Solmar Formulation ND-511

For Enhancing Treatment of Domestic Wastewater Under Anaerobic Conditions
Ideal answer for troublesome septic systems, Imoff tanks, digesters and anaerobic lagoons. Particularly effective in controlling grease accumulations in leach lines of subsurface disposal fields.

Proven Results Use of Solmar bacterial supplementations in waste treatment operations have proven to:

. Improve BOD_5 removals
. Increase settleability
. Lower sludge volumes
. Eliminate grease mats
. Abate malodors
. Control hydrogen sulfide emissions
. Provide more predictable results
. Provide quicker recovery from upsets due to shock loadings or mechanical failures
. Clean grease in collection systems
. Prevent malodors from lagoon inversions
. Restore percolation in fields, percolation ponds, etc., which are plugged from organic matter

The Bioaugmentation Concept In most waste treatment systems, including lagoons, trickling filters, or activated sludge systems, naturally occurring bacteria can sufficiently handle the decomposition of waste products. However, when troublesome substrates or hydrogen sulfide formation create problems, bacteria supplementation can be effective.

The concept of bacterial supplementation, or bioaugmentation, has been around for generations. It is an important process in the brewing and dairy industries. For the part thirty years, its importance in waste treatment has been growing.

In practice, through the addition of specifically formulated bacteria to a waste stream, the bacteria soon dominate the system. Because the bacteria have specific characteristics that allow them to handle troublesome substrates, they are able to control and even eliminate typical problems associated with these substrates, such as grease buildups, insufficient BOD_5 removal, malodors, etc.

Through a carefully planned program or periodic maintenance dosages, the bacterial supplement will continue domination of a system and provide more dependable performance.

Solmar Formulation ND-511 is formulated from specifically cultured bacteria which are preserved through freeze-drying and air-drying techniques. To assure consistent quality the various strains and species are grown individually in pure form and preserved. Then they are compounded together with wetting agents, buffering agents, and other synergists, which allow the organisms to readily adapt themselves into the treatment system. The organisms have been carefully matched, so that they will complement one another and are compatible with existing systems in the areas of intended use.

The organisms chosen for the ND-511 formulation is particularly effective in handling trichloroethylene and related chemical compositions. Providing other co-substrates is not normally required with the ND-511 formulation.

Since the bacteria used are facultative anaerobes, they can function under either aerobic or anaerobic conditions. In anaerobic systems, they cannot generate hydrogen sulfide which makes them ideal to use in control of odors for corrosion inhibition, and improved safety.

Solmar Formulation ND-511 For maximum results, the bacterial cultures should be added as far upstream as practical. Introduction within the interceptor system in a waste treatment plant has been proven to be an effective means of pretreating wastes. Another effective areas is a wet well of the collection system where mixing generally occurs. Some plants treat at the headworks. In any case,

treatment before the primarily classifier is desirable, so that improved BOD_5 removals occur across the primary system.

In a lagoon system, the bacterial cultures can be added directly to the lagoon in areas where lift stations are used. It is recommended that application be at the lift station closest to the lagoon.

Applying Solmar Formulation ND-511 cultures are fully activated after soaking for four hours. In flowing systems with washouts, the cultures should be presoaked for four to thirty-six hours in lukewarm (80-100^{0}F) water. Use two gallons of either tap water or wastewater for each pound of ND-511. If the waste stream is cool, the slurry should be cooled to the systems temperature during the presoak to avoid thermal shock. In a lagoon or other systems with long detention times, presoaking is not necessary but the cultures should be added as a slurry. The slurry can then be added directly to the system.

The Experienced Leader Solmar Corp. has been supplying quality bacterial cultures since 1984. Solmar Corp. is structured to provide its customers with waste treatment expertise through personnel that are proven specialist in the field.

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pH Levels	Most applications are between 5.5 and 8.5. Most effective level is 7.
Temperature	Regular usage is between 55^0 to 100^0 F.
Form	Free-flowing powder and granules
Color	Individuals particles vary from white to tan
Bulk Density	6.7 lbs./gal/ or 0.8g/cc
Packaging	Cultures are packaged in convenient 25-pound pails, which are easily stored. Each pail contains a resealable plastic liner to minimize moisture pick-up.
Safety	This formulation is based upon harmless saprophytic organisms (the type normally present in soil) which utilize non-living organic matter as a food source. Since some persons are hypersensitive the related chemical compounds present, it is suggested that direct contact with skin be avoided with the dry powder itself. Simply wash hands should there be direct contact. Take normal precautions for the handling of any product, which is lightly dusty.
Storage	The cultures should be stored in a cool dry place. Moisture will activate the product. Pasteurization will occur above 120^{0}F.
Treatment Schedule	The quantities required for waste treatment plants depend upon the type of treatment system, the size of the system and the nature and characteristics of the wastewater. Due to the many variables that exist, individual treatment programs need to be tailored for each particular application. Solmar Corp. technical personnel are available for consultation and development of appropriate treatment programs. A completed questionnaire (form 005-015) should be returned to your Solmar Corp. representative for industrial waste applications. It is preferable that Biodegradation Response Studies be conducted at Solmar Corp.'s water laboratory before specific recommendations are made.

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