

SAFE CARE®

Cleaners, Solvents & Specialty Products



Oil & Gas Industry

GEMTEK® Products develops and manufactures innovative plant-based chemistries for environmental solutions in the oil & gas industry.

Unlike most products used in the oil and gas industry today, our plant-based surfactants and solvents safely break down organic contaminants, increase oil well production, break oil/water emulsions and remediate petroleum hydrocarbons, chlorinated solvents and heavy metals. Applications include: Enhanced Oil Recovery, Soil/Groundwater Remediation, Oil Spill Recovery, Rig/Equipment Maintenance, Wellbore Productivity, Cooling Pond Cleaning, and Tank Cleaning.

SAFE CARE® products are:

- Non-Toxic
- Non-Reactive
- Non-Hazardous
- Readily biodegradable
- Derived from renewable resources
- Safe to use, store and dispose of



Illustrates the separation of crude oil and water using our plant-based, non-ionic surfactant system: **SC-1000™**.



SC-1000™ is listed with USEPA NCP



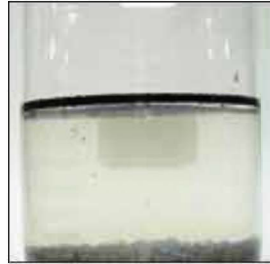
SC-1000™ is certified by CEFAS with a Gold rating for the North Sea



Product Applications

ENHANCED OIL RECOVERY / IMPROVED YIELDS:

The benefits of non-ionic plant-based surfactants and solvents have been gaining attention because of their proven performance and environmental safety. Depending on site conditions, **SC-1000™** Aqueous Cleaner may be used alone or enhanced with our water miscible solvent, **SC-SuperSolv™** to boost the effectiveness of “water-flooding” by increasing “injectivity” and lowering interfacial surface tension.



Demonstrates the immediate release of oil from sand using an 80/20 blend of SC-1000 and SC-SuperSolv at a 5% solution in water.



Top view of the beaker at 30 minutes and two hours.

SOIL / GROUNDWATER REMEDIATION:

Soil and groundwater that have heavy hydrocarbon contamination including NAPL, DNAPL creosote and LNAPL fuel oil can be treated by using a **SAFE CARE®** solution that may be customized for site conditions. The micelle technology of **SC-1000™**, which may be enhanced with **SC-SuperSolv™**, surround the contaminants to form a temporary micro-emulsion which allow the hydrocarbon to release from the soil. Liquid effluent can then be further treated by conventional oil water separation methods, thereby further reducing the clean water system requirements.

Methyl-tert-butyl-Ether (MtBE) EPA 8021B Testing conducted by Aquatic Consulting & Testing, Inc.		
MtBE Working Std: 10 mg/l Std MtBE 0.010 mg/l MtBE	SC-1000 Working Std: 10 mg/l Std SC-1000 0.100 mg/l SC-1000	
Sample Identification	Lab Detection Limit (ug/L)	Analytical Result (ug/L)
Control - Top	5.0	6.7
Control - Bottom	5.0	6.7
SC-1000 - Top	5.0	Non Detected
SC-1000 - Bottom	5.0	Non Detected
MtBE was displaced by the SC-1000 in the water column		

OIL SPILL RECOVERY:

The colloidal micelle structure of **SC-1000™** has an extremely high hydrophilic, lipophilic balance (HLB) favoring water attraction while having an extremely weak lipophilic attraction (fatty phase). **SC-1000™** cleans by displacing petroleum contaminants as it seeks to attach to water molecules. **SC-1000™** reduces the surface tension of the oil at the substrate surface interface, which then weakens the polar attraction of oil to the surface and allows it to rise from the substrate surface in the presence of water (either fresh or salt water) by its relative density to the surface of the water column

RIG / EQUIPMENT MAINTANANCE:

SAFE CARE® products can be used for virtually any space or surface associated with land or offshore oil production, including:

- Decks
- Walkways
- Cantilevers
- Pump room and bilge
- Portable water tanks
- Accommodation areas



WELLBORE PRODUCTIVITY:

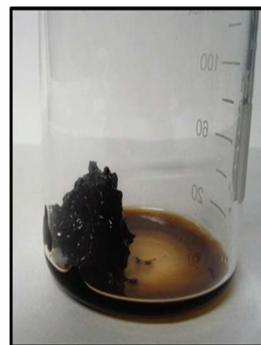
The blend of **SC-1000™** and **SC-SuperSolv™** will increase production, permeability in the nearfield, and flow to well by treating blockages and clogs in wellbore casing, well perforations and nearfield including clays, asphaltenes, paraffins, biological blockages and biofilms. The **SAFE CARE®** solution activates the formation which effectively:

- Breaks apart bonds that hold hydrocarbon and biological blockages together
- Decrease the viscosity of heavy oils
- Creates pressure to drive the dissolved blockages through the perforations into the wellbore where they can be removed
- Cause clays to go from a solid to a more free flowing suspension enabling them to be readily removed



COOLING POND CLEANING:

Cooling pond cleaning using **SC-1000™**, **SC-EZ-Solv** and/or **SC-SuperSolv™** have been demonstrated to improve thermal transmission, reduce corrosion, and biological growth, as well as separate petroleum and other oil related fractions, and reduce total chemical cost through recycling.



Before



After

Sludge can be removed and refined to offset cleaning costs. Paraffin wax can be liquified using **GP-DiSolv™** Safety Solvent.

TANK CLEANING:

SAFE CARE® products help to remove the oil and water from the solids, then further separate the oil from the water. When **SC-1000™** and/or a blend of **SC-SuperSolv™** are mixed with the oil, water and sludge they create a temporary micro-emulsion. Through a closed-loop system, this emulsion can then be separated whereas the oil can be pumped directly to another vessel and the water can be pumped to a wastewater system. Because of their non-VOC or low-VOC properties, **SAFE CARE®** products are safer to use for various storage tanks and vessels that require service personnel entry.

DiSolv™ is a new proprietary mixture of biobased ingredients specifically formulated for breaking down heavy organics in crude oil including paraffin wax and asphaltenes. Without the use of heat, **DiSolv™** will immediately soften and dissolve paraffin wax, asphaltenes and bitumen so that crude oil will flow more smoothly and equipment will not breakdown due to friction caused by wax build-up.



GEMTEK® Products is a manufacturer of non-toxic, environmentally-safe cleaners, degreasers, solvents, lubricants and specialty products that are derived from renewable, biobased resources for a broad range of industrial applications. **GEMTEK®** Products meet or exceed the “green” attributes of the USDA BioPreferred Program, and the USEPA Design for the Environment (DfE). Several **SAFE CARE®** products are pre-registered with REACH for distribution in the European Union.

Main Products used in this Oil & Gas Filed:

- **SC-1000™** Aqueous Cleaner Concentrate – Non-ionic surfactant
- **SC-SuperSolv™** Safety Solvent- Non-evaporative, water miscible
- **SC-EZ-Solv** Safety Solvent – Non-evaporative, not water miscible
- **GP-DiSolv™** Safety Solvent – Non-evaporative, not water miscible

Kamco Industries LLC is an international distributor of **GEMTEK.**

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