



Various chemical elements that De-Oil-It can de-toxify to negligent to non-detect readings

Hydrocarbons with carbon chains ranging from C-5 to C-40

- Benzene, xylene, glycols and toluene
- Trichloroethylene (TCE)
- Polycyclic Aromatic Hydrocarbons (PAH)
- Polychlorinated Biphenyls (PCB)
- Fuel oils Fossil fuels - gasoline, diesel, aviation, racing
- PFAS (“forever chemicals”) – field test kit now available
- Fluids: hydraulic, transmission (ATF), brake and power steering
- Solvents, Paints, Thinners, Inks, Resins, Lubricants,
- Pesticides residual chemicals (“excess”) in forestry, agriculture, industrial, and residential applications
- Algae (Red Tide, Blue/Green Freshwater) and their associated toxins
- Acids (Hydrochloric HCL, Sulfuric, Nitric, Carbonic, Formic, Acetic, Muriatic, Citric, Acetylsalicylic, etc.)
- Industrial machinery requiring pre-treatment to augment cleaning through lowering surface tension of all above forms of hydrocarbons and more
- Molds

Trichloroethylene (TCE) is a volatile, colorless liquid organic chemical. TCE does not occur naturally and is created by chemical synthesis. It is used primarily to make refrigerants and other hydrofluorocarbons and as a degreasing solvent for metal equipment. TCE is carcinogenic

TCE is used as a solvent for

- degreasing
- a spot cleaner in dry cleaning
- consumer **products** (cleaners and solvent degreasers, adhesives, lubricants, hoof polishes, mirror edge sealants, and pepper spray).

Polycyclic aromatic hydrocarbons (PAH) are a group of more than 100 chemicals that are also called polynuclear aromatic hydrocarbons. PAHs are released from burning coal, oil, gasoline, trash, tobacco, and wood.

PAHs are found in industries that produce or use coal tar, coke, or bitumen (asphalt). They are emitted by coal gasification plants, smokehouses, municipal incinerators, and some aluminum production facilities



Polychlorinated biphenyls (PCB) are a group of manmade chemicals. They are oily liquids or solids, clear to yellow in color, with no smell or taste. PCBs are very stable mixtures that are resistant to extreme temperature and pressure. PCBs were used widely in electrical equipment like capacitors and transformers.

Products that may contain PCBs include:

- Transformers and capacitors.
- Electrical equipment including voltage regulators, switches, re-closers, bushings, and electromagnets.
- Oil used in motors and hydraulic systems.
- Old electrical devices or appliances containing PCB capacitors.
- Fluorescent light ballasts.
- Cable insulation.

Benzene, Xylene, and Toluene

Natural Processes That Produce Benzene

- Volcanoes
- Forest fires

Products Containing Benzene

- Paint, lacquer, and varnish removers
- Industrial solvents
- Gasoline and other fuels
- Glues
- Paints
- Furniture wax
- Detergents
- Thinners
- Inks
- Adhesives and coatings
- Rubbers
- Industrial cleaning and degreasing formulations

Activities/Uses Involving Benzene

- Emissions motor vehicle exhaust
- Burning coal and oil
- Painting and lithography
- Dry cleaning
- Making chemicals used to make:



- Plastics
- Resins
- Nylon and synthetic fibers
- Making some types of:
 - Lubricants
 - Rubbers
 - Dyes
 - Detergents
 - Pharmaceutical drugs
 - Agricultural chemicals (pesticides)

Industries Using Benzene

- Petrochemical manufacturing
- Petroleum refining
- Coke and coal chemical manufacturing
- Rubber tire manufacturing
- Gasoline storage, shipment, and retail operations
- Plastics and rubber manufacturing
- Shoe manufacturing
- Aviation fuels

Occupations/People Who May Be Exposed To Benzene

- Steel workers
- Printers
- Rubber workers
- Shoe makers
- Laboratory technicians
- Gasoline service station employees
- Aviation, Industrial manufacturing

Places Where Benzene May Be Found

- Air around waste sites and gas service stations
- Contaminated well water, as a result of benzene leaks from underground storage tanks or hazardous waste sites containing benzene
- Ends of airline runways

Xylene is primarily used as a solvent (a liquid that can dissolve other substances), particularly in the printing, rubber and leather industries. Xylene is also used as:

- Cleaning Agent
- Paint Thinner and Remover
- Varnish
- Airplane Fuel



- Gasoline
- Shellac
- Rust Preventatives
- Pesticides
- Lacquers

Toluene is primarily used in various cosmetic products, fuels, and other uses or found in products / elements such as:

- Nail polish
- Hair dyes
- Crude oil
- Pain thinners, stain removers
- Adhesives, glues
- Rubber
- Gasoline especially racing fuel

Pesticides (herbicides, fungicides) is used industrially such as agriculture, recreational such as children's playground areas, and residential such as mosquito control. In many cases detoxifying an area treated with pesticides is ideal when chemicals achieved their goal, and now the area needs to be restored in an environmentally safe condition (such as treating a children's playground or soccer field, and then decontaminating the pesticide chemicals before a tournament to reduce adverse allergy outbreaks).

- Insect chemical residual ("excess") control including manufacturing and storage cleaning, mixing and transfer application equipment
- Agriculture pesticide / herbicide / fungicide treatment chemicals found in water runoff from irrigation or rain
- Irrigation return water
- Tree farms and orchards (organophosphates, pyrethroids, carbamates)
- Mosquito control (prevents egg maturation phase or inhibits laying eggs)
- Sewer overflows (CSOs)
- Wastewater treatment plant discharges
- Herbicide residual chemical control (weed control, etc.)
 - Metribuzin, Dacthal, Sethoxydim
 - Carfentrazone, Pendimethalin
 - Halosulfuran-methyl, Bensulide
 - Trifluralin, Napropamide

Algae nutrient control is a serious mitigation policy many jurisdictions close to water affect by mainly runoff into drains that lead eventually or directly into waters used for recreation, hospitality, retention, and municipality water supply



- Street and parking lot drainage particularly those locations that control excess water runoff through retention ponds, municipality water inlets, lakes, oceans, etc.; these sources introduce nutrients responsible for the proliferation of algae
- Agriculture fertilizer solubilized in water run-off from irrigation or rain; DOI eradicates phosphates, nitrates, and nitrites
- Effective for Red Tide algae and freshwater algae (Blue-Green); proven through Florida Wildlife and Conservation Commission (FWCC) grants managed through partnership Greenworld Environmental Alliance research with Mote Marine and Aquarium Red Tide Mitigation and Technology Facility in Sarasota, Florida (De-Oil-It is regarded as the number one solution to algae control and the nutrients (phosphate, nitrates) that fuel algae growth
- De-Oil-It has been proven to reduce Brevetoxin (from Red Tide algae) and Cyanotoxin (from Blue-Green, "fresh water" algae, specifically Microcystin has been tested successful to detoxify to negligent readings)

Acid neutralization for accident spill control, industrial acid required applications, and manufacturing residual ("excess") build-up. De-Oil-It is effective in low acid pH ranges (0-6) and also can neutralize extreme caustic acids (negative pH). De-Oil-It Industrial Strength Concentrate ("ISC") can be titrated until desired pH balance is met, or added to areas before acid is released

- Hydrochloric Acid (HCL) all forms of molarity
- Muriatic Acid (bases as HCL but with added elements to increase severe applications such as rust control; typically fortified with iron to be more caustic than HCL)
- Sulfuric, Nitric, Carbonic, Formic, Acetic, Citric, Acetylsalicylic, etc.

Industrial machinery cleaning of hydrocarbons (particularly grease, caked oils and hydraulic fluids, etc.) as either a pre-cleaning soaking to lower surface tension and / or to begin the De-Oil-It degrading process responsible to de-toxify

- Pre-cleaning (such as pressure washing) soaking treatment to lower the surface tension of hydrocarbon based contamination build up of machinery (or items like truck as fracking or well mobile rigs)
- Industrial machinery parts shipped with light oil coatings to protect against corrosion, rust, etc.
- Also use De-Oil-It to treat the grounds, platforms, and drains to de-toxify the water runoff from cleaning
- De-Oil-It is highly regarded as the most effective method to clean pipelines and after the process to clean the "pig"



PFAS (Per- and PolyFluoroAlkyl Substances) are man-made chemicals that are monikered as “FOREVER CHEMICALS” due to difficulty breaking down; De-Oil-It is known to reduce PFAS chemicals and help acquire a test kit for PFAS

- 1,4 Dioxane which is considered a kind of forever chemical because of the length of time this chemical can persist in the environment, De-Oil-It reduces 1,4 Dioxane to low levels and with added treatments remove

Perfluorohexanoic acid - Na salt (PFHxA)

Perfluoroheptanoic acid (PFHpA)

Perfluorooctanoic acid (PFOA)

Perfluorononanoic acid (PFNA)

Perfluorodecanoic acid - Na salt (PFDA)

Perfluorododecanoic acid - Na salt (PFDoA)

Perfluorotridecanoic acid (PFTrA)

Perfluorotetradecanoic acid (PFTeA)

Perfluorobutanesulfonate - K salt (PFBS)

Perfluorohexanesulfonate - K salt, mixed isomers (PFHxS)

Perfluorooctanesulfonate, mixed isomers (PFOS)

N-methylperfluorooctanesulfonamidoacetic acid - mixed isomers (N-MeFOSAA)

N-ethylperfluorooctanesulfonamidoacetic acid - mixed isomers (N-EtFOSAA)

Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)

Dodecafluoro-3H-4,8-dioxanonanoic acid (DONA)

9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid - K salt (9Cl-PF3ONS)

11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid - K salt (11Cl-PF3OUDS)

Perfluoroundecanoic acid - Na salt (PFUnA)

For a complete list of tested PFAS chemicals via EPA 1633 protocol visit <https://hydrocarbon-degrader.deoilit.com/wp-content/uploads/2024/06/De-Oil-It-PFAS-elimination-capabilities-v5f.pdf>



Molds – One common method to treat molds includes BLEACH such as Clorox and other brands; the key ingredient is chlorine via calcium hypochlorite, a very abrasive chemical attributed to high pH of 11. Chlorine is known to be toxic in high concentrations to fish, aquatic organisms and amphibians. Calcium hypochlorite also forms salts when in contact with other inorganic compounds during the cleaning process and is harmful to aquatic vegetation and can change the plant community structure; salts can also kill plants and trees. By contrast De-Oil-It has a safer pH but is still in a range that kills molds while releasing the surface tension of molds on surfaces.