

Ivey-sol[®] Tank Decontamination and Vessel Cleaning

The refining and hydrocarbon processing industry is ready for the new wave of vessel cleaning technology. **Ivey-sol[®]** is a new patented product that greatly reduces downtime and improves overall safety while providing immediate cost savings for any tank cleaning process. **Ivey-sol[®]** is non-toxic, non-corrosive, non-hazardous, 100% biodegradable and also non-skin sensitizing. Ivey-sol[®] is simply mixed with water (at 3 to 6%) to form micelles “chemical cocoon-like encapsulations” which seek and surround the various forms of hydrocarbons. **Ivey-sol[®]** can be premixed or introduced into the water and can be sprayed, steamed, circulated or left to stand.

Why Use Ivey-sol[®] for Cleaning?

The new ‘Micelle Encapsulation Chemistry’ of **Ivey-sol[®]** technology enables the reduction of typical concerns with traditional chemical cleaning and degassing processes. Using Ivey-sol[®] for a tank cleaning process saves time - enabling your vessel cleaning process to be ahead of schedule - and in the process providing immediate cost savings while ensuring an increased level of safety.

Ivey-sol[®] penetrates the hydrocarbon liquids, shuts down the vapours and encapsulates the sludge within a process vessel which renders combustion inflammable. It also shuts down

Hydrogen Sulfide (H₂S) and iron sulfides. **Ivey-sol[®]** can be used when pressure washing, premixed into boiler water to produce steam, injected into existing steam lines or circulated into the process. **Ivey-sol[®]** replaces harmful cleaners such as diesel, caustics, and xylene(s).



Ivey-sol[®] Approvals

- Non-Toxic, Non-Corrosive, Non-Hazardous, 100% Biodegradable, and Non-Skin Sensitizing
- Accepted for use by Canadian Provincial and USA State Regulators for the in-situ and /or ex-situ remediation of NAPL contaminated sites
- Two Canadian and Two USA Patents Issued. Several International Patents pending

The Benefits of using Ivey-sol[®] for the Cleaning Process

- Selective encapsulation of Hydrocarbons and Cleans Effectively
- Improves Personnel Safety by Reducing Flash Point Issues (LEL/VOC)
- Eliminates Benzene, H₂S and Pyrophoric Iron Concerns
- Reduces Steam-Out Time and Provides Quick Vessel Entry and Sludge Breakdown and Removal
- Able to be Merged into the Shutdown Operations, Minimizing Turnaround Time and Reducing Outside Contractor Cost
- Reduces Hazardous Waste Disposal Requirements. Ivey-sol[®] solution added to the sludge creating a slurry that allows for easy removal. Slurry can be processed through an API separator and recoverable fuels can be separated from sludge.

Circulation Applications: The basic process for vessel and piping decontamination involves an Ivey-sol® solution that is circulated at a targeted temperature through all equipment and piping. The primary goals of this procedure are to reduce Benzene to less than 1 ppm, H2S to near zero and LEL to near zero. The secondary goals of this procedure are to remove oils and sludges from both equipment and piping. This is done by wetting the solids and walls and by micro-encapsulating the oil and sludges so that it can be removed from the system and recovered with the water phase.

Steaming Applications: This process allows the quickest possible method to enter process equipment. Ivey-sol® is injected into the steam during a normal steam-out. The Ivey-sol® solution becomes part of the steam and contacts all surfaces of the process equipment. Costly temporary circulation pumps and the amount of waste generated are greatly reduced. Ivey-sol® reduces steam out time consistently. Iron Sulfide, benzene and LEL are reduced to the same levels as the circulation process. Ivey-sol® solution penetrates into the walls to remove deep-seated hydrocarbons for complete cleaning (tank contents dictate dry or wet steam process).



Tank Degassing/Vapor Suppression: Ivey-sol® dual action of emulsification and encapsulation makes it a natural for degassing and cleaning tanks, vessels and equipment prior to entry, welding or other hot work. When applied correctly, Ivey-sol® will bring down LEL's quickly and keeps them down while the work progresses. Increased safety and reduced downtime is a winning combination.



Washing External Surfaces: Ivey-sol® can dissolve and remove heavy hydrocarbon deposits on external surfaces. Personnel can work in a safer environment and eliminating concerns from using low flash point solvents and degreasers.

The Ivey-sol® is premixed in water at only 3% in a high-pressure washer holding tank. The solution is circulated through the heating coils and discharged at standards pressures.

- Easy Application – just spray, wipe, brush or splash - then rinse
- Quick Penetration - softens before it dissolves so thick accumulations can often be easily scraped from rough surfaces prior to dissolving them
- Non skin-sensitizing to hands and clothing
- Washes clean with water - leaves no film

Tank Cleaning using Ivey-sol®

Prior to Cleaning with Ivey-sol®:



After Cleaning with Ivey-sol®:



Technical Support: Ivey International Inc. (III) can also provide technical support in addition to being a vendor of Ivey-sol®, we also provide the entire vessel cleaning solution from project inception to completion. We offer recommendations, technical solutions, project design and management, technical training and assistance to support the use of Ivey-sol® for tank cleaning operations. During the past few years, we have achieved growing support and endorsement from many customers and contractors both locally and internationally due to the repeated success using Ivey-sol®.

Our goal is to enable our customer to simplify the vessel cleaning process while promoting safety and reducing overall project costs and time. Please contact us with any vessel cleaning and decontamination inquiries. We are happy to provide you with more information about Ivey-sol®. Contact us toll free at 1-800-246-2744, <mailto:budivey@iveyinternational.com> or visit our web site at www.iveyinternational.com