

General Description

NONTOX: PETROLEUM HYDROCARBON REMEDIATION/CLEANING

- Is a biocatalytic system in a liquid concentrate form that stimulates and accelerates natural biological reactions. When combined with fresh or salt water and oxygen, the product will cause crude oil, jet fuel, diesel oil and other organic substances to rapidly decompose, eventually biodegrading them to carbon dioxide and water as end products.
- It is non-toxic and safe to humans, animals, marine life and plant life. It is 100% biodegradable.
- Works in concert with indigenous bacteria. No cultured or foreign bacteria are introduced into the ecosystem.
- Is nonflammable. It will reduce fire hazards by increasing flash points and auto-ignition threshold points in substances such as gasoline or fuel oil.
- Eliminates obnoxious odors associated with crude oil, petroleum derivatives and other organic molecules that are proceeding through the natural decomposing process.
- Is fully compatible with most types of application equipment now in use. The product may be easily applied by hand or power sprayers, helicopter, airplane or floating equipment. Its application requires no special safety equipment.

TARGETED HYDROCARBON CONTAMINANTS

In this case, the hydrocarbon compounds found in water, soil and air are the selected targets of NONTOX. This would include such petroleum derived products as crude oil, drilling muds, creosote, kerosene, coal tars, gasoline, diesel, bunker fuels, lubricating and hydraulic fluids. Other contaminant groups would include aliphatic and aromatic hydrocarbons, poly nuclear aromatic hydrocarbons, chlorinated aliphatic compounds, chlorinated aromatic compounds and chlorinated and non-chlorinated phenols.

It has been shown that the product has unique features in odor elimination of such gases as hydrogen sulfide, ammonia, mercaptan and other noxious odors emanating from anaerobic decomposition. The odor degradation activity happens in a very short period and effectively eliminates volatilization of light chain organic molecules, such as the BTEX group of petrochemicals, into the atmosphere.

TREATMENT METHODOLOGY

The product is fully compatible with most types of application equipment now in use. NONTOX may be easily applied with hand or power sprayers, standard educator tubes, helicopters, airplane or floating equipment. No special nozzles or hoses are required.

Each treatment site may differ in its requirements and modality of treatment. Factors that can influence the tactical use of NONTOX are:

Redox Potential	Temperature
Availability of Nutrients	Nature and Concentration of Contaminants
pH	Heavy Metals

Should these variables complicate the application and treatment procedures, the NONTOX works well with other commonly accepted treatment modalities such as venting, injection aeration, aeration lagoons and enoculants for removal of heavy metals.

Water or Beach Spills

Reducing the danger of oil reaching beaches and shore structures is best achieved by spraying the oil slick perimeter with a diluted solution of 10 gallons of NONTOX mixed with 150 gallons of sea water or fresh water for each 40,000 square feet of surface area to be treated. If the slick has a heavy consistency, it is recommended that a 1:15 diluted NONTOX solution is applied over a three-day period, using one-third of the mixed solution each day. For best results, the product should be applied at a high pressure – generally above 500 psi.

TECHNICAL DATA

Bacterial Proliferation

The successful biodegradation of petroleum is dependent on two factors: 1) having the bio-organic catalyst reduce the petroleum to a form, which can be readily assimilated, by bacteria and 2) stimulating the proliferation of naturally occurring non-pathogenic heterotrophic bacteria. NONTOX to significantly increase beneficial bacterial activity in bay water by 12,857% and ocean water by 14,333%.

Accelerated Bioremediation

Independent laboratory studies from specialists in petroleum technology have quantified the ability of NONTOX to dramatically reduce petroleum contaminants. showing a 90% reduction in Jet-A, Diesel-2 and Heavy Duty Lube Oil within 96 hours. While treatment time required may vary dependent on conditions previously noted, the mode of action is the same. NONTOX is a unique biocatalytic system that accelerates natural biological reactions with hydrocarbon products in water.

METAL CONTAMINANT PRECIPITATION

Another benefit of NONTOX use is its ability to break the matrix that suspends metals.

FLAMMABILITY REDUCTION

Open cup flash points and auto ignition temperature tests quantify the ability of NONTOX to render petroleum products nonflammable and dramatically increase their auto ignition temperatures. NONTOX alters the molecular structure that dramatically reduces flammability and the elimination of volatile organic compounds (VOCs) and their odors. The importance of this feature cannot be overstated in terms of shipboard safety and survivability. In addition, the use of other ecologically incompatible materials, such as AFFF Foam, may be significantly reduced.

SAFETY PROFILE

Extensive independent laboratory testing utilizing accepted standards for dermal and ocular effects on animal and human subjects have been performed. Phytotoxicity, bacteria community and internal aquatic organism safety studies are well documented.

OTHER POSSIBLE APPLICATIONS

- Initial Actions for Fire Fighting, i.e. cover the fire hazard with a layer of AFFF and flash point reducing product.
- Fuel or Oil Tank Cleaning
- Engine / Generator Wipe down
- Galley Drain Line Unclogging
- CHT Tank Cleaning / Degreasing
- Flight Deck Cleaning (should be able to hose it over the side).
- Trough Cleaning