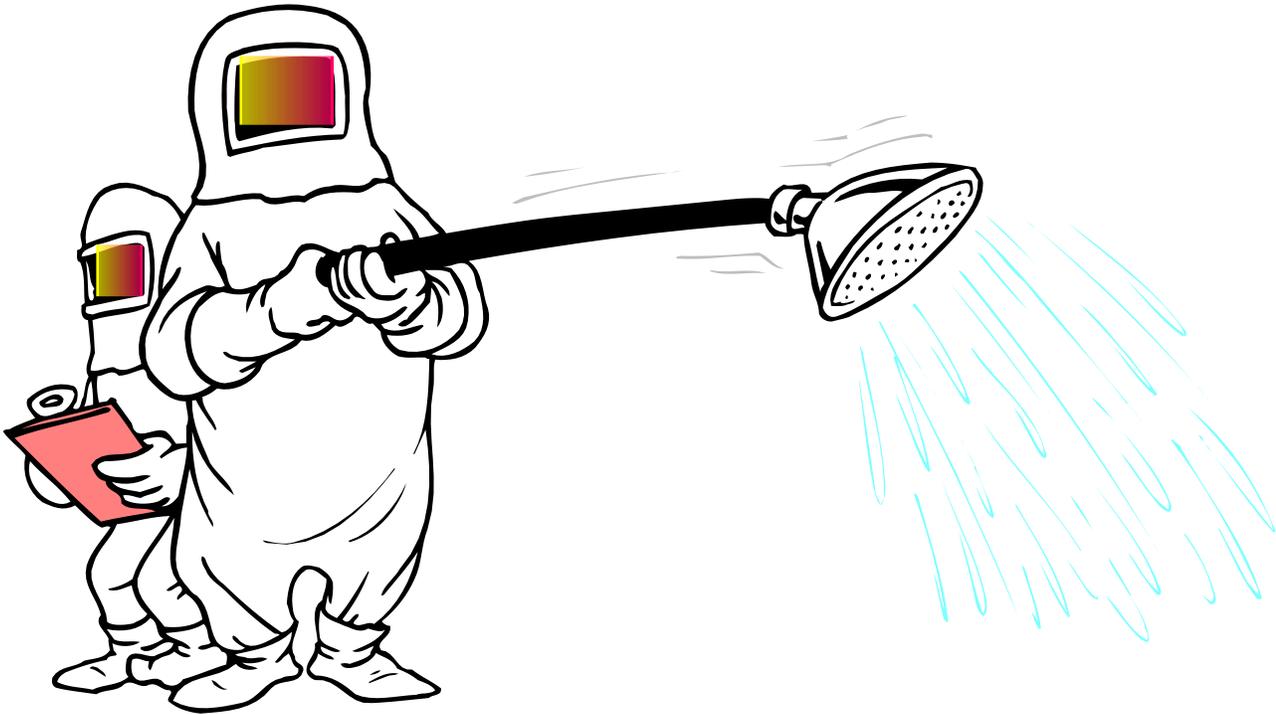


## Contamination Control Fixative List

Rev 17 June 2012

# Fixatives used in the Nuclear Industry to Trap Radioactive Contamination and other Hazardous Materials



Lancs Industries

(425) 823-6634

[www.Lancsindustries.com](http://www.Lancsindustries.com)

## Contamination Control Fixative List

Rev 17 June 2012

Fixative Common Name	Typical Use	Notes
<p>Ellis Paint Company  <a href="http://www.ellispaint.com/">http://www.ellispaint.com/</a></p> <p><b>E T Glycerin Solution (ETGS) or ET6012-06 Waterborne Capture Coating</b></p> 	<p>1,2,3- Propanetriol.                      Applied as an aerosol to underground pits or rooms.                      Aerosol deposits a sticky film on all surfaces, which covers all removable contamination and prevents spread.</p> <p>NOTE: Master Lee has an aerosol generator to apply this fixative as an aerosol. Call (509) 943-2949 Or <a href="mailto:largent@mlhcorp.com">largent@mlhcorp.com</a>.</p>	<p>Fixative washes off easily with water or rain. Does not foul operating mechanisms and fasteners. Does not contain sugar, which would attract critters. Can also be sprayed. Used at Hanford Tank Farms and Plutonium Finishing Plant (PFP).</p> <p>MSDS for all Ellis Paint Products can be found at  <a href="http://www.ellispaint.com/products.html">http://www.ellispaint.com/products.html</a></p>
<p>Ellis Paint Company  <a href="http://www.ellispaint.com/">http://www.ellispaint.com/</a></p> <p><b>Invisible Blue</b></p> <p>See Note above on Master Lee</p>	<p>1,2,3 – Propanetriol                      UV – Blue Dye.                      Applied as an aerosol to underground pits or rooms.                      Aerosol deposits a sticky film on all surfaces, which covers all removable contamination and prevents spread.</p>	<p>Fixative washes off easily with water or rain. Does not contain sugar, which would attract critters. The invisible blue shows up in black light so coating thickness can be estimated.</p>
<p>Ellis Paint Company  <a href="http://www.ellispaint.com/">http://www.ellispaint.com/</a></p> <p><b>25/75 ETLS Soil Safe Concentrate</b></p> <p>See Note above on Master Lee</p>	<p>Soil/Dust Suppression</p>	
<p>Ellis Paint Company  <a href="http://www.ellispaint.com/">http://www.ellispaint.com/</a></p> <p><b>ETLS Linseed Oil Capture Coating</b></p>	<p>Glycerin + Linseed Oil                      Typical fixative</p>	<p>Linseed oil leaves an oily coating</p>
	<p>20% Glycerin                      Similar to 50/50 ET Glycerin except this product has 20% Glycerin</p> <p>Can also be used with water. Has been used to trap contamination found when uncovering corroded waste drums.</p>	<p>Purchase at:  <a href="http://www.bing.com/shopping/search?q=Dyna+Fogger&amp;FORM=HURE">http://www.bing.com/shopping/search?q=Dyna+Fogger&amp;FORM=HURE</a></p>
<p>Ellis Paint Company  <a href="http://www.ellispaint.com/">http://www.ellispaint.com/</a></p> <p><b>50/50 ET Glycerin Solution</b></p>	<p>50% Glycerin                      Contains more glycerin than ETGS</p>	<p>Usually manually sprayed, not fogged.</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p>Ellis Paint Company  <a href="http://www.ellispaint.com/">http://www.ellispaint.com/</a></p> <p><b>Capture Permacoat</b></p>	<p>Latex flexible impermeable barrier. Sprayed, rolled or brushed for permanent contamination encapsulation</p>	<p>Originally formulated for ocean-going cargo containers. Very durable and very resistant to the elements</p>
<p>Midwest Industrial Supply, Inc.  <a href="http://www.midwestinc.com">www.midwestinc.com</a></p> <p><b>Soil Sement</b></p> 	<p>Polymer Emulsion. Normally sprayed onto surface to seal contamination in place. Has been used inside buildings to capture asbestos, beryllium, and radioactive contamination. It is easy to apply and dries to a hard surface. Can be applied with fire hose, which makes it easier to spray large areas. It is more expensive than other dust control agents.</p>	<p>Fixative does not wash off easily with water or rain. Fouls operating mechanisms and fasteners. Does not contain sugar, which would attract critters. Used at Building 233-S at Hanford. Contractors mix at 10:1 ratio of water to Soil Sement for covering soil. Ratio is 4:1 for inside buildings.</p>
<p>Sanchem Inc.  <a href="http://www.sanchem.com">www.sanchem.com</a></p> <p><b>Safeguard</b>  5022-A</p>	<p>Water and Glue. Normally sprayed onto surface. Seals contamination in place.</p>	<p>Fixative does not wash off easily with water or rain. Fouls operating mechanisms or fasteners. Does not contain sugar, which would attract critters. Used at Hanford Tank Farms</p>
<p>Bartlett Services, Inc  <a href="http://www.bartlettnuclear.com/products-technology-contamination-control-coatings.htm">http://www.bartlettnuclear.com/products-technology-contamination-control-coatings.htm</a></p> <p><b>Polymeric Barrier System (PBS)</b></p> 	<p>PBS is a non-toxic, water-based solution which forms an impermeable barrier between hazardous or contaminated materials and the environment.</p> <p>Can be applied by industrial spray equipment, paint rollers, or brushes. Seals contamination in place. Need proper ventilation.</p>	<p>Commonly used to stabilize large components, concrete, valves, and other problematic radwaste equipment prior to shipment</p> <p>Very hard to remove. Can be diluted with water. Seals bare lead to keep it from oxidizing. Has been used to "cocoon" large items that have to be left outside or shipped. Used at ORNL on outside of a metal Quonset Hut to seal contaminated flaking paint, prior to demolition.</p>
<p>Bartlett Nuclear Services</p>  <p><b>TLC Stripcoat</b></p>	<p>Temporary Layered Strippable Coating that is non-hazardous, non-toxic, water-based solution designed to safely remove and prevent the spread of contamination.</p> <p>Can be sprayed, rolled, or brushed. Several light coats recommended. While curing, Stripcoat mechanically and chemically entraps contamination.</p>	<p><a href="http://www.bartlettnuclear.com/products-technology-contamination-control-coatings.htm">http://www.bartlettnuclear.com/products-technology-contamination-control-coatings.htm</a></p>

## Contamination Control Fixative List

Rev 17 June 2012

<p><b>DeconGel 1101, 1120 and 1121</b> Cellular Engineering, (808) 208-2208</p> <p><a href="http://decongel.com/product-docs.html">http://decongel.com/product-docs.html</a></p> <p>See examples at website</p>	<p>Temporary layered strippable coating. Can be applied by paint brush, trowel, etc. 1 to 24 hour drying time before it can be stripped. Can be thinned with water. Each product has a different viscosity.</p> <p>Decon Gel 1120 has been sprayed with Wagner Power sprayer at 7.2 GPH Wide Shot Max w/1 mm tip. Decon Gel 1121 has been applied with Graco UltraMax 795 @3300 psi, 0.095 GPH w/0.021" tip.</p>	<p>Easy to remove. A nuclear power plant favorite because it will not harm plant systems. It can be applied to horizontal, vertical, and inverted surfaces. When dry, the product locks the contaminants into a polymer matrix. Has 12 month shelf life.</p> <p>Decon Gel cleans out any old paint left in the spray gun and this can cause plugging. Typically, non-porous surfaces require 1-2 coats and semi-porous surfaces require 3-4 coats.</p>
<p><b>Rust Doctor</b></p> <p><a href="http://www.rustdoctor.com">www.rustdoctor.com</a></p> 	<p>Water based latex paint. Can be sprayed, rolled or brushed on. Seals loose contamination in place when it converts from rust to magnetite.</p>	<p>This unique product chemically converts rusty metal to black magnetite, which is a very hard form of iron oxide. Very hard to remove.</p> <p>Used at Hanford by BHI at 100N to fix contamination inside large steel tank before demolition. When the Rust doctor was applied on the rusty, contaminated surface, the loose contamination became fixed when the rust changed to black magnetite.</p>
<p>Specialty Products Inc. <a href="http://www.specialty-products.com">www.specialty-products.com</a></p> <p>(SPI) <b>Polysield SS-100</b></p>	<p>Pure Polyurea Elastomer. Sprayed over a broad range of ambient and substrate temperatures. Seals contamination in place.</p>	<p>This system is based on amine-terminated polyether resins, amine chain extenders and MDI prepolymers. It provides a flexible, tough, resilient monolithic membrane.</p> <p>Used at 100N cribs at Hanford.</p>
<p>Williams Power Co. <a href="http://www.wisgrp.com/pages.aspx?pageid=25">http://www.wisgrp.com/pages.aspx?pageid=25</a></p> <p><b>ALARA 1146 Strippable Coating</b> Report DOE/EM-0533</p>  <p><small>Photos provided by the Deactivation and Decommissioning Focus Area</small></p> <p><small>ALARA 1146 decontaminates surfaces as it is stripped away.</small></p>	<p>Water-Borne Vinyl Butyl Strippable Coating.</p> <p>Can be sprayed, rolled, brushed, poured or squeegeed onto the surface. Seals contamination in place and peels up.</p>	<p>Free of solvents and toxic materials. Rapid application/removal. Reduces waste volumes. Easy peel-up features after recommended time frames. Drying times depend on temperature, thickness and ventilation. Read about ALARA 1146 at <a href="http://www.osti.gov/bridge/product.biblio.jsp?query_id=0&amp;page=0&amp;osti_id=750124&amp;Row=1&amp;formname=basicsearch.jsp">http://www.osti.gov/bridge/product.biblio.jsp?query_id=0&amp;page=0&amp;osti_id=750124&amp;Row=1&amp;formname=basicsearch.jsp</a></p>

## Contamination Control Fixative List

Rev 17 June 2012

<p>Sherwin Williams  <a href="http://www.Sherwin-williams.com">www.Sherwin-williams.com</a>  <b>Polyurea Special Protective Coating (SPI)</b>          Formally known as:          Envirolastic AR 425</p> 	<p>Polyurea Elastomer.          Sprayed on over a board range of ambient and substrate temperatures. Seals contamination in place.</p>	<p>It provides a tough, flexible, resilient monolithic membrane. Used at Hanford Tank Farms and at 222-S. Hanford Tank Farms wrote a Test Report #RPP-7806 on the chemical compatibility and physical characteristics of polyurea. You can find on the DOE Information Bridge at  <a href="http://www.osti.gov/bridge/product.biblio.jsp?query_id=0&amp;page=0&amp;osti_id=806893&amp;Row=4&amp;formname=basicsearch.jsp">http://www.osti.gov/bridge/product.biblio.jsp?query_id=0&amp;page=0&amp;osti_id=806893&amp;Row=4&amp;formname=basicsearch.jsp</a></p>
<p>Instacote Inc.  <a href="http://www.instacote.com">www.instacote.com</a>  <b>Instacote SE FR</b></p> 	<p>Sprayable Polyurea Elastomer          Spray on application. Seals contamination in place. Meets DOT regulations.</p> 	<p>Rapid curing. Impervious to moisture during application and immediately following. A very strong penetration-resistant coating. Used at Rocky Flats to cover large contaminated equipment before shipment over public highways. Equipment was covered with industrial strength Saran Wrap and then sprayed with Polyurea Coating to 1/4" thickness.</p>
<p>Instacote Inc.  <a href="http://www.instacote.com">www.instacote.com</a>  <b>Instacote CC Epoxy 609</b></p>	<p>Two-component low viscosity rapid setting epoxy. Epoxy Encapsulation Media, Curing agent.          CC Epoxy is a fixative control agent used to effectively grout piping/plumbing closed and will render any contamination within pipe locked down.</p>	<p>Contamination Control Fixative. CC Epoxy 609 is compatible with Beryllium, radiological nucleotides (Plutonium and Uranium) and asbestos. Viscosity similar to water and rapidly cures to a solid.</p>
<p>Instacote Inc.  <a href="http://www.instacote.com">www.instacote.com</a>  <b>Instacote CC FIX</b></p> 	<p>High solids latex based product. Vinyl Latex/Modified Poly Acrylate Coating.          CC Fix can be brushed, rolled, misted, or spray applied. Seals contamination in place, leaving a hard rugged coating.</p>	<p>Contamination Control Fixative.          Designed to encapsulate and fix contaminates. Great for walls, floors, etc. allowing work to progress, by leaving a hard rugged coating. Is similar to latex paint</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p>Instacote Inc <a href="http://www.Instacote.com">www.Instacote.com</a> <b>CC Fix LV</b></p> 	<p>CC Fix LV (Low Viscosity) is designed to be applied remotely into hot cells and other high contamination/high radiation areas to permanently stabilize radiological, beryllium, asbestos, and other hazardous contamination.</p>	<p>Manufacturer recommends that several coats be applied using aerosol techniques.</p> <p>Can be used to stabilize surfaces inside tanks, ventilation ducts, pipes, and equipment.</p>
<p>Instacote Inc. <a href="http://www.instacote.com">www.instacote.com</a> <b>Instacote CC Strip</b></p>	<p>Vinyl Acrylic Latex Strippable Coating. CC Strip is water based and can be sprayed or brushed on. Seals contamination in place and peels up easily.</p>	<p>Loose contamination is encapsulated in the CC Strip and is removed when it is peeled off. Highly effective in reducing contaminated areas.</p>
<p>Instacote Inc. <a href="http://www.instacote.com">www.instacote.com</a> <b>Instacote CC WET</b></p> 	<p>Water-based Anti-dusting Media. Stabilizes radiological, beryllium, asbestos and other hazardous contamination. Spray as a fine mist to reduce airborne contamination in accessible and inaccessible locations.</p>	<p>Seems to be similar to glycerin and water. Used as a first step in a two step approach to fix contamination. Once the surface has been stabilized using CC Wet, another fixative like CC Fix can be applied. This rehydrates the loose contamination and it's adsorbed into the matrix of the fix. This leaves a hard coating.</p>
<p>Instacote Inc <a href="http://www.instacote.com">www.instacote.com</a> <b>Instacote CC Epoxy SP</b></p>	<p>An epoxy that is used on contaminated building surfaces that require a robust long-lasting coating.</p>	<p>.</p>
<p>Instacote Inc <a href="http://www.instacote.com">www.instacote.com</a> <b>CC T 207</b></p>	<p>Made from water, glycerin, propylene glycol Stabilizes sludge and residues in tanks and process equipment</p>	<p>CC T 207 transforms dry, powder-like tank residues to a spongy, "brownie-like" consistency.</p> <p>CC 207 is pumped or poured into process tanks. It is packaged in both 5-gallon and 55-gallon containers.</p>
<p>Instacote Inc <a href="http://www.instacote.com">www.instacote.com</a> <b>CC PS 413</b></p>	<p>Two-part urethane consisting of resin and a hardener. Pumped into piping to fix contamination</p>	<p>Epoxy product that coats the inside of piping "blue". The coating fixes the contamination and reduces spread during size reduction. CC PS 413 increases productivity and reduces risk during size reduction of pipes by preventing re-suspension and spread of contamination.</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p><b>Instacote Inc/BASF Autofroth</b></p> <p><a href="http://www.instacote.com">www.instacote.com</a></p> 	<p>Polyurethane foam.</p> <p>Structural expanding foam used to block/brace large items in waste packaging, fixing and encapsulating contamination inside glove boxes, ventilation ducts, tanks, and other processing equipment.</p>	<p>Foam being sprayed into a room caught on fire at Rocky Flats when they sprayed too much at one time without waiting for it to cure. Foam gives off-gas and heat, which can catch fire. See <a href="http://www.hss.energy.gov/csa/analysis/oesummary/oesummary2004/oe2004-07.pdf">http://www.hss.energy.gov/csa/analysis/oesummary/oesummary2004/oe2004-07.pdf</a></p>
<p>Instacote Inc</p> <p><b>Pipe Stabilization CC Epoxy 609</b></p> 	<p>Pourable foam placed inside pipes to reduce the potential for spread of contamination during size reduction.</p>	<p>The need for glovebags and other containment can be eliminated and the level of respiratory protection can be reduced.</p>
<p>Instacote Inc</p> <p><b>CC Doff</b></p>	<p>Stabilizes contamination on worker PPE prior to doffing at the step-off pad</p>	<p>Safer product than using hair spray or aerosol spray paint to fix contamination on the outside of protective clothing.</p>
<p>Instacote Inc</p> <p><b>CC Demo 100</b></p>	<p>Stabilizes rubble and soils during building demolition and excavation activities.</p>	
<p>Instacote Inc</p> <p><b>Instacote SEFR</b></p> 	<p>A Polyurea coating used in the construction of low level waste shipping packages. to control the spread of contamination. Used in areas with heavy traffic, impact, or harsh environmental conditions.</p>	<p>SEFR is used to restore the structural integrity of compromised waste packages, such as Sea Land containers, Intermodals and other waste containers.</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p><b>Instacote M-25</b></p> 	<p>M-25 is a Polyurea used to control contamination in industrial facilities. It can also be used to control contamination in soils and surfaves that are exposed to harsh environmental conditions.</p> <p>It can be used to protect clean surfaces from becoming contaminated during the D&amp;D process.</p>	<p>Contaminated areas that are exposed to harsh environmental conditions will be controlled for long periods using M-25 polyurea. When applied over geotextile fabric, M-25 provides a hard, water-proof "soil cap" that lasts for many years.</p> <p>M-25 is provided in kits. A kit consists of one 55-gallon drum of isocyanate "Part A" and one 55-gallon drum of resin "Part B". InstaCote provides a "turn key" service for the application of M-25, or they can train your work force to spray the product.</p>
<p>Soil Conditioner: <b>AgriGator Terra Bond</b> <a href="http://www.pildyshtech.com/terra-bond.htm">www.pildyshtech.com/terra-bond.htm</a> <a href="http://www.agrigator.com/LABELS&amp;MSDS/GatorLabel.pdf">http://www.agrigator.com/LABELS&amp;MSDS/GatorLabel.pdf</a> <a href="http://www.agrigator.com">www.agrigator.com</a> Sold by America West at (509) 547-2797</p>	<p>Water based anti-dusting media. Company will mix additives to lower cure temperature, prevent freezing, and make more pliable. Spray applied. Effectively controls visible dust emissions &amp; potential spread of contamination.</p>	<p>Product comes in liquid form and is easier to dilute than Soil Sement in dry form, and results in more consistent mixtures. Much cheaper than other fixatives.</p> <p>Used for general dust suppression</p>
<p>D&amp;D Emulsions <a href="http://www.ddemulsionsinc.com">www.ddemulsionsinc.com</a> 419-525-4988 D&amp;D Emulsions (419) 522-9440</p> <p><b>Dust Bond</b></p>	<p>Dust control product that is formulated using a virgin adhesive petroleum resin suspended in a stable emulsion.</p>	<p>Sprayed. It penetrates, saturates, and bonds surface dust for a dust-free resilient surface. Used for heavy-duty dust suppression at Hanford in the 100 areas. It is diluted with water for spraying.</p> <p>The cohesive resins penetrate the soil surface and attach themselves to the dusty fine particles, clustering them into particles that are too large to become airborne. The clustering of the particles aids in binding loose contamination and stabilizing the soil for easier excavation.</p>
<p>Dumond Chemicals Inc <a href="http://www.dumondchemicals.com">www.dumondchemicals.com</a></p> <p><b>Certane 1000 Topcoat &amp; Certane 2000 Overcoat</b></p> <p>Fixative Latex Based</p>	<p>They are a unique, versatile penetrating encapsulant used for porous sprayed on asbestos/soil.</p> <p>Certane 1000 is sprayed to encapsulate and bind fibers after asbestos removal. Certane 2000 seal-coats sprayed on insulation.</p>	<p>Rapidly saturates loose or friable asbestos fibers, curing to a tough coating.</p> <p>Another product is Certane 2050 that will penetrate the soil and cure to a tough, yet resilient coating.</p> <p>Dumond Chemicals also sell paint removers called Peel Away. See MSDS #033465 &amp; #062829 at Hanford.</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p>Spraylat Corporation</p> <p><a href="http://www.spraylat.com/geointextlong.asp?miKey=44">http://www.spraylat.com/geointextlong.asp?miKey=44</a></p> <p><b>Peelable and protective coatings</b></p>	<p>Sprayed on products to provide a protective barrier.</p>	<p>Has been used as a protective coating for complex items that have to be shipped over public roads. Often sprayed over new boats to eliminate damage from the elements during shipment and for storing boats outside.</p>
<p><b>Serpiflex Shield SSC06</b></p> <p><a href="http://www.na.graceconstruction.com/custom/firestops/downloads/abatement/AB-310A.pdf">http://www.na.graceconstruction.com/custom/firestops/downloads/abatement/AB-310A.pdf</a></p>	<p>Aerosol can with water-based vinyl acrylic chemicals. Sprayed from aerosol can onto asbestos to restrict airborne fibers.</p>	<p>Used by insulators to seal asbestos lagging after core sampling. Can be used as a removal and post-removal encapsulant with glove bag operations. Will seal radioactive contamination too.</p>
<p><b>Serpiflex Shield SSA12</b></p>	<p>Concentrated water-based vinyl acrylic with flame-retardant fillers. Used to encapsulate asbestos fibers. It is nontoxic, non-combustible and does not contain any solvents or silicates.</p>	<p>Has been tested and found to be effective for at least 20 years.</p>
<p>Fiberlock Technologies, Inc Lag-Cote (6424) and Lag-Cote II (6420)</p> <p><b>Fiberset PM</b></p> <p><a href="http://www.fiberlock.com/gr/aec.htm">http://www.fiberlock.com/gr/aec.htm</a></p>	<p>High solids encapsulant for insulation.</p> <p>Used to seal insulation fibers and cover fibers on steel, wood, masonry, &amp; other sound surfaces. Fiberlock PM is used by the insulators to seal exposed insulation before glovebag is removed. Usually applied with rag.</p>	<p>See <a href="http://www.fiberlock.com">www.fiberlock.com</a> Dries in 1-2 hours. One gallon covers ~150 ft2 with paint brush or 600 ft2 with air-less sprayer</p>
<p>FEVDI <b>Contamination Fixatives LP3 and LP4</b></p>	<p>Water-borne acrylic copolymers, soluble in water in any proportion. Non-hazardous and non-flammable.</p> <p>Can be used as a temporary or permanent fixative. Can be sprayed, rolled or brushed. Contains no carcinogens.</p>	<p>Both LP3 and LP4 can be easily removed from a surface (even after months or years) by first spraying with a small amount of ALCATUM manufactured by FEVDI, and then, after 3-5 minutes, by rinsing with high pressure water. Made in France-Cost was \$45-\$90/gal shipped to USA</p>
<p><b>Acrylic Paint</b></p>	<p>Exterior paint can be a good fixative if there is a way to apply it. It can be sprayed, rolled or brushed.</p>	<p>Often, the best fixative is exterior acrylic paint. It is cheap and painters are familiar with how to apply it. For example: See <a href="http://www.ppgpittsburghpaints.com/our_products/exterior_paints/speedhide_interior_exterior/index.htm">http://www.ppgpittsburghpaints.com/our_products/exterior_paints/speedhide_interior_exterior/index.htm</a></p>
<p><b>Pre Prime 167 Rust Penetrating Sealer</b> sold by Devoe High Performance Coatings at 1-888-424-2847 Option 1.</p> <p><a href="http://www.duspec.com/datasheet/datasheet.pdf?documentFormat=pdf&amp;systemSetId=13&amp;productCode=167&amp;documentType=datasheet&amp;submit=Get+Document">http://www.duspec.com/datasheet/datasheet.pdf?documentFormat=pdf&amp;systemSetId=13&amp;productCode=167&amp;documentType=datasheet&amp;submit=Get+Document</a></p>	<p>100%Solids Epoxy Sealer for masonry surfaces and penetrates metal rust. Do not thin. This sealer is a two-component product supplied in 4 gallon and 1 gallon kits. Pour together slowly and use within 4 hours. We also purchase Devran 201 Universal Epoxy Primer from this company. May need respirators to apply. Penetrates up to 5 millimeters into concrete.</p>	<p>5 fixatives were compared to paint. Ekor was too expensive. Safe-Seal had 2 carcinogens. 3 remaining fixatives were tested and Pre-Prime applied easily, had good coverage, and fixed itself to concrete. It also penetrated into the concrete. Covers 25 sq meters per liter with 40-micron thickness. 30 hour dry time.</p> <p>Purchase Devran 201 Universal Epoxy Primer from this company</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p><b>A-B-C Asbestos Binding Compound</b>          Made by Fiberlock Technologies  <a href="http://www.fiberlock.com/pr/6421.htm">http://www.fiberlock.com/pr/6421.htm</a></p>	<p>Fixative for loose removable contamination. High solids encapsulant, non-flammable; can be diluted with up to 4 parts water, similar to latex paint</p>	<p>Hanford tested the product on concrete and it reacted similar to PBS. Looks like a good fixative that isn't easily removed          Has been used to remove radioactive and Beryllium contamination</p>
<p><b>Lag-Cote 6424 and Lag-Cote II 6420</b>  <a href="http://www.fiberlock.com/gr/aec.htm">www.fiberlock.com/gr/aec.htm</a>          Fiberlock Technologies</p>	<p>High solids encapsulant used for insulation removal. See website. It dries in 1-2 hours. One gallon covers 150 ft2 with paint brush or 600 ft2 with airless sprayer.</p>	<p>Used to seal insulation fibers and cover fibers on steel, wood, masonry, and other surfaces.</p>
<p><b>WT-HS13 High Strength Spray Adhesive</b>  <a href="http://www.ok2spray.com/HS13.pdf">http://www.ok2spray.com/HS13.pdf</a></p>		<p>Similar to spray contact cement</p>
<p><b>Polo Dustcon</b>          Sold by Ondeo Nalco Co  <a href="http://www.senior.com/au/dustcon.htm">www.senior.com/au/dustcon.htm</a></p>	<p>Developed by mining industry to control dust.</p>	<p>A dust suppressant similar to Soil Sement or Terra-Bond</p>
<p><b>SoilTac</b>          Made by Soil Works LLC, at (800) 545-5420 or  <a href="http://www.soiltac.com">www.soiltac.com</a></p>	<p>Polymer emulsion similar to Soil Sement, only cheaper.</p>	<p>A dust suppressant similar to Soil Sement or Terra Bond. Applied with a fire hose to debris piles during D&amp;D.</p>
<p><b>Roadmaster Liquid Calcium Chloride</b>  <a href="http://www.tetrachemicals.com/Products/Calcium_Chloride/Liquid_Calcium_Chloride/ROADMASTER.aqf">http://www.tetrachemicals.com/Products/Calcium_Chloride/Liquid_Calcium_Chloride/ROADMASTER.aqf</a></p>	<p>Surface dust control, soil stabilization on unpaved roads, road shoulders, embankments, stockpiles and construction sites.</p>	<p>Contact ALARA Center for a report that compares Roadmaster, Dust Bond, Durasoil, and Guar Tackifier</p>
<p><b>Durasoil</b>  <a href="http://www.durasoil.com/index.php">http://www.durasoil.com/index.php</a></p>	<p>Ultra-pure synthetic organic fluid. Recommended Application Rates are at:  <a href="http://www.durasoil.com/apprates.php">http://www.durasoil.com/apprates.php</a></p>	<p>Can be applied, regardless of weather conditions. Contact ALARA Center for a report that compares Roadmaster, Dust Bond, Durasoil, and Guar Tackifier</p>
<p><b>Guar Tackifier</b>  <a href="http://www.southwestenvironment.com/tackifiers.asp">http://www.southwestenvironment.com/tackifiers.asp</a></p>	<p>Usage per acre - applies at a rate of 30 lbs of ENVIRO-TAK with 150 lbs of fiber mulch in 800 gallons of water and apply as an overspray.</p>	<p>Contact ALARA Center for a report that compares Roadmaster, Dust Bond, Durasoil, and Guar Tackifier</p>
<p><b>HYCOTE 151</b>  <a href="http://www.somay.com/featured/hycote/index.html">www.somay.com/featured/hycote/index.html</a></p>	<p>Two-component, polyamine-cured epoxy coating.</p>	<p>Used for underwater coatings and repairs. Can be applied with divers.</p>
<p><b>PX-300 Soil Stabilization</b>  <a href="http://www.gmbostoncompany.com">www.gmbostoncompany.com</a></p>	<p>Resin copolymer/enzymatic liquid soil sealer and stabilizer</p>	<p>Works similar to Terra-bond , except is more expensive. It takes about 25 gallons added to 300 gallons of water. Terra-bond uses 8oz/300 gallons.</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p><b>Posi-Shell Cover System</b>  <b>Made from Posi-Pak Type P-100 &amp; PSM-200 Setting Agent + cement.</b>  <a href="http://www.landfill.com/technicalinfo.htm">http://www.landfill.com/technicalinfo.htm</a></p>	<p>Requires special equipment to apply and is expensive.</p>	<p>Product is a cement-mortar mixture similar to stucco. Used at the ERDF trench to cover debris and dirt added each day.</p>
<p><b>Glue - Polyvinyl Acetate Emulsion</b></p> 	<p>Elmer's white glue mixed with water has been used at Hanford successfully to capture contamination. Ratio of glue to water was 1:25 and 1:15. Solution was used to "spritz" the work area to eliminate airborne contamination. The water evaporates and leaves a sticky coating.</p>	<p>Hanford has approved the use of several glues that could be mixed with water to make a fixative. Recommend testing prior to use.</p>
<p><b>Roof/Wall Coatings</b>  <a href="http://www.gardner-gibson.com/linedetails.aspx?id=87">http://www.gardner-gibson.com/linedetails.aspx?id=87</a></p> 	<p>Typical waterproof coatings used on mobile home roofs and walls can be used as a fixative. A hardware store located outside Hanford carries several products made by Gardner-Gibson. Products made by other manufacturers can be found at other hardware stores and at other DOE Sites.</p>	<p>Aluminum roof coatings are available to reflect sunlight and stands up in harsh climates. See the website to see a complete list of the available products and their MSDS sheets. For best results, read the manufacturer's recommendations. This may require power washing and the addition of fabric materials.</p>
<p><b>Kool-Seal Roof Coating</b></p> <p><a href="http://www.koolseal.com/product_detail.asp?product_id=63-600">http://www.koolseal.com/product_detail.asp?product_id=63-600</a></p> <p>by KST Coatings, a division of Sherwin-Williams</p>	<p>Elastomeric Roof Coating – Forms a thick rubber-like blanket of protection. Expands and contracts.</p>	<p>Used at Paducah, KY as a fixative.</p>
<p><b>Control Lockdown</b>  Encapsulant made by Grayling Industries</p> 	<p>Blend of acrylic copolymers and surface active agents which effectively bonds and encapsulates particulate matter like asbestos</p>	<p>Provides long lasting, durable barrier with excellent primer characteristics for spray back and water based latex coatings. Covers approximately 75 to 200 feet per gallon on hard surface.</p> <p>Used as a fixative for radioactive contamination</p> <p>For MSDS see:  <a href="http://www.questsafety.com/pdf/controllockdown.pdf">http://www.questsafety.com/pdf/controllockdown.pdf</a></p>

## Contamination Control Fixative List

Rev 17 June 2012

<p><u>Coatings Test at ORNL.</u> Plan was to try several fixatives on a metal tank or Quonset hut that has contaminated peeling paint. Products include PBS, Acu-Shield and a combination of PrepLESS Primer and “Your Last Coat”. PBS is described on Page 2.</p> <p><b>Acu-Shield Elastomeric Roof Coating</b> <a href="http://www.acsiusa.com/specifications.php">http://www.acsiusa.com/specifications.php</a></p> <p><b>PrepLESS Primer and “Your Last Coat”</b> See <a href="http://www.encasement.com/site/Products/PrepLESS-Primer.html">www.encasement.com/site/Products/PrepLESS-Primer.html</a> and</p> <p><b>Your Last Coat at:</b> <a href="http://www.encasement.com/site/Products/Your-Last-Coat.html">www.encasement.com/site/Products/Your-Last-Coat.html</a></p>	<p>Results of the testing revealed the <b>PBS</b> was the best product followed by the <b>Acu-Shield</b>, which wasn’t quite as durable and long-lasting, but appears more cost-effective. The other products did not perform as well. <b>(Contact Paula Kirk at (865) 241-2259 for more info.)</b></p> <p>Used to seal roofs, asphalt, concrete, wood, or any rust-free metal surface.</p> <p>Designed for hazardous material abatement industry. Known as a bridging encapsulant for asbestos and lead-based paint.</p> <p>Forms a water-proof membrane when applied over PrepLESS Primer</p> <p>LeadLock is another sealant used to coat lead-based paint</p>	 <p>Manufacturer recommends that surface should be clean, dry and free of oil, grease or dirt. Any existing coating must be checked for good adhesion and any loose adhered coating must be removed.</p> <p>PrepLESS Primer is applied at low pressure to prevent release of fibers or dust.</p> <p>Manufacturer recommends the surface be clean, dry, and free of dirt, grease, or oil.</p>
<p><b>Concrete Floor Coatings</b></p> <p>One manufacturer is Garon Products Inc at <a href="http://www.garonproducts.com">www.garonproducts.com</a></p> <p>Product names include <b>“Pour-n-Walk, Tigershield, Tigrerbond, Tigerskin and Tigertred”</b>.</p>	<p>Used to seal concrete floors</p> <p>Recommend searching Internet for “Concrete Floor Coatings” to find information</p>	<p>Can be applied up to 1/8” thick on one pass. Easily applied by squeegee.</p>
<p>3M <b>FireDam Spray 200</b>  <a href="http://www.3m.com/firestop">www.3m.com/firestop</a> (800) 328-1687</p>	<p>Normally used to seal building joints to prevent the spread of fire. Water-based coating forms a highly elastic flexible seal. Used at other DOE Sites as a fixative for contamination control.</p>	<p>Apply with airless sprayer. Quick drying. Cost is about \$200 for 5 gallon container.</p>
<p><b>Aeroseal Sealant</b>  <a href="http://www.aeroseal.com">http://www.aeroseal.com</a> <a href="http://1.usa.gov/tJYa2X">http://1.usa.gov/tJYa2X</a>  (877) 349-3828</p>	<p>Used to seal leaks in vent systems. Not designed as a fixative that will fix contaminants in the system.</p>	<p>Applied as an aerosol. Particles coagulate at a leak and eventually plug the opening. Will seal holes up to 5/8” in diameter. Use on low pressure systems only.</p>
<p>Epitor <a href="http://www.epitorinc.com">www.epitorinc.com</a> <b>RC-8 Rad Clean</b></p>	<p>Clear to pink color with slight sweet to no odor.</p>	<p>General purpose decon agent used where chelating agents are prohibited.</p>

## Contamination Control Fixative List

Rev 17 June 2012

<p>Epitor  <a href="http://www.epitorinc.com">www.epitorinc.com</a>  <b>RC-10 Rad Clean</b></p>	<p>Clear to pink color with slight sweet to no odor</p>	<p>Stronger version of RC-8 used for heavy-duty applications on surfaces with oil or grease.</p>
<p>International Coating and Chemical Co.  <a href="http://www.poxycoat.com/products.asp">http://www.poxycoat.com/products.asp</a>  <b>Poxy Coat II and other Poxy Coat Products</b></p>	<p>One part enamel paint used to fix contamination. Applies well to paint and metal surfaces.</p>	<p>Used extensively at the Savannah River DOE Site.</p>
<p>Foster Chil-Lock          Asbestos Removal Agent          Cp-240</p>	<p>Water-based, fire-retardant polymeric asbestos removal agent and post removal sealer. Designed to mist, lock-down seal loose fibers.</p>	<p>See <a href="http://www.fosterproducts.com/default.aspx?PageID=details&amp;pid=155">http://www.fosterproducts.com/default.aspx?PageID=details&amp;pid=155</a> for Product Data Sheet and MSDS</p>
<p>M2 Polymer Technologies Inc          Sell Absorbents and Waste Treatment Products</p>	<p><b>Waste Lock 770</b> Granular product  <b>Waste Lock Superabsorbent Socks</b></p>	<p>See <a href="http://www.m2polymer.com">www.m2polymer.com</a></p>

## Contamination Control Fixative List

Rev 17 June 2012

In addition to the Table above, there are several websites that contain information about using fixatives.

1. Underwater Coatings for Contamination Control;  
<http://www.inl.gov/technicalpublications/Documents/3169836.pdf>
2. Technology Assessment of Dust Suppression Techniques Applied During Structural Demolition  
<http://www.osti.gov/bridge/servlets/purl/955-qPDW72/webviewable/955.pdf>
3. Stabilization of Residue Plutonium in L-9 Hood in Product Removal of PUREX with Polymeric Barrier System  
<http://www.osti.gov/bridge/servlets/purl/657346-Szs15J/webviewable/657346.PDF>
4. Modern Strippable Coating Methods <http://www.wmsym.org/abstracts/pdfs/5163.pdf>
5. Comparison of Underwater Coatings; <http://www.inl.gov/technicalpublications/Documents/3169797.pdf> or <http://www.inl.gov/technicalpublications/Documents/3169836.pdf>
6. Demolition of Hanford's 232-Z Waste Incineration Facility: <http://www.osti.gov/bridge/servlets/purl/896208-x127XB/>
7. Open Air Demolition of Facilities Highly Contaminated with Plutonium:  
<http://www.osti.gov/bridge/servlets/purl/908296-AyOm2A/>
8. Decon Techniques and Fixative Coatings Evaluated in the Building 235-F Legacy Source Term Removal Study :  
<http://sti.srs.gov/fulltext/nmm2005123/nmm2005123.pdf>
9. Demolition of Hanford's 233-S Plutonium Concentration Facility:  
<http://www5.hanford.gov/pdwdocs/fsd0001/osti/2004/I0043159.pdf>
10. Building 233-S Demolition <http://www5.hanford.gov/pdwdocs/fsd0001/osti/2004/I0044820.pdf>
11. Polyurea Coatings for Waste Containers  
[http://www.osti.gov/bridge/product.biblio.jsp?query\\_id=1&page=0&osti\\_id=826051](http://www.osti.gov/bridge/product.biblio.jsp?query_id=1&page=0&osti_id=826051)
12. Using Molten Wax as a Fixative <http://pages.prodigy.net/cartertech/>
13. Tests Conducted with Strippable Coatings  
<http://www.osti.gov/bridge/servlets/purl/11008-trO8ph/webviewable/11008.PDF>
14. Effectiveness of Road Dust Suppressants  
<http://www.mountain-plains.org/pubs/html/mpc-94-28/>
15. Testing Polyurea for Tank Farms  
<http://www5.hanford.gov/pdwdocs/fsd0001/osti/2001/I0006363.pdf>
16. Rocky Flats Waste Shipments using Polyurea  
<http://www.wmsym.org/abstracts/2003/pdfs/169.pdf>
17. Polyurea Packaging <http://www.wmsym.org/abstracts/2003/pdfs/528.pdf>
18. Use of PBS to Stabilize Pu Gloveboxes at PUREX  
<http://www.osti.gov/bridge/servlets/purl/657346-Szs15J/webviewable/657346.PDF>

## Contamination Control Fixative List

Rev 17 June 2012

19. Mitigation of Fugitive Emissions During Building D&D (Discusses Best Available Strategies & Technologies for Minimizing Radioactive Emissions during D&D of 5 Buildings at Mound.  
[http://www.ohio.doe.gov/oh\\_seb/docs/MoundTechSolWorkShopDraft6.pdf](http://www.ohio.doe.gov/oh_seb/docs/MoundTechSolWorkShopDraft6.pdf)
20. Concrete Dust Suppression System  
[http://www.osti.gov/bridge/product.biblio.jsp?query\\_id=3&page=0&osti\\_id=7505](http://www.osti.gov/bridge/product.biblio.jsp?query_id=3&page=0&osti_id=7505)
21. Controlling Beryllium Contaminated Material & Equipment for Building 9201-5 Legacy Material Disposition  
[http://www.osti.gov/bridge/product.biblio.jsp?query\\_id=0&page=0&osti\\_id=1009244&Row=10&formname=searchform](http://www.osti.gov/bridge/product.biblio.jsp?query_id=0&page=0&osti_id=1009244&Row=10&formname=searchform)
22. Mechanical Demolition of Buildings with Concrete Asbestos Board Siding: Methodology, Precautions, and results at the Hanford Central Plateau.  
[http://www.osti.gov/bridge/product.biblio.jsp?query\\_id=1&page=0&osti\\_id=1035197&Row=8&formname=searchform](http://www.osti.gov/bridge/product.biblio.jsp?query_id=1&page=0&osti_id=1035197&Row=8&formname=searchform)