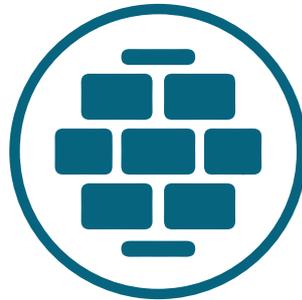


OMEX



OMEX

OMEX Environmental Ltd is based in the UK and operates both nationally and internationally. It provides a range of liquid and solid treatment solutions for the energy, water, construction and transport sectors.

Micronutrient and biological additives

These include trace element additives to optimise biogas production, iron solutions to minimise hydrogen sulphide levels and enzyme solutions to improve fibre breakdown, all of which help to optimise plant performance and increase return on investment.

Water Treatment

With their range of biological wastewater treatment solutions, OMEX are helping companies to comply with government legislation regarding wastewater discharge. These include odour and septicity control, anti-bulking agents, acid neutralisers, N&P solutions and microbiological augmentation products.

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OMEX

Concrete Admixtures

Anomex Ca is a calcium nitrate solution developed for the construction industry as a multi-purpose concrete admixture which allows concrete to set quickly even very low temperatures. Unlike other concrete admixtures, it also works to prevent corrosion which helps to strengthen the structure and counterbalances any possible delays to the process which can be caused by other admixtures such as plasticizers.

Biological compounds

Biological compounds used to optimise biological activity in aerobic wastewater treatment plants as well as high performance bacteria that will break down fat and grease permanently.

Deicers

OMEX liquid deicers are applied to most UK airport runways and a number of key roads and rail bridges. Liquid deicer is less abrasive and corrosive and less messy than grit salt and works down to -20 degrees Celsius.

Services

Service is at the heart of the OMEX offer. OMEX supply a complete treatment package from sample analysis of a wastewater treatment or biogas plant effluent to delivery of a custom made nutrient formulation, ensuring waste streams produced by Industrial treatment processes meet current consent parameters before discharge.



NUTROMEX® TEA

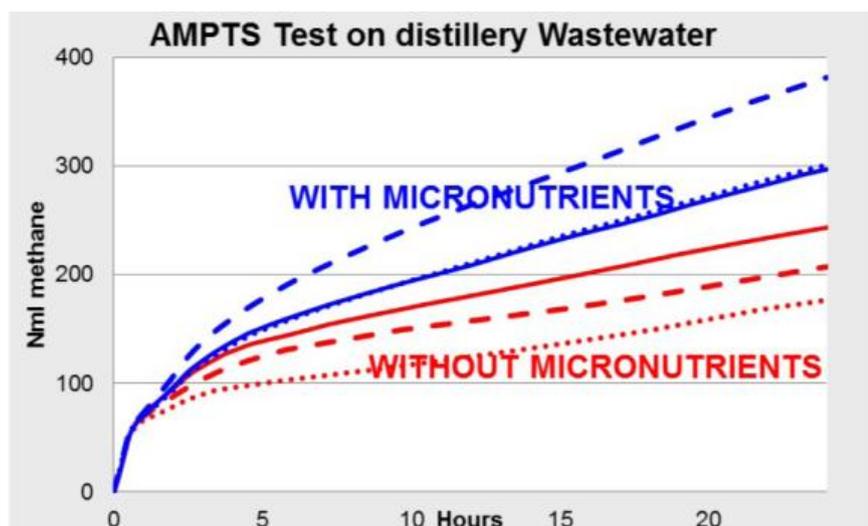
Trace Element Additives

Anaerobic Digestion is becoming increasingly popular as one of the main processes which produces energy from waste.

Anaerobic digestors treat wastewater and organic solid wastes such as municipal, food, agriculture crop, animal waste and a variety of other wastes like sewage sludge, converting the organic portion to Biogas.

Deficiencies often occur and can affect plant performance and biogas production. This can lead to poor COD and/or organic solids removal, elevated VFA levels, bacterial slime production, poor microbial growth and poor granulation in UASB type reactors.

In order for anaerobic plants to operate effectively they require a variety of nutrients for the micro-organisms to grow and function properly. Essential trace elements such as Iron (Fe), Nickel (Ni), Cobalt (Co), Manganese (Mn), Zinc (Zn), Copper (Cu), Molybdenum (Mo) and Selenium (Se). These nutrients are critical for the successful operation in anaerobic conditions and for correct bacterial growth.



OMEX

Omex Environmental has created the NUTROMEX TEA series, a range of bioavailable micronutrient supplements created for the AD market, in order to prevent these situations..

Omex will assess the requirements of a plant by the analysis of its influent and effluent. It will then produce a TEA solution tailor-made to treat the plants individual requirements, in a form which is fully bioavailable in anaerobic conditions.

Benefits of Nutromex TEA

- Increased Biogas production
- Increased Methane content of Biogas
- Decreased Digester VFA (Volatile Fatty Acids) content
- Increased profitability
- Enhanced Bio-Availability

Back Up Service

- Macro and micro-nutrient profiling
- VFA speciation
- Advice on process optimisation



MICRONUTRIENT AND BIOLOGICAL ADDITIVES



ENZYMES

Biological catalysts

OMEX supply enzymes for anaerobic digestion which effectively consume substrates with a high dry matter content to improve biogas production, reduce viscosity and minimise mixability issues in digesters.

These include enzymes applicable to cereal based fibre substrates and waste water treatment plants to improve substrate conversion (more biogas, less sludge).

Process optimization:

- Higher biogas/methane output
- Increased process stability
- Optimized feedstock usage
- Improved mixing

Process efficiency:

- Lower electricity consumption
- Higher efficiency

Economic advantages:

- Lower operation costs
- Lower maintenance costs

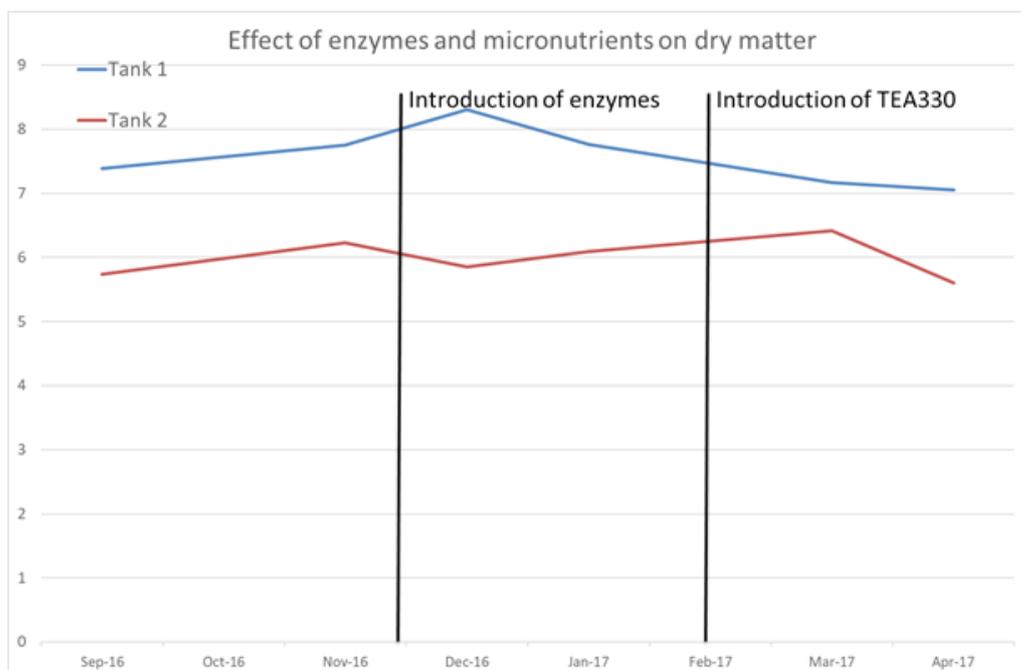
Socio-environmental advantages:

- Renewable electricity or heat supply

MICRONUTRIENT AND BIOLOGICAL ADDITIVES

The change in economic framework conditions but also the necessity for improved use of renewable energy sources, is a motive for many operators to optimise the process in municipal wastewater treatment plants with the help of modern methods. The addition of hydrolytic enzyme supplements therefore presents itself as a technically and economically sensible option.

A recent study was carried out looking at the optimisation of sewage sludge fermentation with the addition of enzymes to the anaerobic sludge stabilisation stage of a wastewater treatment plant. The study showed that with the daily addition of the enzyme preparation to the feed, the biogas yield increased significantly by 9,5 %, the amount of rest sludge reduced by 15 %, and the flocculant consumption decreased by 18%. The application of the enzyme preparation therefore proved to be advantageous for the sewage sludge treatment plant in both technical and economic terms.



MICRONUTRIENT AND BIOLOGICAL ADDITIVES

ACTIVE FE

Active Iron Powder

OMEX Environmental Ltd supply a non-hazardous iron powder product to the anaerobic industry for the minimisation of hydrogen sulphide levels in a plant's fermenter.

Biogas can often contain hydrogen sulphide which needs to be removed to avoid odour and corrosion issues occurring. The dissolved H₂S in high concentrations can be toxic to the bacteria in the slurry which can inhibit the production of biogas and cause its composition to alter.

The presence of hydrogen sulphide in biogas also makes it corrosive to metal parts. Iron is subject to surface attack, although not major corrosion. However the effect on non-ferrous metals in components, such as pressure regulators, gas meters, valves and mountings, is much more serious as they are very quickly corroded.



Active Fe is designed to minimise hydrogen sulphide levels in the fermenter by binding it immediately during formation. Therefore allowing the AD process to occur uninhibited resulting in optimal biogas yields and methane content.

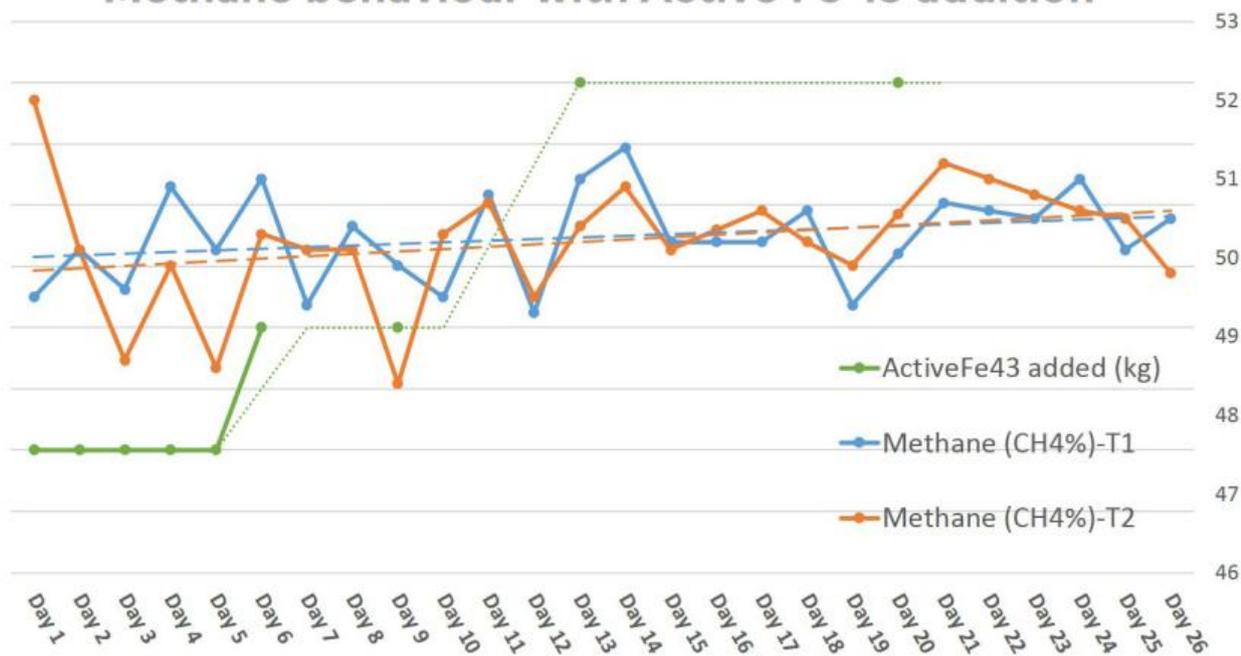
OMEX

How does Active Fe help?

- Easy to apply straight into the fermenter
- Prevents against acidification
- Non-hazardous compared to other iron products in the market
- Fast results
- Optimises Methane content



Methane behaviour with Active Fe 43 addition



MICRONUTRIENT AND BIOLOGICAL ADDITIVES

NUTROMEX N&P Series

Nitrogen and Phosphorous solutions

In biological wastewater systems, microorganisms metabolise the soluble pollution, producing carbon dioxide, water and more micro-organisms (sludge).

To do this with optimum efficiency, the microorganisms need a balanced diet that contains the correct ratios of mineral nutrients. Nutritionally, most wastewaters have been found to lack in Nitrogen (N) and Phosphorus (P).

Omex Environmental has developed the **NUTROMEX NP** range of solutions designed to optimise biological activity in both Aerobic and Anaerobic wastewater treatment plants.

Benefits

- Optimal COD and BOD removal
- Minimised solids loss
- Stable operation
- Minimised fluctuations in N and P outlet

Back-Up Service

- Macro and Micro nutrient profiling to establish the optimum solution for your individual needs.
- Microbiological analysis and reporting.
- Advice on process optimisation.

OMEX

The NUTROMEX NP range consists of;

NUTROMEX 100 Series

A range of Nitrogen and Phosphorus blends. Individual product blends with ratios from 100%N to 100%P can be provided to optimise plant performance.

NUTROMEX PLUS 200 Series

A range of N and P nutrients combined with fully bioavailable trace elements to provide a complete balanced nutritional feed.

NUTROMEX SALTS 400 Series

This series provide Ca, Mg, Na and K cations where they are lacking in an industrial treatment system.

NUTROMEX SALTS 600 Series

As above but with bioavailable trace elements. Used specifically for condensates being treated anaerobically.

NUTROMEX EXTRA PP 940

A blend of soluble carbohydrates, N, P, trace nutrients and essential cations. This super food product is used to augment COD in start ups, over shutdowns and during recovery from toxic shock.

WATER TREATMENT



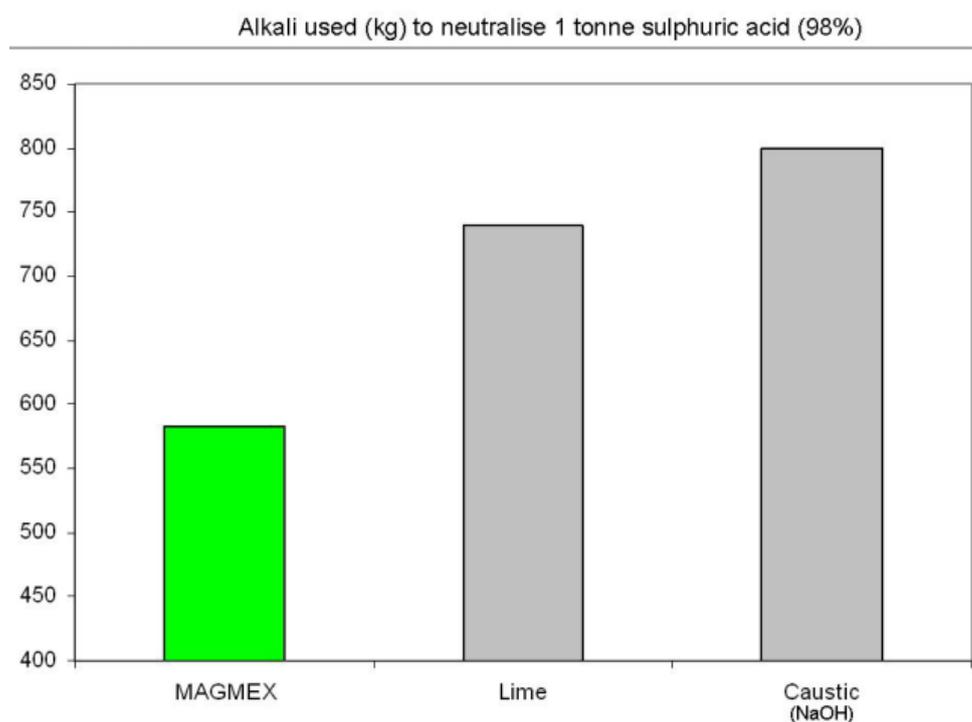
MAGMEX

Magnesium Hydroxide Suspensions

A range of Magnesium Hydroxide suspensions for treating acidic wastewaters and controlling pH levels within both anaerobic and aerobic systems.

Traditionally, sodium hydroxide (caustic soda) and calcium hydroxide (lime) have been used to neutralise acidic solutions. However, these compounds are reactive and can cause high pH levels if not controlled correctly.

The Magmex range is the environmentally friendly answer to the neutralisation of acidic wastewater. It is safe, ready-to-use and overcomes the majority of problems associated with the traditional acid neutralisers such as caustic soda or lime.



OMEX

The Magmex range includes;

Magmex 1060

A unique formulation specifically designed for use in situations where higher pH levels are needed to enhance precipitation.

Magmex 740

The standard formulation for use where a safe, efficient alkali is required for pH correction and where minimal sludge volumes are needed.

Magmex 706

A stable formulation for use in smaller scale applications where longer term storage is required without the need for agitation.

Magmex OP Series

OMEXs exclusive range of magnesium oxide and hydroxide powder products, which are available for a wide range of applications.

WATER TREATMENT



ANOMEX

Sodium and Calcium Nitrate solutions

Odour problems are of growing concern to wastewater treatment and municipal sewage treatment plant operators. Hydrogen sulphide is usually the major gaseous component with the typical 'bad egg' smell, detectable at very low levels.

Smell and septicity occurs when bacteria in the wastewater utilise all the available oxygen and start to reduce any sulphates present into sulphides. Lack of air supply, stagnant areas and warm temperatures all promote this undesirable biological activity.

ANOMEX has been developed to prevent this sulphide gas build up, by substituting nitrogen into the microbial respiratory processes.



WATER TREATMENT

OMEX

ANOMEX products are non-hazardous blends of sodium or calcium nitrate for simple and accurate dosing; they have proven to be extremely cost effective and efficient septicity control agents, tested, used and approved by UK water companies.

Anomex 64

OMEXs standard Sodium Nitrate solution used in biological wastewater treatment.

Anomex 76

OMEXs slightly stronger Calcium Nitrate solution used to prevent odour and septicity issues.

Benefits

SINGLE PREMIXED SOLUTION

Simplifies handling and dosing. Delivered direct into dosing system.

NON HAZARDOUS

Safe and simple dosing

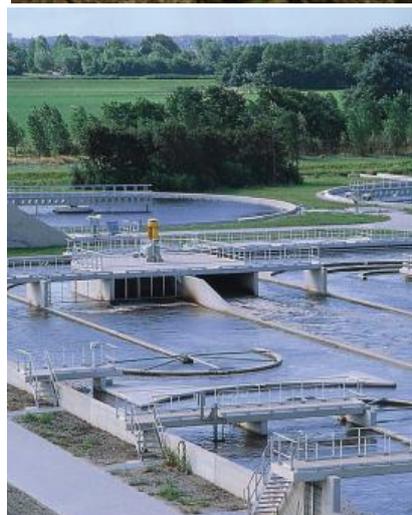
CONTROLLABLE

Precise Dosing. Stock levels provided by predictive delivery system.

ECONOMIC

Less administrative, handling, dosing, storage and safety costs.

WATER TREATMENT



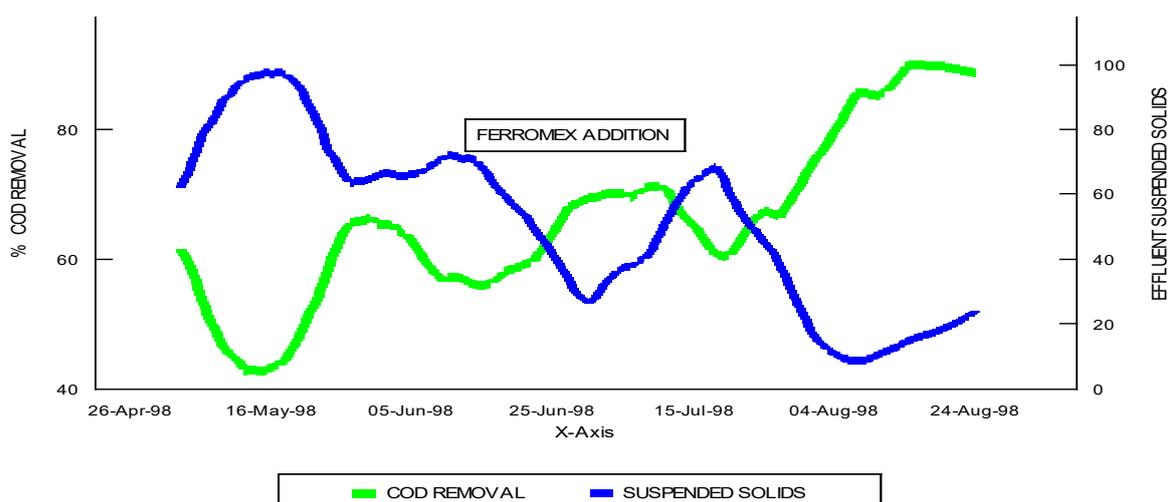
FERROMEX

Aluminium and Ferrous Salts

OMEX's range of aluminium and ferrous salt solutions have been designed to combat problems such as filamentous bulking, pin flocs, poor floc structure and turbid effluent which can be caused by many factors, such as nutrient deficiency, poor oxygenation and compounds in the wastewater stream that are preferentially consumed by filamentous bacterial species.

The FERROMEX® 620 & 630 series

The FERROMEX® products are combinations of inorganic iron, complex iron and bio-available trace elements created for activated sludge and other aerobic plants to assist with sludge settlement, flocculation and to improve a plants biological health.



OMEX

Alumex 610

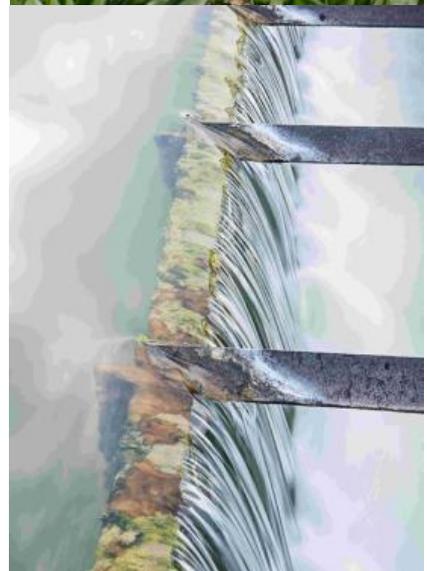
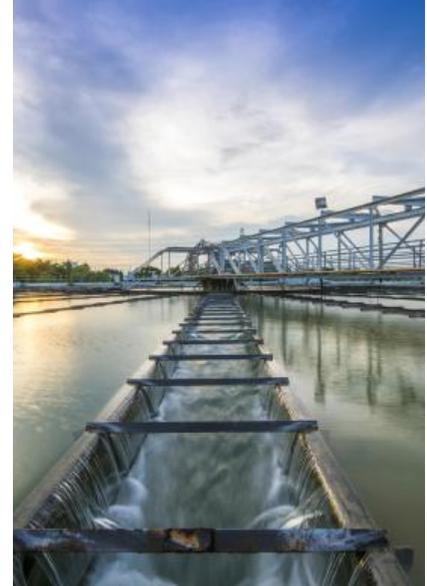
Alumex 610 is a specialised, inorganic, aluminium salt-based coagulant, designed to improve the settling capacity of sludges and coagulate suspended colloidal matter. Alumex shares the same key benefits of Ferronex as well as the advantage that unlike more commonly used coagulants, both products do not add sulphate to the system, which can cause odour problems later on in the process.

Bulk-X

The latest in advanced anti-bulking chemical technology, Bulk-X has been specifically developed to combat filamentous build-up in biological wastewater treatment facilities which can impact on long term plant performance and effectiveness.

Bulk-X is a quick acting, easy-to-handle product formulated as an alternative to sodium hypochlorite. The product destroys persistent filaments quickly and effectively to prevent the excessive build-up of filamentous bulking and reduce costly plant downtime.

WATER TREATMENT



CONCRETE ADMIXTURES

Calcium Nitrate Solution

Anomex Ca is a calcium nitrate solution developed for the construction industry as a multi-purpose concrete admixture which is used as a concrete setting accelerator even in cold temperatures.

Calcium increases the rate of early hydration of the concrete, thus, a speedier setting time and strength development of the concrete is achieved.

It also works to prevent corrosion in reinforced concrete by forming an oxide protective layer around the steel reinforcement which helps to strengthen and increase the lifetime of the structure.

Another advantage of Anomex Ca is that it counterbalances the retardation effect which can be created by other admixtures such as plasticizers and superplasticizers.

Key benefits

- Ability to cast concrete in extremely cold temperatures
- Prevent corrosion in reinforced concrete
- Shorter setting time
- Counterbalance of retardation process due to other admixtures

OMEX

Anomex Ca Range

The Anomex Ca range are calcium nitrate liquid solutions supplied in bulk as concrete additives.

Anomex Ca comes in two strengths, 45% and 50% strength solutions. Recommendation is dependant on individual requirements.

Both products are dispatched from the OMEX depot based in the UK and shipped throughout the UK and worldwide.



CONCRETE ADMIXTURES

OMEX

MICROMEX

Bioaugmentation

OMEX offers the Micromex range of solutions designed to optimise biological activity in aerobic wastewater treatment plants.

These formulations are naturally occurring and appropriate non-pathogenic compounds in high populations designed to help and reinforce the existing biomass thus improving treatment without incurring capital costs.

Micromex products are available in bulk or in water soluble pouches (40 per container) which are simply dropped into the aeration tank or dosing chamber.

The Micromex range contains the following series;

MICROMEX 100 Series

These bacteriological products are designed for overall plant performance by ensuring consistent reduction of chemical oxygen demand (COD) and improved floc settlement. This enhanced performance of the plant will give quantifiable financial savings.

MICROMEX FOG 200 Series

A range of products designed to tackle fats, oils and greases in wastewater and are specially selected to enhance floc formation characteristics and out compete undesirable organisms such as Nocardia.

BIOLOGICAL COMPOUNDS

BIO BLOCK

Biological fat and grease treatment

Bio block is a water soluble product that gradually dissolves over a 30 – 90 day period. The slow release provides a continuous supply of high performance bacteria that will break down fat and grease permanently.

Bio block keeps the bacteria where you want them to work and overcomes the problem of unreliable manual application hence avoiding difficult and expensive installation of mechanical dosing. Bio block also reduces foul odours such as hydrogen sulphide and mercaptans.

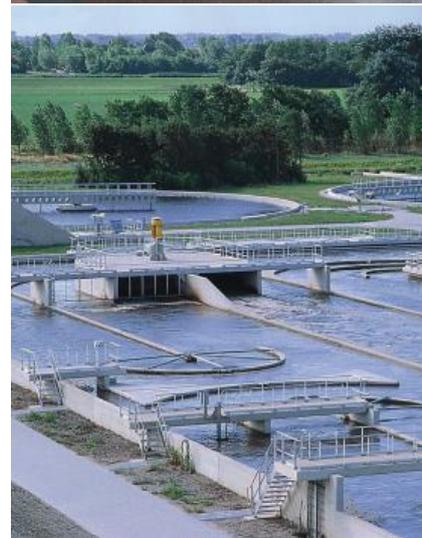
Application

The bacteria in bio block are able to reduce the build-up of fat and grease across a wide range of applications and is ideal for situations of high water flow, difficult access points and isolated locations such as pumping stations, wastewater treatment plants and settlement lagoons.

Bio block is easily and safely installed by suspending the block into the water flow. This makes it practical and cost effective for use in multiple areas of varying flow such as connecting drains or sewer systems.



BIOLOGICAL COMPOUNDS



DEICERS

Liquid and Solid Deicers

OMEX manufactures and supplies an advanced range of non-toxic, non-corrosive and non-hazardous liquid and solid deicers. Liquid deicers are the most widely used form of non-corrosive deicer, especially on larger areas such as airport runways due to rapid and accurate application.

OMEX also supply solid granular deicers for easy application in difficult to reach access areas. They are also ideal for use in amenity areas, where conventional salt can cause damage to plants and structures.

Packaging

OMEX deicers are supplied in a range of pack sizes from 10 litre drums to 1000 litre IBC containers to bulk tanker loads and 25 kg or 500 kg bags.

Application

Application is straightforward with a varied choice of applicators available, from a simple watering can with a fine rose and backpack sprayer, to pedestrian powered sprayers, to a range of towed sprayers.



OMEX

Products include;

Isomex 1

A conventional liquid deicer popular in civil and military airports.

Isomex 3

A potassium acetate liquid deicer which offers longer holdover.

Isomelt

A granular non-corrosive deicer.

Glycomex

A glycol based deicer used in airports.

Cryotech NAAC

A prilled non-corrosive deicer.

Surefoot

A high performance liquid deicer for use on footpaths and public thorough-fares, any situation where ice poses a risk to pedestrians and users.

DEICERS



OMEX

SERVICES

Dosing Units

Omex can supply and install a wide range of dosing systems. Standard Dosing Units of 1400, 2500, 6000 and 10,000 Litre, can be supplied, with on site commissioning, installation and tank fill.

As well as the standardised range, Omex Environmental can also custom design dosing systems to meet individual site specifications.

Onsite Trials

OMEX Environmental Ltd is able to supply equipment for site trials of Magmex, so that Plant Managers can enjoy the benefits of applying the product to the process without having to alter any of the existing infrastructure.

OMEX offer a range of trials units from an IBC flexible dosing plant that is able to fit in places where space is restricted to bulk trials units for long term trials, dependant on a customers' requirements.



SERVICES

OMEX

Nutrient Profiling

In addition to advanced on-site technical support, OMEX can provide new and existing customers with a nutrient profiling service. This is the basis to assess the correct nutrient dosage, (both amount and type), required in biological treatment systems such as activated sludge and anaerobic processes. It is also a way of giving periodic checks on the health of the overall system to enable optimum performance.

Technical Support

Technical support and advice is available from the very start of business with OMEX, from sample analysis in a fully equipped laboratory, to the recommendation of daily dosage rates of the required chemical for treatment plants, to tailor made nutrient solutions specifically designed for individual requirements

Sample analysis

OMEX offers an in-depth analysis and treatment of all the possible problems, which can occur within the wastewater treatment industry.

This usually involves a site visit, lab analysis of the effluent, where OMEX analyse the treatment performance of the wastewater and then a trial onsite before a final tailor-made solution is formulated

SERVICES



OMEX

OMEX Environmental Ltd
Riverside Industrial Estate
Estuary Road
King's Lynn
Norfolk
PE30 2HH

Tel: +44 (0)1553 770092
Fax: +44 (0)1553 776547
environmental@omex.com

Head Office
OMEX
Bardney Airfield
Tupholme
Lincoln
LN3 5TP

Tel: +44 (0)1526 396000
www.omex.com

