



RYDALL WO

BIODEGRADABLE Water Optimizer TM

Reduce Wastewater Contaminants, Solids, H₂S, and Subsequent Corrosion

Environmentally Safe Alternative to Wastewater Treatment Problems

Meeting today's restrictive discharge requirements is an issue at all wastewater treatment facilities. Municipalities and industrial wastewater treatment plant (WWTP) operators and owners are facing more restrictive regulations and potential litigation from local and federal agencies. In response to the issues surrounding WWTP's compliance, Apex Engineering Products Corporation has developed **RYDALL WO**. **RYDALL WO** is a **Water Optimizer** that is an environmentally safe additive which results in the reduction of hydrogen sulfide (H₂S), chemical oxygen demand (COD), biochemical oxygen demand (BOD), fats, oil, and grease (FOG), total dissolved solids (TDS), and total suspended solids (TSS). This unique enzymatic biocatalyst is also effective in enhancing methane (CH₄) production and dissolved oxygen (O₂) content.

RYDALL WO is a highly concentrated, complex mixture of nutrients, vitamins, enzymes and trace elements. The solution contains no bacteria, is biologically degradable and non-toxic for humans, animals, fish and plants. **RYDALL WO** is safe, even at high concentrations and poses no health risk to personnel handling the product. No fumes or irritating vapors are released from this product which is non-flammable and non-corrosive to metals, concrete and plastics.

What is RYDALL WO and How Does It Work?:

RYDALL WO can be metered into the wastewater stream entering WWTP's trunk sewer lagoons and sludge filter presses. This product has diverse applications on most wastewater treatment plant operations and maintenance issues. **RYDALL WO** should be applied on a continuous basis in order to maintain the effluent parameters required. The amount of **RYDALL WO** required is dependent on the magnitude of the problem, but due to its highly concentrated formulation, dosages typically range in the ppm level.

RYDALL WO is a technologically advanced product that is natural in origin, safe to handle and organically
Continued below

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What is RYDALL WO and How Does It Work? (continued)

biodegradable in application. **RYDALL WO**'s formulation includes a newly discovered cell stimulant that works on eliminating a vast array of problems that often exist at WWTP's sewers and sludge holding tanks. **RYDALL WO** is non-hazardous, non-toxic, and non-irritating.

The type of organisms and bacteria which are actually dominant in wastewaters depend on many factors, but of particular significance is the availability of micronutrients. Certain bacteria, especially aerobic species, need more trace elements as cofactors than anaerobic bacteria. If the availability of such nutrients is low, other bacteria which require fewer micronutrients will become dominant. In addition, sometimes bacteria or yeast strains release sufficient quantities of antibiotics that suppress growth of other microorganisms. Protozoa may also have an undesirable effect by feeding on bacteria, subsequently reducing the population of desirable bacteria.

RYDALL WO acts as a multi enzymatic catalyst to promote and allow micro flora to develop. **RYDALL WO** will stimulate bacteria affected by aerobic and anaerobic conditions thereby enhancing the natural biological cleaning process.

Directions for Use:

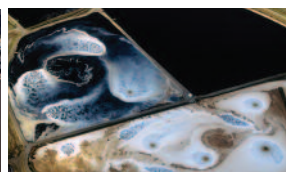
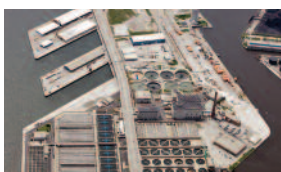
RYDALL WO provides affordable wastewater contaminant, solids, H₂S, and subsequent corrosion reduction. Introducing **RYDALL WO** to the WWTP's stream stimulates and promotes various aerobic and anaerobic bacteria and enhances oxygen availability. This in turn has a positive impact on pH values, shifting the equilibrium away from sulfide generation and preventing production of corrosive sulfuric acid formations. Reduction of H₂S helps eradicate associated odors and corrosion of piping and machinery. Please contact Apex Engineering Products Corporation concerning dosage recommendations for your specific application.

RYDALL WO is both economical and highly effective. Once the initial acclimation phase has been completed, further daily dosages act as boosters which continue the natural biological cleaning process.

RYDALL WO should be applied on a continuous basis in order to maintain the effluent parameters required. The amount of **RYDALL WO** required is dependent on the aerobic or anaerobic conditions. Recommended dosages are 200 ppm in aerobic or 100 ppm in anaerobic conditions.

TYPICAL USES, ISSUES AND RESULTS		
USAGE	ISSUE	TYPICAL RESULTS
Wastewater Treatment Plant	High BOD	Reduced ~50%
	High TSS	Reduced ~30%
Lagoon	High COD	Reduced ~60%
	Low D.O.	Increased ~100%
Sludge Tank	Odor	Reduced H ₂ S ~95%
Sewer	Corrosion	Reduced H ₂ S ~95%

Applications:



WWTP'S — RYDALL WO can be metered into the sewer lines feeding the WWTP's or can be added into the WWTP directly. The amount of **RYDALL WO** that is required is dependent on the retention time and the aerobic or anaerobic condition of the system.

LAGOONS — RYDALL WO can be introduced and mixed into the lagoon for both controlling odors and enhancing the dissolved oxygen levels. The increase in dissolved oxygen levels as well as the constituents of **RYDALL WO** promotes lower COD and TSS levels within the lagoon.

SLUDGE HANDLING FACILITIES — RYDALL WO can be sprayed on sludge coming off the sludge dewatering equipment or can be metered into the sludge holding tanks. This can result in significantly reduced levels of atmospheric hydrogen sulphide in these facilities. H₂S reduction rates of 95% are observed in most cases.

SEWERS — RYDALL WO can be used to prevent corrosion which commonly occurs in sewer lines. Metering **RYDALL WO** into these lines allows for the stabilization of the wastewater, which in turn disallows the formation of hydrogen sulfide.

OTHER APPLICATIONS — Applications for **RYDALL WO** are practically limitless... food processing plants, slaughter houses and animal by-products, pulp and paper plants and any application that needs waste water treatment, corrosion control, odor control or methane enhancement.

BIODEGRADABLE

For additional information, please contact our manufacturing facility at 630-820-8888 or visit our website at www.ApexEngineeringProducts.com.

Precautions: **RYDALL WO** contains no bacteria, is biologically degradable and non-toxic to humans, animals, fish, and plants. **RYDALL WO** is safe, even at high concentrations, and poses no health risk to personnel handling the product. No fumes or irritating vapors are released from this product which is non-flammable and non-corrosive to metals, concrete, and plastics.

Product designs and specifications are subject to change without notice. User is responsible for determining suitability of product.