

An explanation of the most effective bioremediation for mould and chemical warfare agents, developed & used by the US military. (stronger formulation)

I have been engaged in worldwide Bioremediation for over 30 years. I have been a UK Emergency Planning CBRN group member and one of only 35 contracted expert consultants in the European SHEER CBRN emergency response based in Basel. This product and its delivery system provide unique risk reduction and decontamination solutions. The following statement and information have been taken directly from information provided by the manufacturer. I confirm no alterations or additions unless highlighted as such. Jeff Charlton

Building Forensics uses this product to reduce the risk of bio- and chemical contamination, utilising an atomised misting protocol for mould and bioremediation. However, as displayed within this document, no guarantees on efficacy are provided apart from those provided by manufacturers' in vitro testing results.

It should be recognised that killing mould alone may not be enough, and consideration must be given to causation, hidden reservoirs and resultant debris of hyphal fragments which may be inflammagens.

The issue of just killing the mould should be carefully considered, where the inflammatory response suffered by CIRS and Mould clients may require more than simply killing the mould.

This product effectively penetrates, oxidises, or chemically burns mould and hyphal fragments, but cleaning may be required to remove hyphal fragment residue. Building Forensics can provide medically sound remediation protocols, where requested. The product itself oxidises and returns to carbon dioxide and water.

Manufacturers statement

When the U.S Government and DARPA assembled a team of scientists with a specific mission to develop a nontoxic response to hazardous chemical and biological contamination, they set the highest benchmark for mitigating biological threats. The solution had to be safe for humans, animals, and plants, broad-spectrum, and deliver a 7-log kill (99.99999%) on Anthrax spores within 15 minutes. Several years later, they produced the most powerful, nontoxic disinfection & decontamination formula ever created.

Originally licensed from Sandia National Labs for military and commercial use (License #19-11424), the lab continues developing and optimising this innovative technology for various applications.

With a 7-log kill rate (99.99999), this product not only delivers the highest biocidal effectiveness in the industry, but it also provides the most extensive spectrum of efficacy, eliminating biological threats and neutralising chemical hazards at the same time.

- U.S. Military Approved for The Decontamination Of Chemical and Biological Warfare Agents
- Highest Kill Rate In the Industry: 99.99999%
- Safe On All Industrial Surfaces, Equipment & Personal Electronic Devices
- Creates A Lasting Fungistatic Barrier
- **The product has also approval for decontamination of Monkey Pox and COVID 19**

Military-Grade Decontamination

In collaboration with the USA Armed Forces, the lab has advanced the original Sandia National Labs DF200 technology and developed the 3rd Gen. version of the product. This nontoxic, biodegradable, aqueous formulation enables rapid mitigation and decontaminating [chemical and biological agents and hazardous materials](#).

Professional-Grade Decontamination

Our unique formula, developed to neutralise chemical and biological warfare agents and toxic industrial chemicals, is now available for disinfection and decontamination in a wide variety of applications. Treated areas and surfaces are not only cleaner but also less toxic than when [they were brand new](#).

Direct product acceptance from the Environmental Protection Agency (EPA)

EPA (US Environmental Protection Agency) registration #93672:

Antibacterial, Cleaner, Mildewstat, Decontaminant, Disinfectant, Deodorizer, Fungicide, Algaecide, and virucide.

Including:

- **Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2**
- Influenza Type A (including H1N1), Influenza Type B and Norovirus (Feline Calicivirus Surrogate)
- Staphylococcus aureus (including MRSA Staphylococcus), Salmonella enterica, Pseudomonas aeruginosa and Listeria monocytogenes and meets the requirements for hospital use
- Trichophyton mentagrophytes (ATCC 9533), Aspergillus Niger (ATCC 6275 and 1015) and Penicillium Variable (ATCC 52262)

Information directly from the manufacturer

Destroys bacteria and viruses,

neutralise toxic chemicals and eradicate odours and allergens on a molecular level.

Within minutes, bacteria, viruses, and chemical toxins are broken into nontoxic, biodegradable components, neutralising odours, allergens, and even harmful residues left by other cleaners, sanitisers, and disinfectants.

Our products are effective on porous and nonporous surfaces and safe for all materials, including screens and electronic devices. Afterwards, a fungistatic barrier protects from recolonization of spores, bacteria, and viruses.

Powerful chemical decontamination.

Effectively neutralizes formaldehyde, odours, allergens, and irritants that can cause asthma attacks and allergic reactions by breaking them down into nontoxic, biodegradable components.

Biological and Chemical agents' neutralisation

Introduction.

A non-toxic, low-corrosive, biodegradable aqueous formula with enhanced physical stability for the rapid mitigation and decontamination of chemical, biological agents, and toxic hazardous materials. The basic chemistry of the formula is a combination of two active ingredients: quaternary amines and hydrogen peroxide. The formula also contains several stabilising compounds, which help to extend the shelf life of the formula and control the chemical reaction, so that the decontamination occurs in a safe manner. Additional tests indicate that the formulation is effective as a decontaminant on several varieties of hazardous bacteria, viruses and materials such as hydrocarbon-based compounds as well.

The formulation allows decontamination of areas populated with both people and sensitive equipment; it works on all currently anticipated material surfaces and can be incorporated into a wide variety of carriers (foam, gel, fog, aerosol) that satisfy a wide variety of operational objectives.

The formula works on the following:

- Chemical Warfare Agents (CWA)
- Biological Warfare Agents (BWA)
- Toxic Industrial Chemicals (TIC)
- Non-conventional Toxic Agents (NTA)
- Radiological and Nuclear particles

Neutralization is defined as the mitigation, de-toxification, decontamination, or otherwise destruction of toxants, to the extent that the toxants no longer cause acute adverse effects to humans or animals.

CWAs and TICs

Decontamination of chemical warfare agents (CWAs) and other toxicants such as nonconventional toxic agents (NTAs) or toxic industrial chemicals (TICs) can lead to troublesome stable and still highly toxic products. Water content, reaction time, temperature, order of addition, matrix effects, and/or pH have been shown to be critical parameters in controlling reaction paths in decontamination chemistry towards forming nontoxic products and avoiding forming toxic residuals.

Decontamination means the degradation of chemical warfare agents (CWAs) and other toxicants to levels that are significantly lower than the original concentration.

Biological and Chemical agents' neutralisation

The formula addresses the need to neutralise the adverse effects of toxic industrial chemicals (TICS). A TIC is defined as any chemical compound, constituent, substance, species, or agent that, through its chemical action on life processes, can, if left untreated, cause death, temporary incapacitation, acute and chronic health effects, or permanent harm to humans or animals. This includes all such chemical agents, regardless of their origin or of their method of production; and regardless of whether they are produced in facilities, in munitions, or elsewhere.

The majority of the TICs can be neutralized by four reaction mechanisms:

1) **Chemical Oxidation**. Chemical oxidation is one half of a redox reaction, resulting in electron loss. One of the reactants in the reaction becomes oxidised or loses electrons, while the other reactant becomes reduced, or gains electrons. In Chemical oxidation, oxidising compounds (compounds that give electrons away to other compounds in a reaction) are used to change the contaminants into harmless compounds.

Chemical oxidation can remediate certain organic substances, such as chlorinated solvents (trichloroethene and tetrachloroethene) and gasoline-related compounds (benzene, toluene, ethylbenzene, MTBE, and xylenes), and make some other contaminants less toxic.

2) **Nucleophilic attack** is a fundamental class of reactions in which an electron nucleophile selectively bonds with or attacks the positive or partially positive charge of an atom or a group of atoms to replace a so-called leaving group.

3) **Chemical reduction** is a half-reaction in which a chemical species decreases its oxidation number, usually by gaining electrons. Reduction is the opposite of oxidation. A reduction reaction always comes together with an oxidation reaction. Oxidation and reduction together are called **redox**.

4) **Buffering reaction**. The formula can be considered as a buffer solution because of its aqueous solution, consisting of a mixture of a weak acid and its conjugate base. Because the acid and the base components do not undergo any reactions that significantly alter their concentration, both remain present in the solution. In addition, weak acids and their conjugate bases only rarely react with water. However, they are likely to react with any added strong base or strong acid. Its pH slightly changes when a small or moderate amount of strong acid or base is added. Thus, it is used to prevent changes in the pH of a solution. Buffer solutions are used as a means of keeping pH at a nearly constant value in a wide variety of chemical applications

In addition to these four reaction mechanisms, the formulation exploits the principles of **cationic micelle catalysis** and the solubilization power of cationic hydrotropes to dissolve the sparingly soluble toxicants. This principle is used for TICS, or Chemicals that are insoluble in water and may be detoxified by nucleophilic attack.

Biological and Chemical agents neutralisation

Selected constituents in the formulation provide this mechanism to solubilize sparingly soluble agents and enhance vulnerability to a nucleophilic attack. This is accomplished by recognising that certain nucleophilic agents are negatively charged.

The insoluble chemical agent (or TIC) is dissolved within the micelle, comprised of an aggregate of surfactant molecules with hydrophobic tails forming the interior core of the micelle, and hydrophilic heads concentrated at the surface of the micelle. These positively charged hydrophilic heads attract the negatively charged nucleophiles. In this sense, the cationic surfactant acts as a catalyst to speed up the reaction between the toxant and the reactive compound.

This principle can also be applied to insoluble chemical agents that are subject to an oxidative attack by a negatively charged oxidizer and to insoluble chemical agents that are subject to a reductive attack by negatively charged reductants.

For the oxidative attack of a negatively charged water-soluble chemical agent or TIC, the agent is dissolved in the water phase contained in the formulation. Its negative charge attracts it to the cationic micellar environment, where it will react with the negatively charged oxidant. This mechanism is termed "inverse phase-transfer catalysis."

A set of decontamination formulations was developed for each of the reaction mechanisms described in the formula. A review of the fundamental chemistry of the TICs reveals that the majority of them can be neutralized by the formula reaction mechanisms. For example, most of the 21 TICs on the DOJ (the USA Department of Justice) high threat level list can be neutralised by the formula reaction mechanisms.

In general, there are only two classes of TICs for which the mechanism of decontamination could generate unexpected reactions:

- 5) Strong acids and bases, which are best neutralized by non-aqueous technologies to avoid violent reactions which may occur when water is added to strong acids or bases;
- 6) TICS that contain toxic metals, which by definition, cannot be chemically neutralised.

The reactions involved in decontaminating **chemical warfare agents**, particularly nerve agents (such as G agents or V agents) and blistering agents (such as mustard), can be divided into substitution and oxidation reactions. Chemical agents such as sarin, soman, and tabun (G-agents) are all examples of phosphorus-containing compounds that, when altered chemically in a substitution reaction like hydrolysis, can lose their toxicity. Mustard, an example of H-agents, and VX, an example of V-agents, can also be altered chemically and rendered harmless through an oxidation reaction. The formula provides both solubilising compounds: oxidising and nucleophilic.

Biological and Chemical Weapons -agents neutralisation

BWA

The formula is a bio-decontamination formulation that neutralises biological pathogens for disinfection and sterilisation applications. For neutralisation of biological toxins, the synergistic effect between the cationic surfactants and the hydrogen peroxide is responsible for the high rate of bio-agents kill: the solubilising compounds (cationic surfactant) serve to solubilise and soften the biological agent's outer coat, thereby exposing the biological agent's DNA and vital parts to reactive compounds. After the solubilising compound enhances exposure of the toxant to the reactive compound, the reactive compound reacts with the toxant, either by oxidation or hydrolysis reaction, to neutralise it.

Bacterial spore formers, like *Bacillus anthracis*, are among the most resistant organisms, with the lowest disinfectant sensitivity. Their spores resist heat, drying, and disinfectants (including 95% ethanol). They are considered the most difficult bioagents to kill. Because of these attributes, *B. anthracis* spores are extraordinarily well suited to be used as biological weapons.

When the formulation is used for spore neutralisation, the cationic surfactants soften and disrupt the spore shell, resulting in pores through which hydrogen peroxide can enter and attack the spore DNA. Test results against **anthrax spores** showed a **7-log reduction** (99,99999%) in 15 minutes.

For information, standard autoclave equipment is considered effective in treating biohazard material when it reaches log-4 (minimum). Spores such as *Geobacillus stearothermophilus* are used as indicators.

EPA (US Environmental Protection Agency) registered DF as Antibacterial, Cleaner, Mildewstat, Decontaminant, Disinfectant, Deodorizer, Fungicide, Algaecide, and Virucide.

Virucidal activity. The formulation disinfection mechanism against viruses is a result of the dual synergy between the surfactant's oxidising properties. In addition to these chemistries, peracetate is also produced and further acts as a strong oxidizer. Rapid degradation of capsid proteins and viral RNA has been observed in a relatively short contact time.

The formulation mechanisms of action on viral systems include a primary effect on the lipid envelope with subsequent degradation of viral capsid proteins, protein denaturation and dissociation of enzymes and interaction with lipids. These mechanisms impact on both enveloped and non-enveloped viruses. Surfactant or quaternary ammonium compounds (QAC) present in the formulation are compounds comprised of hydrophilic and lipophilic portion.

Biological and Chemical agents neutralization

Hydrogen peroxide in the formulation generates free hydroxyl radicals that can break DNA and RNA structures, attack membrane lipids, and produce disruption in virus capsid structure and other essential cellular components.

The formulation demonstrated complete inactivation of Influenza A, Influenza B and Norovirus following a 10-minute exposure time. Bovine Coronavirus (BVC) viral agents were completely inactivated in less than 3 minutes.

Antibacterial activity. The formulation disinfection mechanism against bacteria is similar to virucidal disinfection. Surfactant physically denatures (via boring holes) bacterial protein armor. Oxidizing agents attack genetic material (DNA) and Hydrolyzing agents attack vital bacteria contents and functions.

Disinfection of a large number of different bacteria (gram + and gram -) has been achieved within a 10-minute contact time.

Mold remediation and antitoxin activity. The formulation dual synergy between the surfactant oxidizing properties has been demonstrated to be fungicidal and fungistatic. It is used to control mold. The formulation has been tested to neutralise mould, mould spores and mycotoxins produced by this organism (a toxic secondary metabolite produced by moulds). One mould species may produce many different mycotoxins, while several may produce the same mycotoxin.

Although the formula was developed primarily to neutralise chemical and biological warfare agents and toxic industrial chemicals, it can also be used to disinfect and sterilise other biological pathogens related to public health issues.

Several TICS, biological and chemical warfare agents, have been selected to test the formula decontamination effectiveness (see annexe list of documented agents).

The formula has been demonstrated to provide disinfection efficacy on several surfaces (porous and non-porous): galvanised steel, butyl rubber, polypropylene, concrete, acoustic ceiling tile, commercial carpet, fabric-covered office partition panels, smooth latex, painted wallboard, painted metal, glass, sand, ...

The formulation's specific chemical design and the way it treats biological and chemical agents (with all neutralisation mechanisms already described) ensure that no biological or chemical agent (including TICs) remains in its original state after being in contact with the formulation.

Biological and Chemical agents neutralisation

In addition to the formulation ingredients: quaternary amines and hydrogen peroxide, the formulation also contains a water-soluble cationic polymer to increase the bulk viscosity of

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the solution, and fatty alcohols to increase the surface viscosity of the formulation. The formulation can be produced as “sticky foam”, where glue-like additives have been used to improve the adhesive power to the foam. The fact that the formulation contains

surfactants means that it has enhanced capability to penetrate porous objects, due to the effect of surfactant on reducing surface tension, increasing penetration power.

Based on its behaviour and the tests performed by ITEL (certificate #3700), we can consider this product effective in disintegrating dirt. The formulation is highly capable of removing solid particles from different surfaces, including ionizing radiological particles, and is highly effective when applied accordingly.

Tests conducted by the Technical Unit of Radiation Protection (UAB –Autonomous University of Barcelona), showed the formulation's high decontamination efficacy against radiological particles on different surfaces.

NON-EXHAUSTIVE LIST

Organism Type	
Bacteria	
<i>Agrobacterium tumefaciens</i>	<i>Neisseria catarrhalis</i>
<i>Bacillus anthracis</i> - (Anthrax)	<i>Phytomonastumefaciens</i>
<i>Bacillusanthracis</i> AMES-RIID	<i>Proteusmirabilis</i>
<i>Bacillusanthracis</i> ANR-1	<i>Proteusvulgaris</i>
<i>Bacillus anthracis</i> spores - (Anthrax spores)	<i>Pseudomonasaeruginosa</i>
<i>Bacillusglobigii</i>	<i>Pseudomonasfluorescens</i>
<i>Bacillusmegaterium</i> sp. (veeg.)	<i>Salmonella choleraesuis</i>
<i>Bacillusparatyphus</i>	<i>Salmonella enteritidis</i>
<i>Bacillus subtilis</i>	<i>Salmonella paratyphi</i> (Enteric fever)
<i>Bacillus subtilis</i> spores	<i>Salmonella</i> spp
<i>Clostridium difficile</i>	<i>Salmonella typhimurium</i>
<i>Clostridium tetani</i>	<i>Salmonella typhosa</i> (Typhoid fever)
<i>Corynebacterium diphtheriae</i> (Diphtheria's)	<i>Sarcina lutea</i>
<i>Ebertia typhosa</i>	<i>Serratia marcescens</i>
<i>Enterobacter aerogenes</i>	<i>Shigella dysenteriae</i> (Dysentery)
<i>Enterococcus faecalis</i>	<i>Shigella flexneri</i>
<i>Erwinia herbicola</i>	<i>Shigella paradysenteriae</i>
<i>Escherichia coli</i> (O157-H7 & ESBL)	<i>Spirillum rubrum</i>
<i>Escherichia coli</i> (E. coli)	<i>Staphylococcus aureus</i>
<i>Staphylococcus hemolyticus</i>	<i>Staphylococcus aureus</i> - MRSA
<i>Klebsiella pneumoniae</i>	<i>Staphylococcus aureus</i> - VISA
<i>Legionella bosemanii</i>	<i>Staphylococcus albus</i>
<i>Legionella dumoffii</i>	<i>Staphylococcus epidermidis</i>
<i>Legionella gormanii</i>	<i>Staphylococcus hemolyticus</i>
<i>Legionella longbeachae</i>	<i>Staphylococcus lactis</i>
<i>Legionella micdadei</i>	<i>Staphylococcus</i> spp
<i>Legionella pneumophila</i> (Legionnaires Dis.)	<i>Staphylococcus viridans</i>
<i>Leptospira canicola</i> (infections jaundice)	<i>Staphylococcus aureus</i>
<i>Listeria monocytogenes</i>	T4 Bacteriophage virus
<i>Micrococcus candidus</i>	<i>Vibrio comma</i> (Cholera)
<i>Micrococcus phaeroides</i>	<i>Xanthomonas axonopodis</i> (Citrus Canker)
<i>Mycobacterium tuberculosis</i> (Tuberculosis)	<i>Yersinia Pestis</i>
Mold / Moldspores / Mycotoxins	
Aflatoxin: B1, B2, G1 and G2 (mycotoxin)	<i>Penicillium digitatum</i>
<i>Alternaria</i> (moldspore)	<i>Penicillium expansum</i> (olive)
<i>Aspergillus</i> spores (moldspore)	<i>Penicillium roqueforti</i> (green)

Ascospores (moldspore)	Penicilliumvariable
Aspergillusglaucus	Penicillium/Aspergillus mold spore types
Aspergillusniger	Periconia (moldspore)
Basidiospores (moldspore)	Roridin A (mycotoxin)
Candidabombicola	Smuts (moldspore)
Chaetomium (moldspore)	Stachybotryspsores
Citrinin. Penicilliumcitrinum (mycotoxin)	Stachybotryschartarum
Cladosporium (moldspore)	Stachybotrysmoldspores
Deoxynivalenol: DON orVomitoxin (mycotoxin)	Stachybotrystoxins (mycotoxins)
Mucoracemosus A	Trichophytonmentagrophytes
Mucoracemosus B	Verrucarin A (mycotoxin)
Myxomycetes (moldspore)	Verrucarol (mycotoxin)
Oosporalactis	
Virus	
Bacteriophage - E.Coli	Influenza A
BovineCoronavirus (BCV)	Influenza B
Bovine enterovirus (BEV)	Influenza A (H1N1 + H5N1)
Ebola	MS-2 Bacteriophage virus
FelineCalicivirus (Norovirus)	Poliovirus - Poliomyelitis
Foot and Mouth Disease virus (FMDV)	SARS Coronaviruses
Infectious Hepatitis	T4 Bacteriophage virus
Algae	
Oocystissp	Phormidiumundatum
Phormidiumfoveolarum	Saxitoxin (algaetoxin)
Yeast	
Brewersyeast	Saccharomycescerevisiae
Commonyeast cake	Saccharomycesellipsoideus
Saccharomycespsores	
Protozoa	
ChlorellaVulgaris	Paramecium
NematodeEggs	
Arthropods	
Cimexlectularius	

ChemicalType	
1,1,3,3,3,-pentafluoro-2-(trifluoromethyl)-1-propene	Iodine
1,2-bis(2-chloroethylthio) ethane	IsopropylAcetate
1,3-bis(2-chloroethylthio)-n-propane	Isopropyl Alcohol
1,4-bis(2-chloroethylthio)-n-butane	Ketones
1,5-bis(2-chloroethylthio)-n-pentane	Lactie
2-chloroethyl phenylsulfide	Likewise
2-chloroethylchloromethylsulfide	Malathion (liquid)
2-chloroethylsulfide	Menthamphetamine
2-chlorovinylchloroarsine	Mercaptans
3-quinuclidinyl benzilate	Methanol
Acetaldehyde	MethylAcetate
AceticAcid	Methyl Alcohol
Acetone	MethylBromide (gas)
Acetonitrile	MethylChloride
Alcohol's	MethylEthylKetone
Alkalinity	methylphosphonyldichloride
Alkylphosphites	Mud and Sediment
Alkylphosphonites	Naphtha
Alkylphosphonydifluoride	NitricAcid
Alkylatedsalts	Nitrobenzene

Amines	Nitrotoluene
Amiton	O-alkyl
AmylAcetate	O-alkylphosphoramidocyanidates
Amyl Alcohol	O-alkylphosphonofluoridates
AnhydrousAmmonia	Odors, General
Antifreeze	O-ethyl N, N-dimethylphosphoramidocyanide (TABUN_GA Agent)
Arsenictrichloride	O-ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate (VX)
Arsine (gas)	O-ethyl S-ethyl (diethyl) phenyl phosphonothioate (malathion)
Benzene	Oil, Suspended
bis(2-chloroethyl) ethylamine	Oils, Dissolved
bis(2-chloroethyl) methylamine	O-isopropylmethylphosphonofluoride (SARIN_GB Agent)
bis(2-chloroethyl) sulfide (MUSTARD_HD Agent)	O-pinacolmethylphosphonofluoride (SOMAN_GD Agent)
bis(2-chloroethylthio) methane	OrganicAcids
bis(2-chloroethylthioethyl) ether	OrganicEsters
bis(2-chloroethylthiomethyl) ether	OrganicSalts
bis(2-chlorovinyl) chloroarsine	OxalicAcids
Bleach (sodiumhypochlorite)	Oxone
BoronTrichloride (liquid)	Oxyden
ButilAcetate	PCB's
	Pesticides
Butyllsocyanate	Phenol
CalciumHypochlorite	Phosgene
Capsaicin (Pepper Spray)	Phosphorousoxychloride
CarbonDisulfide	PhosphorousTrichloride (liquid)
Chloral (trichloroethanol)	Phosphoruspentachloride
Chloramine	Pinacolylalcohols
Chlorine	Plastic Taste
Chlorine (gas)	PlatingWaste
Chlorobenze	PotassiumPermanganate
Chloroform (trichloromethane)	PrecipitatedIron
Chloropicrin	PrecipitatedSulfur
Chlorosarin	ProploicAcid
Cholophenol	Propionaldehyde
Chorophyll	PropylAcetate
CitricAcid	Propyl Alcohol
Cresol (hydroxytoluene)	PropylChloride
Cyanogenchloride	Protonatedsalts
Defoliants	Quinuclidin-3-ol
Detergents	Radon
Dialkyl aminoethan-2-ols	Ricin
Dialkyl aminoethane-2-thiols,	RubberHose Taste
Dialkyl aminoethyl-2-chlorides	s-2-dialkyl aminoethylalkylphosphonothiolates
Dialkylphosphoramidates	Saxitoxin
Dialkylphosphoramidicdihalides	Soap
Diesel Fuel and Gasoline	SodiumCyanide

<i>Dimethylmethylphosphonate</i>	<i>SodiumHypochlorite</i>
<i>Diphenylhydroxyaceticacid</i>	<i>Soluble IronSolvents</i>
<i>Diphenylchlorophosphate</i>	<i>Sulfurdichloride</i>
<i>Dyes</i>	<i>SulfurDioxide (gas)</i>
<i>Emulsions</i>	<i>Sulfurmonochloride</i>
<i>EthelEther</i>	<i>SulphonatedOils</i>
<i>EthylAcetate</i>	<i>Suspended Matter</i>
<i>EthylAcrylate</i>	<i>Tannins</i>
<i>Ethyl Alcohol</i>	<i>TarEmulsion</i>
<i>Ethyl Alcohol</i>	<i>TartaricAcid</i>
<i>Ethyl Amina</i>	<i>Taste, DI Water and Organics</i>
<i>EthylChloride</i>	<i>Taxol (Paclitaxel)</i>
<i>Ethylene Oxide (gas)</i>	<i>TetraethylPyrophosphate (liquid)</i>
<i>Fluorine (gas)</i>	<i>Thiodiglycols</i>
<i>Formaldehyde (liquid and gas)</i>	<i>Thionylchloride</i>
<i>Glycol's</i>	<i>THM's (Trihalomethanes)</i>
<i>Herbicides</i>	<i>Toludine</i>
<i>Hydrogen</i>	<i>Toluene</i>
<i>HydrogenBromide</i>	<i>Trichloroethylene</i>
<i>hydrogencyanide</i>	<i>Tris(2-chlorovinyl) arsine</i>
<i>HydrogenIodide</i>	<i>TungstenHexaflouride (gas)</i>
<i>HydrogenPeroxide</i>	<i>Turpentine</i>
<i>HydrogenSelenide</i>	<i>Urine and Feces</i>
<i>HydrogenSulfide (gas)</i>	<i>Vinegar</i>
<i>HypochorousAcid</i>	<i>VolatineOrganicCompounds (VOC's)</i>
<i>Insecticides</i>	<i>Xylene</i>

This product requires the whole property to be treated and unoccupied for 20 hours before re-entry.

It is strongly recommended that a post-clean be undertaken to remove the chemical-treated area, but note that there is no chemical residue.

Building Forensics also provides chemical air treatment, which is internationally recognised as the only process capable of providing medically sound risk reduction and decontamination of the air.

Jeff Charlton
Principle consultant
Building Forensics