

MS14 Bio-Augmentation

• Municipal Activated Sludge and Variable Load •

Product Description

MS14 is a biological product specifically formulated to be effective in enhancing municipal wastewater biology, providing start-up ability for biological treatment and maintenance support for all waste effluents. As biological activity decreases during colder winter months MS14 can be used to restore normal operation and is often used to augment treatment during difficult periods.

Through extensive research activities, MS14 has been developed to involve 14 strains of bacteria, which have been selected for their ability to perform under both aerobic and anaerobic conditions, and to biodegrade organic material comprised of proteins, fats, carbohydrates and select hydrocarbons.

To assure rapid establishment in the biomass, MS14 is produced and blended with select biological nutrients and stimulants. MS14 is produced under ISO 9002 certified quality conditions.

Effect

Oasis Environmental's MS14, with its aerobic and facultative anaerobic microorganisms-establishes and maintains a biomass which, by providing greater resistance to the effects of organic inhibitors present in general waste waters, is able to perform more effectively than the naturally occurring biomass. Application of MS14 ensures that the natural mechanism for the selection of the biomass population is presented with a range of selected microorganisms. These aerobic and facultative anaerobic bacteria have been taken from their natural environment and then adapted to give optimum performance.

Benefits of MS14:

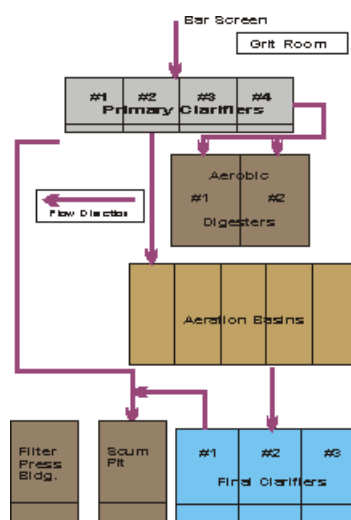
- Reduce Sludge
- Improve Effluent
- Reduce Odours
- Fast Start-ups

Sludge Reduction Programs • Reduce sludge build-up

- Control grease, foaming, or scum formation
- Improve settling
- Reduce odours
- Produce an excellent effluent

Filamentous Control • Ensure rapid biological start-up with suppression of undesirable filamentous bacteria

- Provide competitive organisms to reduce filamentous activity.



MS14 reduces the sludge produced in any type of secondary biological treatment system by improving the degradation of organic material and converting it to dead "Bugs" that weigh less and occupy less space.

Estimated Improvements:

High rate system with no primary clarifier: 25 to 35% reduction in dry solids produced.

Long retention time (greater than twenty four hours in aeration) with primary clarifier: 10 to 15% reduction in total dry solids.

Long retention time (greater than twenty four hours in aeration)

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without primary clarifier: 20%
reduction in dry solids.

Further reduction in the amount of
wet sludge removed may be achieved
because the solids dewater better
too!

Other Information:

Form:	Free-flowing granular powder
Colour:	Brown or Blue
Nutrient Content:	Biological nutrients & stimulants
Plate Count:	5 billion per gram

Packaging

1/4 & 1/2 kg. water soluble packs. Supplied in plastic pails • Bulk 12.5, 25 and 50kg pails

Storage

DO NOT FREEZE! Store in a cool dry location. Do not inhale dusts, avoid excessive skin contact. SEE M.S.D.S.

Activated Sludge Systems

Activated Sludge Systems include various process flow sheets for example: Extended Aeration, Contact Stabilization, Step Aeration, Oxygen Activated Sludge. The application rate for all products is based on the average daily flow rate to the aeration basin, excluding the return sludge stream. For seasonal or widely fluctuating flows, contact Oasis Environmental Ltd.

Application Instructions Treatment Plants

Flow Rate	Initial Dosage	Maintenance**
Up to 3800 litres/day	250g per day for 3 days	250g per week
Up to 19,000 litres/day	500g per day for 3 days	500g per week
Up to 76,000 litres/day	2.5kg*	3/4kg per week
Up to 200,000 litres/day	3.75kg*	1kg per week 250g per 2 days
Up to 950,000 litres/day	2.25kg*	250g per day
Up 2Mld	11.5kg.*	500g per day
Up to 3.75 Mld	23 kg*	1.25kg per Mld
Up to 20Mld	6kg/Mld*	1.25kg per Mld
Up to 45Mld	6kg/Mld*	1.25kg per Mld
Up to 380 Mld	3.75kg/Mld	750g per Mld

* Spread this initial dosage out over the course of 10 days.

** Add as regularly as possible. If it is required to miss one day, add that day's product with the next dosage.

Dosage rate will vary with flow rates, retention times and system variations. The rates above are for a typical, well-maintained system.

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