

ENCAPSOL – VAPOUR SUPPRESSION



"Confined Space Entry, Hazardous Atmospheres that Support Combustion, Fugitive Vapor Emissions Challenges have all

been Eliminated or Mitigated With The addition of one product to our EH&S Arsenal thanks to The **ENCAPSOL** Technology"

Encapsol[®] has an amazing ability to suppress or eliminate Volatile Organic Compounds (VOC's). Hydrocarbon Vapors and associated Odors are reclaimed and encapsulated within the Encapsol microemulsion providing instantaneous and mid term vapor suppression.

Commercial Applications Include:

- Tank Degassing & Work-over Operations
- Fugitive Nuisance Odor Suppression
- Pipeline Operations
- Welding or "Hotwork" Involving Hydrocarbon Environments
- Mass Excavation Sites Involving Hydrocarbon or H2S Vapors
- Firefighting Vapor Suppression Activities
- Haz-Mat Applications
- Bilge Vapor Suppression
- Lethal Mist Mitigation and Homeland Security Applications>

Encapsol[®], in its concentrated form, is a viscous liquid material that must be diluted with water to a 3% to 6% solution . A fluorescent red Vegetable dye is present in the formula allowing **Encapsol**[®] to be detected during application (Also available in CLEAR). Once diluted, **Encapsol**[®] can be applied with virtually any equipment that can spray water. **Encapsol**[®] will not harm equipment or clog pipes. Depending upon the scope or application; applicators such as water trucks, sprinkler systems, portable agricultural sprayers, foam eduction systems & pressure equipment can be utilized. On smaller applications; garden sprayers, water extinguishers or a garden hose with a fertilizer attachment on the nozzle can be used effectively. This characteristic makes **Encapsol**[®] very adaptable and most convenient to use in almost any situation where Vapors and/or odors are a problem. **Encapsol**[®] is equally effective when used with all types of water (soft, hard, salt or potable). Since **Encapsol**[®] is not a foam, it can be applied on high wind days as well as hillsides and is not subject to physical breaching.

Cost Effective - Lasts a long time

Simple - Applies like water

Versatile - One Product Replaces Inferior and/or Dangerous Chemical

Water Based, Biodegradable and Fast--Suppresses VOC's within seconds! Because **Encapsol**[®] applies like water, it's applications are almost endless. **In Underground Storage Tanks (UST's), Drum washers/recyclers and in refinery and on oil production platforms .**

Because **Encapsol**[®] enhances the bioremediation of organic compounds, it makes it possible to dispose of wash water to a plant's activated sludge pond or to a POTW (With proper Approvals).

Encapsol[®] is commonly utilized by Haz Mat, Emergency Response, and Fire Departments Internationally to suppress VOC vapors and odors. Many departments report that **Encapsol**[®] introduced into the sanitary sewers effectively eliminates the explosion hazard when gasoline or volatiles leaks into the municipal sewer systems.

NOTE: Always follow State and Federal guidelines and approvals before using in sewers. We have a variety of letters from the US of America Fire Depts. and Sanitation Districts regarding this procedure available.

Encapsol® PinkWater® Versus Fire-Fighting Foams

PinkWater®, as a dual response agent, offers the Fire Service/ Emergency Response industry many unique advantages over traditional Aqueous Fire Fighting Foams responses to hydrocarbon/solvent spills and/or fires from Safety, Operational, and an Environmental Impact standpoints.





On class B (hydrocarbon) fires, **PinkWater®** plays a dual role in efficiently knocking down the Flame AND neutralizing the hydrocarbon source. Neutralization of unburned hydrocarbon is achieved by encapsulation thus eliminating VOC Vapor release. This approach offers an added degree of safety over Foams by eliminating possibility of flash back due “Blanket” breaching and/or Foam dissipation.



When dealing with non-ignited spills involving volatile hydrocarbons and most volatile solvents, **PinkWater®** *prevents ignition & explosion hazards of fuel source* when properly applied by encapsulating and micro-emulsifying the spill. Foams merely blanket the spill and separate the Fuel source from the oxygen, this physical activity creates significant operational challenges for the responder. As an added benefit, **PinkWater®** breaks down & significantly accelerates natural attenuation of residual, unrecoverable runoff* thereby mitigating the potential of costly future liability. Another concern raised by many environmentalists is the fact that many Foam products contain hazardous ingredients and/or are corrosive. **PinkWater®** is a non-hazardous, non-corrosive, water-based product. Unlike many Foam products, **PinkWater®** will **not** cause the etching of or pitting of aluminum surfaces as confirmed by ASTM D-930 testing procedures conducted.

PinkWater® is the preferred choice when attempting to **INCREASE SAFETY** while simultaneously reducing negative ecological impacts, total response time and clean up expenses involved with standard Fire Fighting Foam responses. These features are particularly beneficial in areas where closure of roadway or incident area (ie: Railway, airport, major thoroughfare, industrial/refining facility) has expensive economic ripple effects.

Advantages over Foams:

-  **Not a blanket approach, **PinkWater®** actually neutralizes the fuel and eliminates Flammability and/or combustibility of the hydrocarbon.**
-  **No blankets to breach or dissipate.**
-  **Allows added safety to Fire service personnel.**
-  **Initiates secondary cleanup, significantly lowering total “per incident” response costs.**

PinkWater® has been tested & Listed by the following Internationally recognized organizations:

Underwriters Labs (UL)
Underwriters Labs Canada (ULC)
American Bureau of Shipping (ABS)

Encapsol® PinkWater®

Versus Fire-Fighting Foams

Any unrecoverable incident effluent is then more readily degradable with the environmental fate being H₂O, CO₂ and cell mass.*

- ✂ Standard Foam Eductor or proportioner set at 6% with 90-110 GPM flow rate.
- ✂ **AGITATE THOROUGHLY PinkWater® SOLUTION AND HYDROCARBON/SOLVENT WHEN TREATING A SPILL**
- ✂ 200 PSI at eductor or Mfg.'s recommendation
- ✂ Standard Adjustable or Automatic Nozzle Set at Hard cone to coarse stream
- ✂ 0.2 GPM /square foot
- ✂ Storage: 35° - 120° F

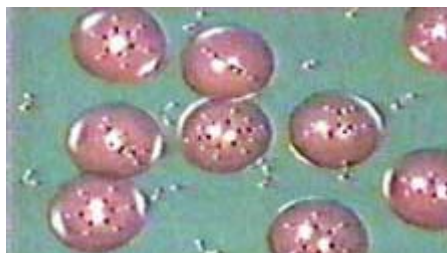
FOR CLASS A & CLASS B FIRES, HYDROCARBON SPILLS AND MOST VOLATILE SOLVENT SPILLS

This material is made available for use by professionals or persons having proper technical skills to Be used at their own discretion. The statements made herein are guidelines only and may require modification to site specific conditions. Nothing contained herein is a warrantee or to be taken as a license to use without proper authority. PinkWater® should be used in accordance with all Federal, State and Local rules and regulations.

- In any response situation, wherever possible, it is preferable to recover as much effluent as practicable.

As a design feature of a PinkWater® approach, recovered effluent (PinkWater® Solution/hydrocarbon mixture) is easily transported & treated at a local POTW or Wastewater treatment facility. Unrecoverable effluent has a significantly less detrimental impact upon the environment than effluent resulting from a Foam response.

Figure 2- Encapsol® PinkWater® Encapsulation



This photo (Figure 2) illustrates Encapsol® PinkWater® encapsulating the hydrocarbon molecules (black droplets partitioned within the micelle) following initial emulsification.

FIRE FIGHTING

Initially, the explosion hazard must be addressed and mitigated. Currently, SOP of many departments and emergency responders' calls for the use of fire-fighting foams to prevent ignition. While this approach is adequate in some instances, there are many drawbacks to using Foam. First, when blanketing a spill with foam, only a barrier between the fuel source and the oxygen is created, this thin film must be constantly monitored & maintained to prevent dissipation and/or breaching of the "blanket". A dangerous breach due to poor weather, wind and/or dimensional contours of the accident scene could spell disaster and, quite possibly, injury to life, limb or property. In addition to the obvious safety concerns, "Foaming" spills creates an environmental & operational challenge (Many foams are considered hazardous materials themselves) and can result in exorbitantly high, long-term secondary cleanup costs for the Responsible Party. Finally, due to the time consuming nature of foam responses, incident response costs are inflated with responders and apparatus potentially unavailable for an unduly extended time periods.

Fortunately the newest product in the Hydrocarbon Mitigation Technology line has emerged as the premier approach to this age-old problem. **PinkWater®**, is listed by Underwriters' Laboratories US & Canada and is certified by the American Bureau of Shipping® (ABS). This product is on the leading edge of fire fighting & environmental clean up technology, as it is a non hazardous, user friendly, effective Water Additive for Fire Control, Vapor Mitigation & Spill clean up. **PinkWater®** is the only UL® & ABS® listed product in the world today that will render volatile fuels and many solvents non-flammable, non-explosive, and readily biodegradable. **PinkWater®** also aids in the elimination of V.O.C. vapor release is gaining critical mass in the industry with many large Fire & Haz-Mat companies in the United States, Canada & Mexico taking advantage of both the safety and environmental benefits offered by the technology. **PinkWater®** is a unique, water-based, non-hazardous, biodegradable formulation. It works to microemulsify and reduce hydrocarbon compounds into extremely small particles, separating long chain hydrocarbons. technology as a spill response agent significantly reduces volatile vapors (VOC's) on initial application, with LEL's (Lower Explosive Limits) approaching "zero" in a very short time thus eliminating the potential for explosion and fire*. In addition **PinkWater®** eliminates sheens and creates a slip free surface to safely facilitate any extrication and clean up efforts.

when circumstances necessitate, **PinkWater®** offers superior fire knockdown performance. It does not require special equipment. The standard foam eductor works with the product. It can be utilized in high wind days, for land or surface spills or uneven ground. Fresh, salty, or brackish water can be used, and will not alter the product's capabilities. **PinkWater®** has been shown to reduce surface tension down to 30 dyne/cm at extremely low dilution rates, this means less water is used. Ideal for incidents with limited access and/or fire department's operating with limited supplies of water.

Public Safety and our environment cannot be compromised. By taking advantage of new technology like eNCAPSOL responders are able to perform a more effective, safer response. This results in reduced liability for the community, greater safety, lowered costs and protection of our environment