



>>解决方法：

我公司对于上述问题，应用产品：MicroSolv 600L，添加点见上述工艺流程图。

使用产品前后系统进出水氨氮去除率对比：（单位：mg/l）

时 间	生物增效启动前	生物增效启动后
稀释后进水氨氮	87.0	59.8
出水氨氮	62.0	8.0
氨氮去除率	29%	86%

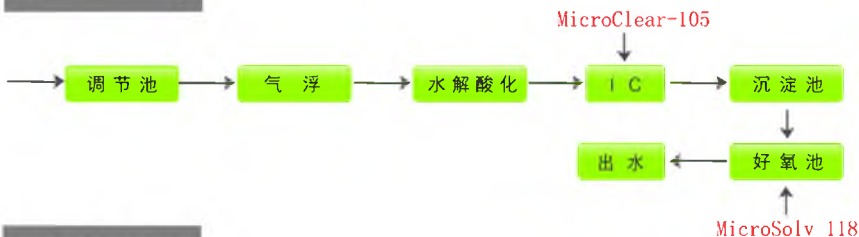


通过上述表格我们可以发现通过添加产品MicroSolv 600L前后氨氮的去除率由原先的29%提高到86%。而且在使用的过程中还发现仅用5天的时间就建立了消化系统，且消化反应效果稳定，氨氮去除率高。同时系统的抗冲击能力也相应提高，在使用期间，系统受到了进水氨氮冲击（如缺氧池进水突然高达93mg/l）或者高温冲击（有几日达到了38℃），但第二天就能恢复至正常，并一直处于稳定状态，说明产品MicroSolv 600L提高了系统应对高浓度、高温等外界不利因素的抗冲击能力。

案例四：山东某造纸厂——系统改造

问题：造纸废水浓度高、色度深、水量大、含纤维悬浮物多，废水有机物浓度较高，有机物主要是木质素、纤维素、有机酸等，以可溶性COD为主，采用的处理工艺为：物化+水解酸化+IC+沉淀+好氧，水量为8000m³/d，进水COD5500mg/L，处理出水在300左右，现排放标准提高，出水COD为100以内需要进行系统改造。

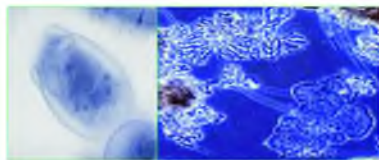
>>工艺流程：



>>解决方法：

在IC系统添加我们的MicroClear-105厌氧菌种，在好氧池添加我们的MicroSolv 118造纸专用菌种。

应用产品：MicroClear-105，MicroSolv 118，添加点见上述工艺流程图



我们通过添加MicroClear-105在2#IC罐。

添加MicroClear-105前后IC系统出水COD的对比：（单位：mg/l）

日期	第一周	第二周	第三周	第四周	第五周
1#,3#IC出水平均值	2800	2800	2800	2750	2800
2#IC在添加MicroClear-105后出水	2600	2200	1800	1500	1550

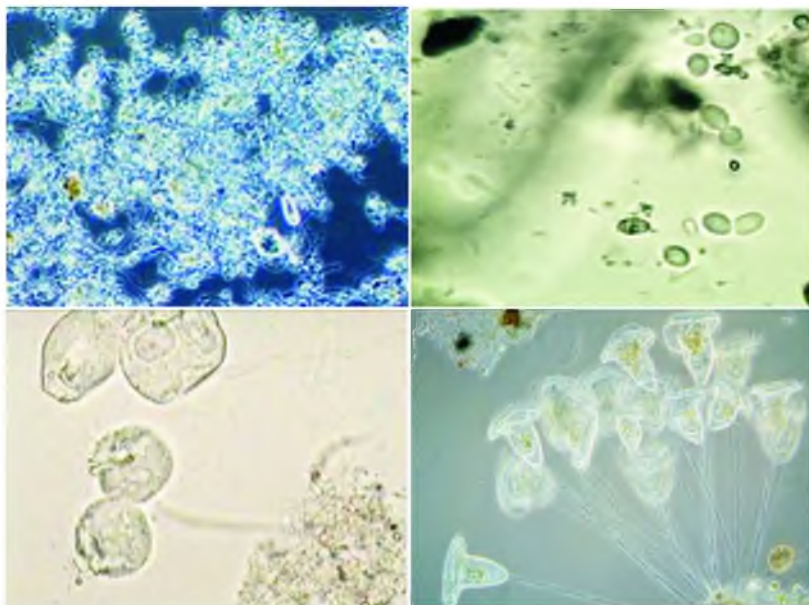
我们可以发现添加MicroClear-105产品后，三周左右IC处理系统的处理效率稳定的提高40%以上，大大的降低了生化系统的进水负荷。

我们通过添加MicroSolv 118在2#好氧池。

添加MicroSolv 118前后生化系统出水COD的对比：（单位：mg/l）

日期	第一周	第二周	第三周	第四周	第五周	第六周
1#, 3#,4#好氧池出水平均值	300	290	305	285	290	275
2#好氧池在添加MicroSolv 118后出水	200	150	120	80	85	75

我们可以发现添加MicroSolv 118产品后，一周后就见效，三到四周好氧处理系统的处理效率趋于稳定，比原先提高了50%以上，出水稳定的达标排放。





®

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