

Environmental Solutions for Remediation of Hydrocarbons (oils)

E-SAFE© FREQUENTLY ASKED QUESTIONS

1. What is E-SAFE©?

E-SAFE© is a chemical blend that is formulated to remove hydrocarbon compounds from soil and hard surfaces.

2. When can E-SAFE© be used?

E-SAFE© may be used any time the temperature does not prevent application of the product. If E-SAFE© is applied to frozen surfaces it will not be effective until the surface is warm enough to thaw the product. When E-SAFE© thaws it will work normally.

During high temperature or high winds it may be necessary to apply E-SAFE© in a large volume of water in order to avoid excessive evaporation.

3. How does E-SAFE© work?

E-SAFE© decomposes hydrocarbon compounds by altering the chemical makeup of the contaminating material.

4. Is E-SAFE© approved by US-EPA?

US-EPA does not approve products of this type, but rather lists products for usage. See US-EPA NCP National Products Schedule. E-SAFE© is Listed as US-EPA NCP NPS Technical Product Bulletin SW-33. E-SAFE© is also licensed by the State of California as a Shoreline Cleaning Agent. This is the highest rated listing for an environmental remediation product.

5. Does E-SAFE© meet state certification requirements?

E-SAFE© meets or exceeds requirements for Licensing in California which has the most tightly controlled environmental product standards in the world.

6. Is E-SAFE© flammable?

E-SAFE© is not flammable until greater than 170 F in a closed cup condition.

Environmental Solutions for Remediation of Hydrocarbons (oils)

7. What happens to fuel or oil that is treated with E-SAFE©?

E-SAFE© breaks them down into the respective compounds from which they were formed or into other more simple compounds.

8. Will fuel burn after it has been treated with E-SAFE©?

When fuel is treated with an adequate volume of E-SAFE©, the flashpoint is raised dramatically thereby making ignition to be difficult if not impossible.

9. Is the fuel hazardous after treatment with E-SAFE©?

The treatment process with E-SAFE© includes the addition of water to the site. The water aids in lifting the “spent” fuel from the soil or hard surface. The diluting effect of the water assists naturally occurring microbes, in the soil and water, to digest the remaining post treatment, non-harmful compounds. This microbial action renders the treated residue non-hazardous.

10. What remains after treatment with E-SAFE©?

The remaining compounds or residues are simple sugars, elemental carbon, trace minerals and water.

11. Are there any harmful vapors that occur during the treatment process?

No, not even carbon-dioxide is produced by the treatment process.

12. Is E-SAFE© effective on diesel or just on gasoline?

E-SAFE© is equally effective on gasoline, diesel, kerosene, Av-gas, ethanol, methanol or bio-fuel spills.

13. Will compounds other than fuel and oil be remediated by E-SAFE©?

Yes, E-SAFE© is effective in the remediation of most hydrocarbon based compounds: Waxes, most acrylates, softer polymers, lacquers, resins, paints and industrial coatings such as Cosmoline. Heated E-SAFE© may need to be applied to some compounds in order to achieve complete removal.

Environmental Solutions for Remediation of Hydrocarbons (oils)

14. Are fuel vapors present after treatment with E-SAFE®?

No combustible vapors remain once the appropriate volume of E-SAFE® is added to the spill.

15. Does E-SAFE® neutralize chlorinated hydrocarbons?

Customers have reported that E-SAFE® does in fact “break-down” some chlorinated hydrocarbons. PLUTUS has no lab tests to prove or disprove these claims, and therefore makes no claim as to the effectiveness in this area of usage.

16. What happens when E-SAFE® is added to vacant fuel tanks that contain residual amounts of fuel?

E-SAFE® will de-vapor the tank when introduced as a low pressure fog. Combustible vapors are eliminated and fresh air flow may be allowed in tank.

17. How is E-SAFE® used on fuel or oil spills on soil?

E-SAFE® should be sprayed full strength on the contaminated area as soon as all recoverable hydrocarbons have been removed by sorbents or vacuum. The initial dosage for fuel is one (1) gallon E-SAFE® per one-hundred (100) square feet or one (1) Liter per four (4) square meters of surface area. Heavy soils, packed gravel or heavy oil spills may require heavier or repeated applications. As soon as the E-SAFE® is absorbed by the soil the area should be saturated with water from any source available, be it fresh or sea water.

18. How does E-SAFE® clean up the spill?

E-SAFE® is solubilized into the water which carries it to the oil or fuel that has penetrated the soil. E-SAFE® is heavier than the fuel or oil and will follow the hydrocarbon path through the soil or fissures in any rock layer that may be contaminated.

Environmental Solutions for Remediation of Hydrocarbons (oils)

19. Why add water after application of E-SAFE©?

Water acts as a carrier for the E-SAFE© and as water is heavier than fuel or oil, the water will help lift the contaminant to the surface. This lifting action allows excess oil to be wiped, boomed or vacuumed away.

20. Why not let E-SAFE© clean the spill?

If all practical volume of contaminants are removed by sorbents or mechanical means then less E-SAFE© is required and remediation time is shortened.

21. Why use E-SAFE© instead of “Bugs”?

“Bugs” are genetically engineered microbes that are designed to eat and digest hydrocarbons. These microbes are affected by pH and temperature conditions, these conditional limits do not apply to E-SAFE©. At high or low extremes of pH or temperature the “bugs” usually become dormant or they die. If “bugs” do not eat they are not effective. E-SAFE© works in both high and low pH situations and in temperature situation that does not cause E-SAFE© to either freeze or evaporate.

22. Will E-SAFE© disperse hydrocarbons into the aquifer or ground water system?

No, E-SAFE© is not a dispersant. The hydrocarbons are broken into simple compounds that naturally occurring microbes in the soil and ground water will consume. There are no harmful residuals that remain in the soil or water after the treatment cycle is completed.

23. What happens if E-SAFE© is accidentally spilled on the ground?

E-SAFE© is infinitely soluble in water. Spray the spill with water until the ground is saturated. E-SAFE© is biodegradable and no harm will come to the environment as a result of the spill.

Environmental Solutions for Remediation of Hydrocarbons (oils)

24. How do you use E-SAFE© on hard surfaces?

E-SAFE© is normally applied to hard surfaces with a spray application. In those occurrences when an extremely heavy or thick layer of contamination is present, such as a tank rupture, it is advisable to mop or vacuum away as much pollutant as possible. It may be desirable to pour a thin coating of E-SAFE© directly on the spill area.

24. What is the initial application of E-SAFE© on hard surfaces?

The initial application of E-SAFE© on hard surfaces is one (1) quart per hundred (100) square feet or one (1) liter per square meter. Heavy or old, hardened layers of pollution may require heavier (See No. 24 above) or repeated applications of E-SAFE©

25. is E-SAFE© compatible with refinery and fuel depot operations?

Yes, E-SAFE© has many uses in refinery and depot operations. In the event of an accidental discharge of any liquid finished product or feed stock, E-SAFE© applied to the spill will greatly reduce the flashpoint hazard.

Addition of E-SAFE© to the routine custodial effort will reduce the frequency of slip and fall incidents.

E-SAFE© will keep surfaces of pipes, tanks, equipment, railings and tools cleaner and safer.

Regular use of E-SAFE© reduce vapors from accumulated process leaks and drips thereby minimizing the inherent flashpoint and "bad air" hazard.

E-SAFE© does not cause static electricity charge buildup in fuel or oil tanks.

E-SAFE© will shorten de-vapor time in storage battery cleaning and maintenance operations.

Regular use of E-SAFE© should reduce OSHA safety and EPA Code violations.

Environmental Solutions for Remediation of Hydrocarbons (oils)

26. Can E-SAFE© be used in off-shore drilling operations?

E-SAFE© is US-EPA Listed as a surface washing agent. E-SAFE© may be used on land or off-shore platforms or vessels subject to company policy and on-site coordinator's approval.

E-SAFE© will remove hydrocarbons, as well as salt water film, from tools and equipment. NOTE: See ***Is E-SAFE© compatible for refining operations*** as listed above.

In the event of a major accidental spill of E-SAFE©, no harm will come to the environment. E-SAFE© is infinitely soluble in sea water and has an extremely low toxicity to aquatic life, mammals and waterfowl.

27. Is E-SAFE© appropriate for transportation company terminals?

E-SAFE© is the perfect spill control product for transport terminals because E-SAFE© will remediate so many different spill conditions.

E-SAFE© safely removes fuels, oil, battery acid, most paint and lacquers, solvents, vegetable and animal fats and oils, alcohol, blood stains, exhaust carbon residues, rubber "curb" marks, fertilizers, polymers, mold and mildew, bird and insect droppings and residues from floors, ramps and walls.

28. What is the E-SAFE© application for airports and runways?

E-SAFE© is used for cleaning fueling locations, fuel truck and equipment storage areas, tarmac and as an aide in fire control. E-SAFE© lifts oil drips from the surface for easy removal and should be sprayed on any fuel spills in order to retard formation of flammable vapors.

E-SAFE© may help in the removal of rubber build-up on runway surfaces. When the E-SAFE© treatment area is rinsed with clean water no slick or slippery residue remains.

E-SAFE© may be used in any weather condition and has a freeze point several degrees lower than water.

Environmental Solutions for Remediation of Hydrocarbons (oils)

29. Can E-SAFE© be used for floor maintenance in industrial facilities?

E-SAFE© is effective in reducing slip and fall conditions in areas where oil from robotics or fabrication leaks, drips or spills occur on floors, stairs or ramps.

When E-SAFE© is added to hot water wash, oil is lifted from surface and may be rinsed away to the floor drain collection system.

30. What happens if I put E-SAFE© in a floor scrubbing machine?

Floor scrubbing machines work well with E-SAFE©. The machines remain clean internally and deliver excellent results. The floor surface rinses clean with no residue to clog or contaminate drains. Fabrication facilities and automobile and equipment showrooms and storage areas are easily maintained using this treatment.

E-SAFE© is applied in E-SAFE©/water ratios of 1:5 to 1:20 depending upon the level of cleaning power need for the particular situation.

31. Is E-SAFE© appropriate for routine custodial usage?

E-SAFE© may be used for floor stripping, high foot traffic area cleaning and on most surfaces painted with industrial or commercial grade paint. Do not use on surfaces painted with flat latex paint.

32. Will E-SAFE© harm oil/water separators?

No. E-SAFE© helps maintain separator function at high efficiency by systematically cleaning collector plates and baffles, collection conduits and inflow pipes, valves and fittings.

33. What happens if E-SAFE© is flushed into the sanitary sewer system?

E-SAFE© is recommended by some municipal utility systems as an industrial pre-treatment for discharge streams that may include sugars or inadvertent hydrocarbons. BOD may be increased but the increased microbial activity in the effluent stream will offset the BOD rise.

Environmental Solutions for Remediation of Hydrocarbons (oils)

34. Is E-SAFE© effective in removing heavy mold or mildew growth?

E-SAFE© kills most mold and mildew on contact and is useful in high humidity situations where normal cleaning products fail.

35. Can E-SAFE© be used on equipment?

E-SAFE© is safe for use on decals, dials and gauges, industrial quality tools and equipment, hot or cold engine components, fire extinguishers, stainless, cast iron, soft and rolled steel, copper, brass and bronze, ceramics, glass, hard plastic, pvc, fiberglass, laminates, vinyl and virtually all industrial surface coatings.

36. Is personal protection equipment required when using or handling E-SAFE©?

Although not absolutely necessary, good safety practice dictates that PPE should be used when any chemical spray or fog is applied. Certain skin types or health conditions of the user may be subject or sensitive to the product.

37. What should I do if E-SAFE© is ingested, gets in my eyes or on my skin?

If ingested drink several glasses of water. Do not induce vomiting. Upon eye contact, flush with clean water. E-SAFE© may be used as a hand cleaner, although certain skin types may redden if skin is immersed in or is in contact with product for extended periods of time. Wash skin in clean water to remove product.

38. What happens if E-SAFE© gets on my clothing or shoes?

E-SAFE© is actually used as a pre-treatment de-spotter in some commercial laundry operations. Clothing should be run through the normal wash cycle without adding detergent and shoes should be rinsed with clean cold water.

39. What happens if E-SAFE© becomes discolored or cloudy?

The green color will sometimes lighten, become cloudy or change to blue in certain weather conditions. This is due to dye fading from exposure to bright sunlight or extreme barometric changes. These are physical changes and will not affect the performance of E-SAFE©.

Environmental Solutions for Remediation of Hydrocarbons (oils)

40. What is the shelf life of E-SAFE©?

E-SAFE© has a shelf life of 10+ years when stored in an unopened container. The container should be stored away from direct sunlight in temperature range of 45 F to 165 F.

41. Can E-SAFE© be used as an all-purpose cleaner?

E-SAFE© is not recommended as an all-purpose cleaner because it is highly concentrated and many non-commercial or industrial surfaces may not stand up to the cleaning effectiveness of the product. An additional consideration is that many fabrics are not color-fast

42. What fabrics are safe for cleaning with E-SAFE©?

E-SAFE© may be used on any commercial canvas, drapery, upholstery, or carpet fabric, as well as leather, most synthetics, including nylon, naugahyde, microfibers and polyesters Always test for colorfastness before application of E-SAFE© to large exposed areas of the fabric.

43. What happens when E-SAFE© is used on acid or caustic spills?

E-SAFE© will help neutralize most acids but is not recommended for acid or for caustic spills. Always perform a lab test before using E-SAFE© in any acid or caustic spill operation.

44. Where should E-SAFE© not be used?

Do not use E-SAFE© on polished aluminum, soft aluminum alloys, neoprene, Styrofoam, natural rubber, automobile and aircraft clear-coat surfaces, waxed surfaces not intended to be stripped, latex paint, unpainted plaster and drywall, non-colorfast fabrics.

45. What are other similar products on the market?

There are no other products on the market that are similar to E-SAFE©. There are some products on the market that are used in similar cleanup operations. Both Corexit, a series of chemical compounds, and Microblaze, a microbial agent, are used for hydrocarbon remediation in the same situations as E-SAFE©, but these products do not “handle the many other problems that E-SAFE© can solve.

Environmental Solutions for Remediation of Hydrocarbons (oils)

46. What are the cost advantages of using E-SAFE© as opposed to other similar products on the market?

According to customer input and website information on Corexit and Micro-Blaze, each of these products retail cost is comparable to E-SAFE©. Corexit must be mixed very precisely or it must be discarded as hazardous waste. Microblaze is temperature and PH sensitive. E-SAFE© is infinitely soluble in water therefore the mix ratio is not critical and E-SAFE© is applicable in a wide temperature and PH range.

The following table is taken from the Micro-Blaze website.

Method of Treatment	Year 1	Year 2	Year 3
Incineration	\$530.00 ^a	none	none
Solidification	315.00	none	none
Landfill	670.00	none	none
Thermal Desorption	200.00	none	none
Bioremediation	125.00	27.00 ^b	20.00 ^b

a: Costs are per cubic yard, 1993 dollars. Actual costs impacted by time and competition. [Micro-Blaze usage costs are usually substantially lower.]

b: If project warrants year two and three costs, these are average costs shown per cubic yard. Original source: *Bioremediation Report*, King Publishing Group, Washington, D.C., 1993.

The cost range of treating hydrocarbon contaminated soil with the products is approximately \$100-120 per cubic yard, and may need several “windrow” treatments over a span of three (3) years.

E-SAFE© routinely treats a cubic yard of contaminated soil, in-situ, at an average cost of \$65. Repeat treatments are rarely required. This value is derived from treating 100 sq. ft. of surface area, to a depth of 6 inches, with one gallon of E-SAFE©. This yields 1.85 cu. yds. Treated area for a value of \$65 per cu. yd. in today’s dollars. When compared to the 1993 valuation above E-SAFE© exhibits at least a triple savings advantage.

Environmental Solutions for Remediation of Hydrocarbons (oils)

47. Is it safe to apply E-SAFE© to spills on shorelines?

Yes. E-SAFE© is licensed as a Shoreline Cleaning Agent by the State of California. This means that E-SAFE© will not harm aquatic life or mammals. E-SAFE© passes the Toxicity Test for Red Abalone Larva when applied as a 10% concentration in water.

48. How is E-SAFE© used in shoreline cleaning operations?

The recommended procedure is to use water from the shoreline site as this is most compatible with the resident mollusks, crustaceans, etc. Use absorbent pads or booms to remove standing hydrocarbons whenever possible before application of E-SAFE©. E-SAFE© should be mixed to the proper dilution as directed by the environmental officer in charge of the cleanup operation. The diluted mixture is sprayed on the contaminated spill area. Use a garden type sprayer for small treatment areas. A larger spray system may be required for wide area coverage. Vertical surfaces such as a wall or pilings may need to be brushed or swept following the spray application. Always consult with the governing environmental authorities when considering E-SAFE© for a shoreline remediation operation.

If you have additional questions regarding E-SAFE© please e-mail them to info@accendolc.com