



**IT CORPORATION**  
A Member of The IT Group

***WORK PLAN***

***FOR***

***TEST CLEANING OF FORMER PCB CONTAMINATED  
TRANSFORMER PLATFORMS***

Submitted to:  
Lockheed Martin Control Systems  
Johnson City, New York

Submitted by:  
IT Corporation  
200 Horizon Boulevard  
Trenton, NJ 08691-1904

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IT Project No. 808348  
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# ***1.0 INTRODUCTION***

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IT Corporation (IT) has prepared the following Work Plan for Lockheed Martin Control Systems (LMCS) for the test cleaning of the PCB contaminated former transformer platforms and adjacent surfaces located in Lockheed Martin's Johnson City Facility.

All work will be performed in accordance with this work plan, approved changes, and our Site Specific Health and Safety Plan, amended to include this new scope of work.

Previous sampling investigations have indicated that PCB contamination is present at and adjacent to 19 former transformer areas. Areas of contamination include the wooden flooring, cross beams, trusses, catwalk flooring, and misc. items located directly under the platform.

The goals of the pilot-scale decontamination demonstration are as follows:

- Investigate various PCB decontamination technologies and their ability to meet TSCA cleanup levels
- Evaluate and determine containment and logistical requirements that will need to be implemented in full-scale decontamination.
- Develop an accurate cost estimate to decontaminate the areas of contamination.

This test cleaning will assist LMCS in evaluating cleanup levels and different approaches for the full-scale project as well as provide potential contractors valuable information in developing approaches and cost estimates.

## 2.0 *SCOPE OF WORK*

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The following scope of work will be performed during the implementation of the test-cleaning project:

- Installation of a full containment poly system underneath the platform that will contain all dirt, debris, and cleaning solutions generated during the test cleaning.
- The raising and temporary supporting from above all items sitting on the platform that cannot be temporary relocated.
- The vacuuming of all surfaces to remove all free dirt and debris.
- The removal of the platform flooring.
- The removal of the cross braces.
- The contaminated members of the trusses will be cleaned using two different PCB cleaning solutions.
- Wipe samples will be obtained from all cleaned areas to determine cleaning efficiency and contaminant reduction.
- Re-cleaning will be performed in areas that did not meet the cleanup level after the first cleaning
- A fireproof coating will be applied to the cleaned surfaces.
- IT will clean the removed platform flooring and bracing using the two products to generate additional data that will be used to evaluate the product's performance.
- New braces and platform flooring will be installed.
- The containment structure will be dismantled and all materials generated will be prepared for disposal.
- A final report will be prepared documenting all activities and results.

## **3.0 TECHNICAL APPROACH**

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The following sections describe IT's approach in completing the work activities listed in Section 2.0.

### **3.1 PLATFORM SELECTION**

Platform 8 has been selected to perform the testing cleaning on. It was selected after an evaluation of Phase 2 sample results was completed. The selection of the platform was determined on its contamination levels, relative ease of access, and expected lack of impact to facility operations. Platform 8 has a wide range of contamination that will allow us to experiment with different decontamination techniques. Its relative ease of access will permit us to develop containment and access techniques that can later be enhanced to use on the more difficult areas.

### **3.2 MOBILIZATION**

IT will mobilize our personnel, equipment, and materials from one of our nearby resource centers. Nearby centers are Buffalo, NY, Latham, NY, and Trenton, NJ. All employees will have up to date training and medical approvals. If new to the Johnson City facility, they will receive site specific training prior to performing any work. IT will provide to LMCS a list of all new employees assigned to the job with their birthdays, social security number, and nationality prior to mobilization.

### **3.3 SITE SETUP**

IT will require several areas where we can stage and or work within the main floor of the facility. These areas will be jointly selected by LMCS and IT so that there are minimal impacts (if any) to the facility operations. Descriptions of these areas are:

- *Clean Staging Area* – A place where clean materials that cannot be kept upstairs can be stored at for a short time. One example is the new wood that will be installed on the platform.
- *Contaminated Storage Area* – A roll off box will need to be staged on-site where contaminated material and PPE can be placed. The rolloff will be tarped at all times when not in use.
- *Lower Cleaning Area* – An area on the main floor that can be secured so that IT can decontaminate the platform flooring and bracing.
- *Small Container Storage Area* – IT will require an area to store our cleaning agents and sampling materials when not in use.
- *Liquid Storage Area* – IT expects to generate several hundred gallons of rinseate from cleaning the trusses. This water will be stored in a 500-gallon poly tank.

In addition to the above IT will store our small supplies and PPE in the abandoned upstairs lavatory at the top of the stairs. Transition zones and contamination reduction areas will be created to prevent the migration of PCB contamination from the work area.



### 3.4 PLATFORM AREA SETUP

Prior to any work being performed, the platform will be barricaded with banner guard and signs to indicate that the area is under remediation. The catwalk on both sides of the platform will be blocked preventing access. Temporary lighting will be installed to adequately light the work area. Electrical equipment that cannot be moved will be temporary supported to the ceiling structure with cables and eye bolts to allow the removal of the wooden platform underneath. IT will work closely with LMCS operations to ensure that this is done safely and does not impact facility operations.

Reinforced poly sheeting will be draped underneath the platform from one end to the other creating a containment bowl. The center of the bowl will be funneled into a 500-gallon poly tank located on the main floor. This will collect all dirt, debris, and rinsate in the poly tank and prevent spillage. This collection system will be inspected at the beginning of each work shift to make sure it is in good condition. Any tears or damaged sections will be repaired immediately.

A safety net will be installed underneath the work area for the safety of both the workers and people below the area. The net will be able to keep workers, tools, and material/debris from following all the way to the ground floor.

If possible, scaffolding may be installed to provide safe access to the areas requiring cleaning. The feasibility of using scaffolding will be determined once we mobilize.

### 3.5 HEPA VACUUMING

Once the containment and safety systems are in place the work area will be vacuumed to remove all dirt and debris. A HEPA Vacuum will be used to prevent cross contamination. All surfaces will be vacuumed.

### 3.6 REMOVAL OF THE PLATFORM BOARDS AND JOISTS

After the above collection system is in place IT will begin removing the platform flooring and joists. Each board will be removed, nails removed or bent into the board, and wrapped in plastic. The board will then be transferred to the end of the catwalk where it will be lowered to the main floor using a hoist. The boards will be temporary stored in a location identified by LMCS.

### 3.7 TRUSS CLEANING

The contaminated trusses and other items below the platform will be cleaned using one of the two identified cleaners; TechXtract and Pipe-MetalX. Each cleaner will be used on one half of the area. At the end of each cleaning cycle samples will be obtained to document the contamination reduction. Cleaning will continue until we have achieved <10ug/100cm<sup>2</sup> or until it is determined that the cleaning is no longer effective in reducing the contamination.

We will follow all manufacture instructions (located in Appendix A) when using these products.



Generally, the product will be applied on the surface with a manual sprayer and allowed to soak in to the wood. The material will then be rinsed off using a water spray. All rinsate will be collected in the containment system and funneled to the 500-gallon poly tank.

### **3.8 TRUSS SAMPLING**

Confirmation sampling will be performed after each cleaning cycle to determine how effective the cleaning is. Initially, the samples will be taken in areas where known high levels of contamination are generally located. Once these areas are found to be clean (or when no further contamination reduction is encountered additional samples will be taken on other sections of the trusses to ensure that all the contamination has been removed.

Core samples will also be taken at the hottest locations of the trusses to determine if any internal contamination remains after the surface has been cleaned.

### **3.9 FIREPROOFING APPLICATION**

Once the trusses have been cleaned a fire retardant product will be sprayed on the trusses. The actual product that will be used is still being investigated. LMCS will approve the product prior to it being used. The product will be applied following all manufacturer recommendations.

### **3.10 INSTALLING NEW PLATFORM**

IT will raise the new timber joists and platform flooring to the catwalk using the hoist. The joists and flooring will be installed over the truss systems. All guardrails and protective devices will be put back on. Any equipment relocated or temporary supported from the ceiling will be put back in place.

### **3.11 FINAL CLEANUP**

After the work is complete on the platform the containment system will be dismantled and all barricades removed. All lighting, tools, and equipment will be removed from the work area.

### **3.12 PLATFORM FLOORING AND JOIST CLEANING**

During the actual remediation it will most likely be cost effective to dispose the contaminated flooring and joists instead of trying to clean and reuse them. However, during this test cleaning operation IT will clean the flooring and joists to collect additional data.

A decontamination area will be set up using reinforced poly to contain over spray. The wrapped boards will be unwrapped, pre-sampled, and cleaned using one of the two cleaning reagents. Post samples will be obtained to determine effectiveness. The boards will be marked so that additional cleaning cycles can be performed, if needed, based on the results of the samples. Core samples will also be obtained to determine



the amount, if any, of remaining subsurface contamination after the surface has been cleaned.

At the end of the cleaning the boards will be re-wrapped and placed in a roll off box for disposal.

### **3.13 TRANSPORTATION AND DISPOSAL**

Representative samples of the water and solid debris (wood, PPE, etc.) will be collected and TCLP analysis performed to determine the waste classification for disposal. IT will work with LMCS to arrange for the proper disposal of these materials using LMCS approved facilities.

### **3.14 FINAL REPORT**

During the demonstration IT will document all the activities and collect the following data:

- Manpower requirements for each activity.
- Ease of application and the ability to contain the product and reinstate.
- Amount of product required per application.
- Contaminant reduction per application

IT will prepare a final report that will provide all the above information, the results of all the sampling and analysis performed, and the results of each PCB cleaning product. The report will also contain "Lessons Learned" during the demonstration and propose enhanced approaches to anticipated areas of concern. The cost summary section can be used to estimate the cost of the full decontamination.

This report will assist LMCS in evaluating cleanup levels and different approaches for the full-scale project as well as provide potential contractors valuable information in developing approaches and cost estimates.



## **4.0 SCHEDULE**

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It anticipates this project to take approximately 15 days working 8 hours a day, five days a week. The majority of the work will be performed during the second shift. The actual work hours will be approved by LMCS. Some deliveries and minor work may need to be made during the first shift.

***APPENDIX A***

***– PCB EXTRACTION SOLUTIONS DATA***

**MATERIAL SAFETY DATA SHEET**

IDENTITY (As Used on Label and List)

TECHXTRACT® 0100 LIQUID  
INDUSTRIAL CLEANER

**ESH APPROVED**  
9-28-00 P.B.S.

**SECTION I**

<b>Manufacturer's Name</b>	<b>Emergency Telephone Number</b>
ACTIVE ENVIRONMENTAL TECHNOLOGIES, INC.	CHEMTREC (800) 424-9300
<b>Address</b>	<b>Telephone Number for Information</b>
40 HIGH STREET	609-702-1500
SUITE 100	<b>Date Prepared</b> <b>Revised</b>
MT. HOLLY, NEW JERSEY 08060	02/10/97                                  02/17/00
	<b>Signature of Preparer (Optional)</b>

**SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

The product is a chemical mixture. The exact composition is proprietary, trade secret information (29 CFR 1910.12 (i)).

Hazardous Components	CAS #	OSHA PEL	ACGIH TLV	SARA 313	%
Ethylene glycol monobutyl ether	111-76-2	25 ppm (skin)	25 ppm (skin)	Yes	5-15
Isopropanol	67-63-0	400 ppm	400 ppm	-	0-2%
Sodium hydroxide	1310-73-2	2.0 mg/m <sup>3</sup>	2.0 mg/m <sup>3</sup>	Yes	1-5%
Other emulsifiers, surfactants, organic sequestrants, and water					

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

<b>Boiling Point</b> Approx. 212° F.	<b>Specific Gravity (H<sub>2</sub>O = 1)</b> 1.0366
<b>Vapor Pressure (psia @ 100 Deg. F.)</b> 0.70 psia	<b>Melting Point</b> Not Applicable
<b>Vapor Density (Air = 1)</b> Same as Water	<b>Evaporation Rate</b> (Butyl Acetate = 1)    Same as Water
<b>Solubility in Water</b> Mostly soluble - form emulsion	
<b>Appearance and Odor</b> Blue cloudy emulsion, slight ammoniacal odor. pH = 12.5	

Active Environmental Technologies, Inc has been issued U.S. Patents 5,421,906, 5,512,202, 5,728,660, 5,821,211, 5,961,736 and EU Patent 0693977 for the TECHXTRACT® technology. Other U.S. and international patents are pending.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

<b>Flash Point (Method Used)</b>	<b>Flammable Limits</b>	<b>LEL</b>	<b>UEL</b>
Method 1010, Closed cup	> 200° F.	Unknown	Unknown

**Extinguishing Media**

N/A

**Special Fire Fighting Procedures**

N/A

**Unusual Fire and Explosion Hazards**

N/A

**SECTION V - REACTIVITY DATA**

<b>Stability</b>	Unstable		Conditions to Avoid
	Stable	X	Heat and poor ventilation

**Incompatibility (Materials to Avoid)**

Strong oxidizers. Will react slowly with aluminum, copper, brass.

**Hazardous Decomposition or Byproducts**

Incomplete combustion may form carbon monoxide

<b>Hazardous Polymerization</b>	May Occur		Conditions to Avoid
	Will Not Occur	X	Flame and high temperatures

**SECTION VI - HEALTH HAZARD DATA**

<b>Route(s) of Entry:</b>	<b>Inhalation?</b>	<b>Skin?</b>	<b>Ingestion?</b>
	Yes	Yes	Yes

**Health Hazards (Acute and Chronic)**

High pH may cause irritation to skin or respiratory system

<b>Carcinogenicity:</b>	<b>NTP?</b>	<b>IARC Monographs?</b>	<b>OSHA Regulated?</b>
None known			

**Signs and Symptoms of Exposure**

Difficulty breathing, redness of skin, nausea

**Medical Conditions Generally Aggravated by Exposure**

Breathing problems

**Emergency and First Aid Procedures**

Wash with soap and water. Remove from exposure area.

If ingested, see a physician.

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**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE****Steps to be taken in case material is released or spilled**

Wash down with copious quantities of water. Pond if possible.

**Waste Disposal Method**

Vacuum up and dispose of in accordance with Local, State, and Federal regulations.

Disposal of spent solutions must consider any contaminants that have been extracted.

**Precautions to be taken in Handling and Storing**

Wear nitrile gloves and face shield or safety goggles. Wear respirator if vapors are involved.

Store at temperatures between 40°F and 100°F.

Store in plastic (HDPE) or steel container.

**Other Precautions**

Avoid eye contact.

**SECTION VIII - CONTROL MEASURES****Respiratory Protection (Specific Type)**

None required (Half-face or full-face respirator optional)

Ventilation	Local Exhaust Maintain good ventilation	Special Not applicable
	Mechanical (General) Not applicable	Other Not applicable
Protective Gloves Nitrile	Eye Protection Goggles or Face Shield	

**Other Protective Clothing or Equipment**

Additional protective clothing for splash protection (e.g., Plastic Apron, Saranex® or Tyvek® suit, shoe cover respirator) may be required depending on contaminants and working conditions. Consult with local safe representative(s).

**Work/Hygienic Practices**

Wash hands before eating or smoking.

**SECTION IX - NFPA RATINGS**

Health - 1

Flammability - 1

Reactivity - 1

Special - Do not mix with acids

**MATERIAL SAFETY DATA SHEET**

IDENTITY (As Used on Label and List)

TECHXTRACT® 0200 LIQUID  
INDUSTRIAL CLEANER

**ESH APPROVED**  
9-28-00 P.B.S.

**SECTION I**

<b>Manufacturer's Name</b>	<b>Emergency Telephone Number</b>
Active Environmental Technologies, Inc	CHEMTREC (800) 424-9300
<b>Address</b>	<b>Telephone Number for Information</b>
40 High Street, Suite 100	609/702-1500
Mt. Holly, New Jersey 08060	<b>Date Prepared</b> <b>Revised</b>
	04/29/98                      02/17/00
	<b>Signature of Preparer (Optional)</b>

**SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

The product is a chemical mixture. The exact composition is proprietary, trade secret information (29 CFR 1910.12 (i)).

Hazardous Components	CAS #	OSHA PEL	ACGIH TLV	SARA 313	%
Hydrofluoric Acid	7664-39-3	3.0 ppm	2.5 ppm	Yes	1%
Citric acid	77-92-9	5.0 mg/m <sup>3</sup>	5.0 mg/m <sup>3</sup>	-	1-3%
Phosphoric Acid	7664-38-2	1.0 mg/m <sup>3</sup>	1.0 mg/m <sup>3</sup>	Yes	1%

Surfactants, buffers, hydrotroping agents, and water

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

<b>Boiling Point</b> Approx. 212° F.	<b>Specific Gravity (H<sub>2</sub>O = 1)</b> 1.0711
<b>Vapor Pressure (psia @ 100 Deg. F.)</b> 0.8 psia	<b>Melting Point</b> Not Applicable
<b>Vapor Density (Air = 1)</b> Same as Water	<b>Evaporation Rate</b> (Butyl Acetate = 1)      Same as Water
<b>Solubility in Water</b> Soluble	
<b>Appearance and Odor</b> Nearly clear, slight citrus odor. pH = 2.5	

Active Environmental Technologies, Inc has been issued U.S. Patents 5,421,906, 5,512,202, 5,728,660, 5,821,211, 5,961,736 and EU Patent 0693977 the TECHXTRACT® technology. Other U.S. and international patents are pending.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

Flash Point (Method Used)	Flammable Limits	LEL	UEL
ASTM D-93 P.M	> 210° F.	Unknown	Unknown

**Extinguishing Media**

Water

**Special Fire Fighting Procedures**

Wash spills with water spray. Fire will not occur unless water is evaporated off.

**Unusual Fire and Explosion Hazards**

The material is in a water matrix and has no unusual fire and explosion hazards.

**SECTION V - REACTIVITY DATA**

Stability	Unstable		Conditions to Avoid
	Stable	X	Avoid contact with skin and eyes

**Incompatibility (Materials to Avoid)**

Strong oxidizing agents

**Hazardous Decomposition or Byproducts**

Incomplete combustion may form carbon monoxide

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	Flame and high temperature

**SECTION VI - HEALTH HAZARD DATA**

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	Yes	Yes

**Health Hazards (Acute and Chronic)**

Organic vapors may affect those with breathing problems.

Skin contact may cause dermatitis.

See a physician if ingested.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
None known			

**Signs and Symptoms of Exposure**

Shortness of breath. Skin irritation.

**Medical Conditions Generally Aggravated by Exposure**

Any breathing problems.

**Emergency and First Aid Procedures**

Wash skin with soap and water; flush eyes 15 minutes with water.

Contact physician if ingested.

**DO NOT INDUCE VOMITING.**

**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE****Steps to be Taken in Case Material is Released or Spilled**

Wash down with copious quantities of water. Pond if possible.

**Waste Disposal Method**

Vacuum up and dispose of in accordance with Local, State, and Federal authorities.

Disposal must consider any contaminants that have been extracted.

**Precautions to be Taken in Handling and Storing**

Wear nitrile gloves and safety goggles or face shield. Wear respirator if vapors are involved.

Store at temperatures between 40°F and 100°F.

Store in plastic (HDPE) container.

**Other Precautions**

Have water spray available. Keep away from open flame.

**SECTION VIII - CONTROL MEASURES****Respiratory Protection (Specific Type)**

None required (Half-face or full-face respirator optional)

Ventilation	Local Exhaust Maintain good ventilation	Special Not applicable
	Mechanical (General) Not applicable	Other Not applicable
Protective Gloves	Nitrile	Eye Protection Goggles or Face Shield

**Other Protective Clothing or Equipment**

Additional protective clothing for splash protection (e.g., Plastic Apron, Saranex® or Tyvek® suit, shoe cover, respirator) may be required depending on contaminants and working conditions. Consult with local safety representative(s).

**Work/Hygienic Practices**

Wash hands before eating or smoking.

**SECTION IX - NFPA RATINGS**

Health - 1

Flammability - 0

Reactivity - 1

Special - Do not mix with caustics

Active Environmental Technologies, Inc has been issued U.S. Patents 5,421,906, 5,512,202, 5,728,660, 5,821,211, 5,961,736 and EU Patent 0693977 for the TECHXTRACT® technology. Other U.S. and international patents are pending.



**MATERIAL SAFETY DATA SHEET**

IDENTITY (As Used on Label and List)

TECHXTRACT® 0300 LIQUID  
INDUSTRIAL CLEANER

**ESH APPROVED**  
9-28-09 P.B.S.

**SECTION I**

<b>Manufacturer's Name</b>	<b>Emergency Telephone Number</b>	
Active Environmental Technologies, Inc.	CHEMTREC (800) 424-9300	
<b>Address</b>	<b>Telephone Number for Information</b>	
40 High Street, Suite 100	609 / 702-1500	
Mt. Holly, New Jersey 08060	<b>Date Prepared</b>	<b>Revised</b>
	02/10/97	02/17/00
	<b>Signature of Preparer (Optional)</b>	

**SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

The product is a chemical mixture. The exact composition is proprietary trade secret information (29 CFR 1910.12 (i)).

Hazardous Components	CAS #	OSHA PEL	ACGIH TLV	SARA 313	%
Nitric acid	7697-37-2	2.0	2.0	Yes	1-5%
Chemical buffering agents and water					

The inorganic acid used in this product is highly buffered in order to reduce its corrosivity. TECHXTRACT® 03 Liquid Industrial Cleaner has been determined to be **NON-CORROSIVE**, based on DOT corrosion criteria (Protocol S9-D173/3.137). Documentation of this testing is available from Active Environmental Technologies upon request.

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

<b>Boiling Point</b> Approx. 212° F.	<b>Specific Gravity (H<sub>2</sub>O = 1)</b> 1.0719
<b>Vapor Pressure (psia @ 100 Deg. F.)</b> 0.5 psia	<b>Melting Point</b> Not Applicable
<b>Vapor Density (Air = 1)</b> Same as Water	<b>Evaporation Rate</b> (Butyl Acetate = 1) Same as Water
<b>Solubility in Water</b> Completely	
<b>Appearance and Odor</b> Nearly clear liquid, slight yellow tint, slight odor. pH = 0.96	

Active Environmental Technologies, Inc has been issued U.S. Patents 5,421,906, 5,512,202, 5,728,660, 5,821,211, 5,961,736 and EU Patent 0693977 f the TECHXTRACT® technology. Other U.S. and international patents are pending.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

<b>Flash Point (Method Used)</b>	<b>Flammable Limits</b>	<b>LEL</b>	<b>UEL</b>
ASTM D-93 P.M.	> 210° F.	Unknown	Unknown

**Extinguishing Media**

Not likely to burn - use water if it does.

**Special Fire Fighting Procedures**

Water spray. Use full rubberized suit and face mask.

**Unusual Fire and Explosion Hazards**

The solution is strongly acidic.

**SECTION V - REACTIVITY DATA**

<b>Stability</b>	Unstable		Conditions to Avoid
	Stable	X	Contact with skin

**Incompatibility (Materials to Avoid)**

Strongly alkaline materials.

**Hazardous Decomposition or Byproducts**

Hydrogen and hydrogen sulfide may be released from metals and metal sulfides.

<b>Hazardous Polymerization</b>	May Occur		Conditions to Avoid
	Will Not Occur	X	None

**SECTION VI - HEALTH HAZARD DATA**

<b>Route(s) of Entry:</b>	<b>Inhalation?</b>	<b>Skin?</b>	<b>Ingestion?</b>
	Yes	Yes	Yes

**Health Hazards (Acute and Chronic)**

May cause skin or respiratory irritation.

If ingested, seek a physician immediately.

<b>Carcinogenicity:</b>	<b>NTP?</b>	<b>IARC Monographs?</b>	<b>OSHA Regulated?</b>
None known			

**Signs and Symptoms of Exposure**

Skin irritation and nausea

**Medical Conditions Generally Aggravated by Exposure**

Dermatitis and breathing disorders.

**Emergency and First Aid Procedures**

Wash skin with soap and water, flush eyes 15 minutes with water.

See a physician immediately if ingested. DO NOT INDUCE VOMITING.

**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE****Steps to be Taken in Case Material is Released or Spilled**

Wash down with copious quantities of water. Pond if possible.

**Waste Disposal Method**

Vacuum up and dispose of in accordance with Local, State, and Federal authorities.

Disposal must consider any contaminants that have been extracted.

**Precautions to be Taken in Handling and Storing**

Wear nitrile gloves and safety goggles. Wear respirator if vapors are involved.

Store at temperatures between 40°F and 100°F.

Store in plastic (HDPE) container.

**Other Precautions**

Have water spray available. Keep away from open flame.

**SECTION VIII - CONTROL MEASURES****Respiratory Protection (Specific Type)**

None required (Half-face or full-face respirator optional)

Ventilation	Local Exhaust Maintain good ventilation	Special Not applicable
	Mechanical (General) Not applicable	Other Not applicable
Protective Gloves	Nitrile	Eye Protection Face Shield or Goggles

**Other Protective Clothing or Equipment**

Additional protective clothing for splash protection (e.g., Plastic Apron, Saranex® or Tyvek® suit, shoe cover) may be required depending on contaminants and working conditions. Consult with local safety representative(s).

**Work/Hygienic Practices**

Wash hands before eating or smoking.

**SECTION IX - NFPA RATINGS**

Health - 1

Flammability - 0

Reactivity - 1

Special - Do not mix with caustics



### PIPE X-METAL X

Pipe X-Metal X is designed to clean PCB contamination from all surfaces other than concrete and masonry products. It is also environmentally safe, non-flammable, non-toxic, non-corrosive and biodegradable. We realize that PCB contamination in pipe, machinery, electrical equipment, plastic and wooden surfaces is a major problem. Pipe X-Metal X is a solution for that problem. It can be used on the interior and exterior walls of pipe, metal tanks, metal buildings, inside and outside of machinery, truck beds and trailers, electrical equipment and any other surface that is contaminated. It will not harm rubber or other types of seals that may exist in tubing, pipe or machinery. Each application of Pipe X- Metal X achieves an average reduction rate of 95% of the contamination with a dwell time of only 15 minutes.

Safety is always a major concern. Pipe X- Metal X is an excellent alternative to the use of toxic and environmentally destructive chlorinated solvents. It is water soluble, non-hazardous and supports our commitment to non-hazardous solutions for environmental problems.

Pipe X-Metal X and PCB rinsate will attach themselves to carbon filters when run through these types of filtration systems.

.....

### PIPEX X - METAL X

- I. **PIPE X - Metal X is specifically formulated to clean metal, plastic and other surfaces except concrete. All sludge must be removed from the surface of the metal to be cleaned. Once this is accomplished, the following steps should be taken.**
- II. **Application Instructions are as follows:**
  - A. **Apply Pipe X-Metal X by spraying, painting, etc. so that the product comes in contact with all surfaces to be cleaned.**
  - B. **If possible, the surface should then be brushed to agitate the product to enhance cleaning.**
  - C. **Allow the material to be in contact with the surface to be cleaned for approximately 15 minutes. For highly contaminated surfaces allow a set time of 20 to 25 minutes.**
  - D. **Pipe X-Metal X may be removed with high pressure water or steam. If in an area where this is not possible, simply clean by applying water and wiping with absorbent cloths or wipe clean with water and cloths.**
  - E. **Effluent should be collected and disposed of in accordance with**

applicable State or Federal Regulations.

F. If more than one application is needed, repeat steps A. through E.

**Note:** For surfaces with minimum contamination levels Pipe X-Metal X may be diluted up to 5 to one with water.



[HOME](#)

[MSDS SHEET](#)

**ESH APPROVED**  
9-28-00 P.B.S.

*Request New  
MSDS.*

**MATERIAL SAFETY DATA SHEET**

**I Product: PIPE X- METAL X**  
**Description: Clear Liquid**  
**Manufacturer**  
**CHEMICAL SOLUTIONS INT'L. CORP.**  
**P.O. Box 891185**  
**Houston, TX 77289-1185**

**Date Prepared: July 1997**

**Emergency Telephone No.**  
**(281) 992-3031**  
**(800) 424-4804**

**II Health Hazard Data**

**HEALTH HAZARD (Acute & Chronic)**  
is a proprietary  
**SKIN:** Concentrate will dry out and chap sensitive  
contains small amounts of minerals  
skin as would detergent.  
**EYES:** May cause discomfort.  
handled accordingly.  
**INHALATION** of fumes may upset stomach.  
29 CFR XVIII-1900.1200 Section (i)

**SIGNS AND SYMPTOMS OF EXPOSURE**  
hazardous components under current OSHA

**SKIN:** Dryness, redness, chapping.  
**EYES:** Tearing, redness, blurred vision.  
and Precautions  
**INGESTION** may cause vomiting.  
**FIRST AID: EYES:** Flush 15 minutes with water. **SKIN:**  
**Practices:** Wear goggles or face shield. Rubber gloves.  
wash with soap & water. **INHALATION:** Move to fresh  
air. Apply artificial respiration if breathing has stopped.  
Wash after each shift. Remove and wash  
**INGESTION:** Do not induce vomiting. If any irritation  
contaminated clothing before re-use.  
persists, seek medical attention.

Long sleeved shirt buttoned at neck  
**III Precautions for Safe Handling & Use**  
desirable, rubber boots.

If material is spilled remove leaking package to safe area.  
Flush with water.  
**Disposal:** any approved method for dilute cleaner.  
Surfactants are highly biodegradable.  
and storage conditions.

oxidizing agents. Hazardous  
**IV Physical Data**  
- oxides of carbon.

pH.....10.5  
**Data**

**V Hazardous Ingredients**

**PIPE X - METAL X**  
formulations which  
and organics.  
This product should be  
Complies with OSHA  
"Trade Secrets".

Contains no  
definitions.

**VI Special Protection**

Hygienic

**Work Practices:**

**Other Protective Clothing:**

is

**VII Reactivity Data**

Stable under normal use

Incompatible with strong  
decomposition or byproducts

**VIII Fire and Explosion**

Solubility in water.....100%  
 Specific Gravity.....1.06  
 explosive.  
 Boiling Point.....2120 F  
 Vapor Pressure.....Same as water  
 Vapor Density (Air=1).....Same as water  
 Evaporation Rate (Butyl Acetane=1).....< 1  
 Not Necessary.  
 Appearance & Odor - Clear liquid with medium  
 Exhaust/Desirable.  
 viscosity and syntethic cleaner odor.

Not flammable or

**IX Control Measures**

**Respiratory Protection:**

**Ventilation: Local**

**Mechanical/Helpfull in congested area.**

**(Complies with OSHA 174,**

Sep. 1985)

ok  
 P.S.S.

✓  
**HMIS CODE: Health 1    Flammability 0    Reactivity 0    Personal  
 Protection B**



***APPENDIX B***

***– FIRE RETARDANT DATA***





## THERMO-LAG FIRE RETARDANT SUBLIMING COATINGS

**PRODUCT DESCRIPTION:**

**THERMO-LAG 220-1**

Water based coating with a flat matte finish. Easy clean up.

**THERMO-LAG 226**

Solvent based coating with a flat matte finish. Easy clean up.

**THERMO-LAG 227**

Solvent based CLEAR FINISH to enhance the beauty of natural wood grains. Low sheen semi-gloss.

**PACKAGED:**

55 gallon drums or 5 gallon pails.

**COLORS FOR THERMO-LAG 220-1 & 226:**

Antique White. Available in selective colors based on special order. (250 gallon minimum)

**TYPICAL USERS:**

- |                     |                    |
|---------------------|--------------------|
| Apartments          | Mobile Homes       |
| Building Materials  | Modular Housing    |
| Farms and Ranches   | Nursing Homes      |
| Government Agencies | Private Residences |
| Hospitals           | Railroads          |
| Hotels /Motels      | Retail Stores      |
| Industrial Plants   | Schools            |
| Livery Stables      | Supermarkets       |
| Manufacturers       | Warehouses         |

**COMPOSITION & PHYSICAL PROPERTIES:**

Property	THERMO-LAG 220-1	THERMO-LAG 226	THERMO-LAG 227
Solvent	Water	Toluene/Xylene	Toluene/Xylene
Solids % Vol.	44 Min.	49 Min.	49 Min.
Lbs./Gal.	10.5 ± 1.5	10.5 ± 1.5	10.5 ± 1.5
Flash Pt.	None	82°F	82°F
		(closed cup)	(closed cup)

# THERMO-LAG FIRE RETARDANT SUBLIMING COATINGS

**FIRE HAZARD CLASSIFICATION:**

THERMO-LAG has achieved outstanding Class A fire hazard classifications as tested by Underwriters laboratories in accordance with ASTM E-84 and approved by Factory Mutual Systems.

Surface	TYPE 220			TYPE 226		TYPE 227	
	Douglas Fir	Douglas Fir	Corrugated Fiber-board*	Douglas Fir	Douglas Fir	Douglas Fir	Douglas Fir
	Flame Spread	10	25	15	5	20	25
Fuel contributed	5	5	0	10	15	0	0
Smoke developed	0	30	30	20	10-45	40	40
Number of preliminary coats	None	None	None	None	None	None	None
Rate per coat (ft <sup>2</sup> /gal)	-	-	-	-	-	-	-
Number of fire retardant coats	2	2	2	2	2	2	2
Rate per coat (ft <sup>2</sup> /gal)	300	400	300	200	300	400	300
Number of overcoats	None	None	None	None	None	None	None
Rate per coat (ft <sup>2</sup> /gal)	-	-	-	-	-	-	-

**SPECIFICATIONS :**

**1.0 General Conditions**

**1.1 Scope:** The coating shall be applied to the combustible substrate to achieve the required flame spread rating.

**1.2 Surface Acceptability:** The coating shall be applied to surfaces which are clean, dry and free of foreign matter and which have been properly prepared for painting. Previously painted or primed surfaces shall be compatible with the coating.

**1.3 Delivery and Storage:** The ready-for-use coating shall be delivered to the job site in factory-sealed containers. The material shall be protected from freezing.

**1.4 Temperature and Ventilation:** The material shall be applied above 40°F. The area shall be well ventilated.

100 10 00 100 0700 THERMAL SCIENCE INC. THERMO-SCIENCE INC. THERMO-SCIENCE INC. 11.04

# THERMO-LAG FIRE RETARDANT SUBLIMING COATINGS

**Specifications (cont.):**

**2.0 Material**

**2.1 Fire Retardant**

- a. The fire retardant coating shall be THERMO-LAG as manufactured by Thermal Science Inc., 2200 Cassens Drive, Fenton, MO 63026. THERMO-LAG shall be delivered to the job site in the manufacturer's labeled and sealed containers.
- b. Tested in accord with ASTM E-84 procedures by the Underwriter's Laboratories or other approved testing organizations, the material meets the following standards:
  - Flame Spread
  - Fuel Contributed
  - Smoke Developed

**2.2 Sealer.** Porous wood shall be sealed with an approved wood sealer.

**3.0 Application and Workmanship**

**3.1 Application Procedure.** The manufacturer's recommended procedures shall be followed.

**3.2 Thickness -** Reference Underwriter's Laboratories or Factory Mutual ratings.

**3.3 Texture.** Spray application shall produce a smooth finish.

**3.4 Sample Application.** The applicator shall apply a sample section of the material for the architect's approval.

**MIXING:** Mix thoroughly prior to use.

**THINNERS:** Thinners are not recommended. However, should thinning be necessary for 220-1, use 1/4 pt. water per gallon. THERMO-LAG 226/227, use 1/4 pt. Toluene or Xylene per gallon.

**STORAGE:** Store above 32°F and below 100°F.

**METHOD OF APPLICATION:** Brush, rollers or spray (air or airless)

**TEMPERATURE:** The surface shall be above 40°F.

# THERMO-LAG FIRE RETARDANT SUBLIMING COATINGS

## RECOMMENDED SPRAY EQUIPMENT:

Use airless equipment such as Binks Super B or equivalent. A 0.026 inch tip size is suitable. 800-900 psi fluid pressure is recommended.

## CLEAN UP:

THERMO-LAG 220-1 - Water  
THERMO-LAG 226 - Toluene or Xylene  
THERMO-LAG 227 - Toluene or Xylene

The data, information and suggestions contained herein are true and reliable to the best of our knowledge. They are offered in good faith, but without guarantee, as conditions and methods of use of our products are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before committing to application and practice.

**MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: Thermo-Lag 220-1

DATE PRINTED: 6/1/00  
DATE REVISED: 5/30/00

**ESH APPROVED**  
9-28-00 P.B.S.

THERMAL SCIENCE, INC.  
2200 Cassens Dr.  
Fenton, MO 63026

PHONE: (314) 349-1233  
EMERGENCY PHONE: (314) 349-1267

**HMIS HAZARD RATINGS**

LEAST	0	HEALTH HAZARD	1
SLIGHT	1	FLAMMABILITY HAZARD	0
MODERATE	2	REACTIVITY HAZARD	0
HIGH	3	MAXIMUM PERSONAL PROTECTION	8
EXTREME	4		

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NAME: Thermo-Lag 220-1 D.O.T. HAZARD CLASS: none  
 PRODUCT CLASS: Latex Fire Retardant Coating D.O.T. Shipping Name: Cold Water Paint  
 D.O.T. UN Number:

**SECTION II - PHYSICAL DATA**

APPEARANCE AND ODOR: White viscous liquid, ammoniacal odor

BOILING POINT ( at 760 mm Hg ) : 220-240 F SPECIFIC GRAVITY (water = 1): 1.3  
 VAPOR PRESSURE ( at 20°C or 68°F ): nil WEIGHT PER GALLON ( lbs. ): 11  
 EVAPORATION RATE ( ether = 1 ) : much slower PERCENT VOLATILES BY VOLUME: 56  
 VAPOR DENSITY ( air = 1 ) : 0.6 SOLUBILITY IN WATER: Very  
 Volatile Organic Content (VOC) : 1.03 lb/gal

**SECTION III - HAZARDOUS COMPONENTS**

TRADE NAME	CAS #	PERCENT BY VOLUME	OCCUPATIONAL EXPOSURE LIMITS	
			OSHA PEL	ACGIH TLV
Dibutyl phthalate	84-74-2	1 %	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Vinyl Acetate	108-05-4	0.07 %		10 ppm 30 mg/m <sup>3</sup>
Ethylene Glycol	107-21-1	8 %		50 ppm
†Titanium Dioxide (total dust)	13463-67-7	25 %	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
(respirable dust)			5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>

\* Indicates toxic chemicals subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372  
 †Hazard for this material is as a dust only. This hazard is eliminated in liquid paints. Dust hazard is applicable if dried coating is subjected to grinding and/or sanding operations.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION OSHA : Non-combustible DOT: Non-combustible  
 FLASH POINT : None TEST METHOD:

FLAMMABILITY LIMITS LEL: Not applicable UEL: Not applicable

**MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: ThermoLag 220-1

**EXTINGUISHING MEDIA :** Non-flammable (aqueous emulsion). After water evaporates, remaining material will burn. Use alcohol type or all-purpose foam for large fires. Use CO<sub>2</sub> or dry chemical media for small fires.

**SPECIAL FIRE FIGHTING PROCEDURES :** Wet Product will not burn but will smoke and spatter if exposed to flames. Firefighters must use self-contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS :** Sealed containers may rupture if overheated. Cool with water spray.

**HAZARDOUS DECOMPOSITION PRODUCTS :** Thermal oxidative decomposition can produce toxic gases, including oxides of nitrogen and carbon monoxide.

**SECTION V - REACTIVITY DATA**

STABILITY	UNSTABLE STABLE	X	CONDITIONS TO AVOID: Not applicable
-----------	--------------------	---	-------------------------------------

INCOMPATIBILITY (MATERIALS TO AVOID) : Strong Oxidizers, Strong Bases

HAZARDOUS POLYMERIZATION	MAY OCCUR WILL NOT OCCUR	X	CONDITIONS TO AVOID : Not applicable
-----------------------------	-----------------------------	---	--------------------------------------

**SECTION VI - HEALTH HAZARD DATA**

**EFFECTS OF OVEREXPOSURE :**

Eyes: Direct contact with product may result in eye irritation.

Skin: Prolonged or repeated contact with product may cause skin irritation.

Breathing: Excessive inhalation can cause irritation of the mucous membranes of the nose, throat and respiratory tract, headache and nausea.

Swallowing: Excessive exposure may cause central nervous system effects, cardio-pulmonary effects, and kidney failure.

**FIRST AID PROCEDURES :**

If in Eyes: Flush with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

If on Skin: Thoroughly wash exposed area with soap and water. Remove and wash contaminated clothing before reuse. Consult medical personnel if swelling or reddening occurs.

If Swallowed: If conscious, give two glasses of water to drink. Get immediate medical attention.

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED :** Keep unnecessary people away. Contain spill with inert material (sand, earth, etc.) and transfer the material to containers for recovery or disposal. Keep spill out of sewers and open bodies of water. Floors may be slippery, care should be exercised to avoid falls.

**WASTE DISPOSAL METHOD :** Burn in adequate incinerator or bury in an approved landfill

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**VENTILATION TYPE :** Mechanical local exhaust at point of mist release is preferred.

**RESPIRATORY PROTECTION :** None required if good ventilation is maintained. Otherwise wear MSHA/NIOSH approved respirator suitable for vapor, mist or dust concentrations encountered.

**PROTECTIVE GLOVES :** Impervious, cotton lined rubber      **EYE PROTECTION :** Safety glasses

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**MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: ThermoLag 220-1

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE :** Use only with adequate ventilation. Prevent prolonged breathing of vapor or mist. Prevent contact with eyes. Do not take internally. Keep out of the reach of children.

**STORAGE TEMPERATURE :** MAX 100 F MIN 32 F

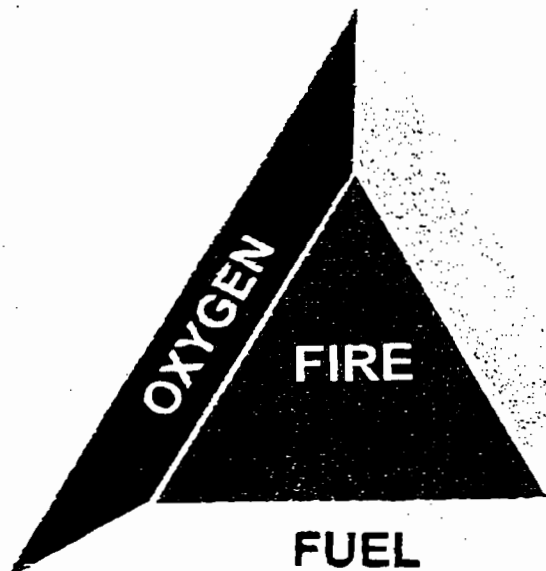
**OTHER PRECAUTIONS :**

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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. It is the user's responsibility to determine the suitability of this information for the adoption of the necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.

## HOW FLAME SAFE WORKS

Three components are necessary for fire: fuel, oxygen, and a source of ignition. Although you need to eliminate only one of these three components to extinguish a fire, FLAME SAFE products produce outstanding results by eliminating two of these components.



*The Fire Triangle*

FLAME SAFE treated products automatically react with fire or heat to convert combustible gases and tars to non combustible carbon char, nitrogen, and carbon dioxide. This chemical reaction substantially increases carbon char and creates an intumescent action, causing the surface to bubble-up and thereby creating a barrier between the fire and the treated material. The nitrogen produced as a by-product of the bubbling-up action displaces the oxygen, thus smothering the fire. The intumescent action separates the fuel from the source of ignition. This "double protection" is one reason only FLAME SAFE products are authorized to bear the FIREBUSTERS trademark.

FLAME SAFE treated materials produce significantly less smoke when exposed to fire. In many cases, smoke generation has been reduced by more than 50%, which is very important since smoke inhalation causes more deaths than fire.

---

## THE BEST FIRE INSURANCE IS PREVENTION

### **SAVES LIVES AND PROPERTY:**

You saw it demonstrated on TV's "That's Incredible!" Two wooden buildings, one treated inside and out with Flame Safe, the other was not. Each of the buildings were doused with five gallons of gasoline and set on fire. The untreated building burned to the ground in minutes. The building treated with Flame Safe did not burn down. The flaming gasoline scorched it, of course, but the flames did not spread. Once the gasoline burned itself out, the fire was out! THAT'S INCREDIBLE!

### **ENVIRONMENTALLY SAFE:**

Since Flame Safe Products are not an oil or solvent-based chemical, they are non-toxic as a liquid and remain that way - even after application of heat. It will not harm plants, shrubs, grass, trees, or animals which it may accidentally come in contact during application.

### **FLAME SAFE PROTECTS YOU FROM FIRE AND SMOKE:**

Materials treated with Flame Safe Products will significantly reduce the spread of flame and smoke generation. In many cases, smoke generation has been reduced by more than 50%, and that's important considering that smoke inhalation causes more deaths than fire, and in many cases more damage than fire. PREVENTION is the best fire insurance.

### **PRESERVATIVE:**

Flame Safe Products have preserving advantages as well as it's fire retardant qualities. Materials treated with Flame Safe provides protection from insects, rodents and certain types of bacteria. Tests conducted on Flame Safe Products have shown that it protects against termite infestation and kills existing termites.

### **QUICK AND EASY APPLICATION:**

Our professional can quickly and easily apply Flame Safe Products for you. It requires little material preparation. Once applied, Flame Safe Products require a 24-hour curing time before contact with water.



## FLAME SAFE - GENERAL SPECIFICATIONS

### **COLORLESS:**

Will not stain or discolor wood. Retains original color and qualities to allow flexibility of natural or decorative finishes.

### **ODORLESS:**

Allows use indoors. Does not require extensive ventilation. Suitable for application in existing, occupied areas as opposed to pre-treating.

### **NON-TOXIC:**

Can be used in habitable and food preparation areas. No restriction on use around people, plant, or animals.

### **WATER BASED:**

Contains no oil or petroleum base, thus providing more compatibility with larger variety of surfaces and materials.

### **WILL NOT SUPPORT FUNGI GROWTH:**

May be used in interior and exterior areas where high humidity is common.

### **RESISTANT TO INSECTS, RODENTS AND CERTAIN TYPES OF MOLD:**

Makes products suitable for use in remote areas, areas where perishables are stored. Allows use where insect and rodent treatments may be needed, but are not compatible with fire retardants.

### **CONTAINS NO ASBESTOS:**

Eliminates dependency on a currently banned product. Provides safety for applicators and users.

### **WILL NOT HARM PLANTS:**

Overspray will not harm vegetation thereby allowing use in residential areas, landscaped areas, agricultural areas and parks.

### **REQUIRES NO SPECIAL CUTTING TOOLS:**

Treated wood can be sawed, shaped, and planed without special carbide tipped blades. There is less expense involved in milling operations due to longer life of cutting blades. Field cutting is easier and less expensive. The milled surfaces are easily recoated.

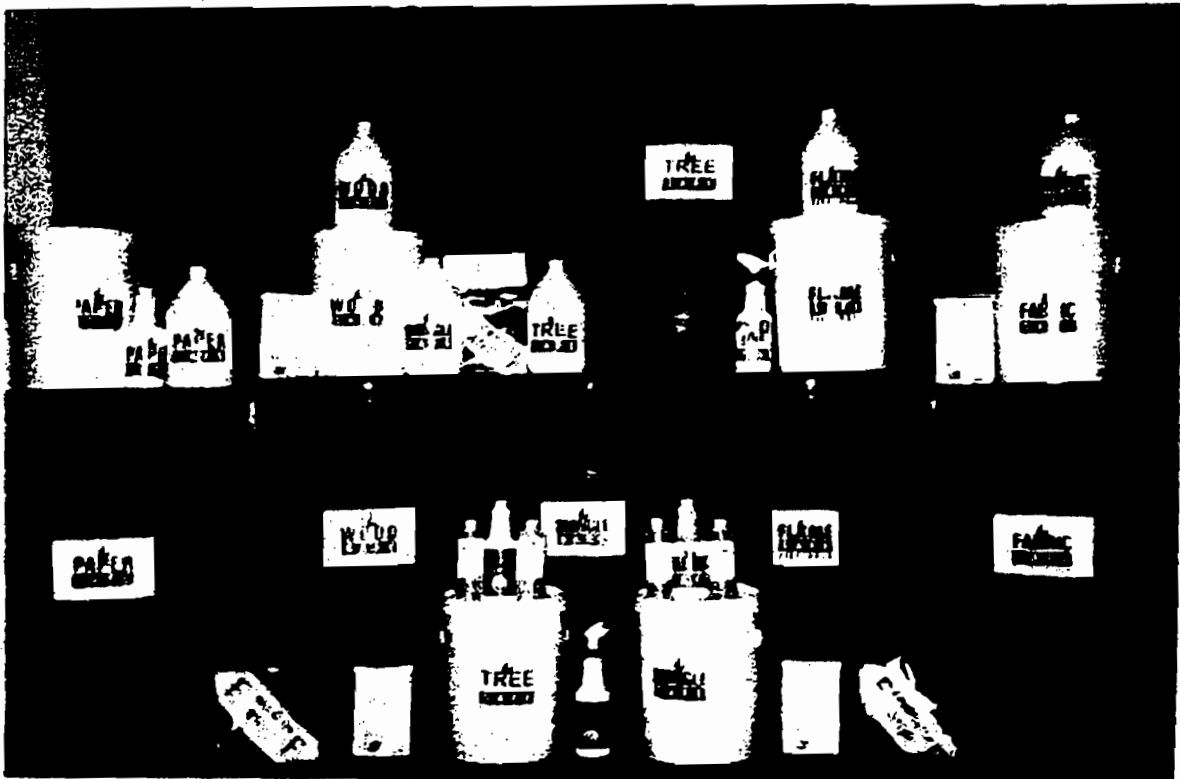
### **ADDS NO APPRECIABLE WEIGHT:**

Wood is not crystallized, made inflexible or weakened. Treated wood retains all structural strength and characteristics. No special allowances for weight, strength, or support need to be made.

### **TERMITE RESISTANT:**

Tests by the U.S. Forestry Service proved FLAME SAFE products, in most cases, will kill existing termites and repel new termites.

\*Fire Poly slightly toxic during application phase only.



# WOOD

# SAFE

## FIRE RETARDANT

UNDERWRITERS LABORATORIES INC.  
CLASSIFIED  
19P5  
FIRE RETARDANT COATING  
SURFACE BURNING CHARACTERISTICS OF APPLIED COATING

Surface	Douglas Fir
Flame Spread	35
Smoke developed	95
Number of preliminary coats	None
Rate per coat (ft <sup>2</sup> /gal)	--
Number of fire retardant coats	3
Rate per coat (ft <sup>2</sup> /gal)	330
Number of overcoats	None
Rate per coat (ft <sup>2</sup> /gal)	--
Flash point of liquid coating: Fire retarding coating - closed cup, no flash	



## WOOD SAFE TECHNICAL DATA (Interior/Exterior Class B Rating)

**PRODUCT DESCRIPTION:** Aqueous Based Resin

PRODUCT ANALYSIS			
Total Solids	31.5%	PH	4.6 - 5.2
Weight per gallon	9.40 lbs	Flash point	Non-flammable
Specific gravity	1.104	Color	Water clear at 78°F. - slight haze at 50°F. And lower
Volatility	Non-volatile	Solvents	Water (contains no petroleum or derivatives of petroleum.)
Anti-Fungus	Excellent resistance	Bacterial	Good resistance
Linear shrinkage	None	Moisture absorption	None
Corrosive	None	Toxic	None
Insects, rodents, aspergilli And other types of molds	Excellent resistance	Termites	Excellent resistance
Preservative for wood	Good	Not harmful to plants	

**RECOMMENDED USE:** Interior/Exterior Class B Rating (Flame spread 35)

**FLAME SAFE WOOD SAFE** is a fire retardant and wood preservative coating. It can be used on any type of wood or porous materials, such as:

Yellow Pine	Redwood	Cedar
Douglas Fir	Straw	Wall Coverings
Cellulose Materials	Blown Insulation	Corrugated Board

**ENVIRONMENTAL REGULATION:**

This product complies with U. S. Federal Regulations concerning the use of lead in paint and hydrocarbon emissions.



## QUICK REFERENCE FOR APPLYING WOOD SAFE

MATERIAL	APPLICATION	COVERAGE
Interior/Exterior Wood  Any type of soft woods such as: Yellow Pine, Douglas fir, cedar, SPF, redwood and textured plywood	Treat before, during or after construction  Be sure surface is clean and dry before treating.  Apply with sprayer head held at 8 to 12 Inches from surface.  Apply with brush or roller.  Treat all surface areas where possible.  Do not expose treated area to moisture for 24 hours.	Apply three (3) coats at 330 ft. per coat with the final coverage rate of 110 sq. ft. per gallon

### INTERIOR/EXTERIOR :

All surfaces to be treated must be clean and dry. Wood Safe is water based, clear liquid that becomes insoluble when dry. Wood Safe also acts as a preservative, waterproofing agent, and insect and mold inhibitor. If over-coating is intended, Wood Safe is an excellent primer for use under latex paints and allows a surface to be tinted with water based stains. **DO NOT DILUTE OR MIX WOOD SAFE WITH ANY OTHER PRODUCTS.** Avoid wasteful runs and dripping. It should be noted that unlike some products, materials treated with Wood Safe require no special cutting tools or special fasteners. Contact parts of any equipment should be stainless steel or plastic to prevent chemical reaction and breakdown. Storage may be done in polyethylene containers.

Wood Safe provides a structure with a long-term fire retardant protection.



## CAUTION:

Product must not freeze. It **MUST NOT** be thinned or diluted.

## OVERSPRAY:

The overspray will not harm plants or animals. Spills can be flushed with water. A rag wetted with bleach and water mix will clean up spotting.

## CLEAN UP PROCEDURE:

### Airless Equipment:

1. Run clear water through the system until retardant is flushed out. When minor sudsing on surface stops, the system is flushed.
2. Run bleach and water mix (1 part to 4 parts) through the spray system as solvent for cleaning and to remove any residue.
3. Repeat Step 1 if any foaming occurs in Step 2.
4. Lubricate system as specified by equipment manufacturer to combat rusting.

If two or more jobs are planned in the same day, the sprayer can be kept clean by running water through the system between jobs.

## SAFETY FIRST:

Use approved safety devices (ropes, belts, ridge hooks, ladders, etc.) when working on steep or high areas. Take **EXTREME CARE** not to step on wet treated area. Surface may be slick until dry.

It is a good practice to wear a respirator or mask and protect hands with rubber gloves when spraying any coating or chemical. When engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for solvent vapors. A dusk mask does not provide protection against vapors.

If eye contact occurs, flood with water for fifteen (15) minutes and call a physician. **KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.**



**ESH APPROVED**  
*9-28-00 P.B.S.*

**MATERIAL SAFETY DATA SHEET**

**Manufacturer's Name:**

Flame Safe Chemical Corporation  
 2853 Warfield Avenue  
 Fort Worth, Texas 76106

**Emergency Telephone No.:**  
 (800) 424-9300 CHEMTRIC

**Information Telephone No:**  
 (817) 740-9197 (800) 333-9197

**SECTION I - PRODUCT IDENTIFICATION**

**Product Name and Synonyms:** Wood Safe; JDP 108

**Chemical Family:** Aqueous-based fire retardant

**SECTION II - HAZARDOUS INGREDIENTS**

Component (Gas Registry No.)	Weight Percent	AGIH TLV	OSHA PEL
Phosphoric Acid (00764-38-2)	15.3%	1 ppm TWA 3ppm STEL	1 ppm TWA

**SECTION III - PHYSICAL PROPERTIES**

**Appearance and Odor:** Clear, colorless, odorless liquid,  
 Becomes cloudy below 50°F (10°C)

**Molecular Weight:** Not Applicable

**Boiling Point:** (Degrees Fahrenheit) 212 not accurate;  
 mixture of components

**Vapor Pressure:** (mm of Mercury) Not Determined

**Melting Point:** (Degrees Fahrenheit) N/A

**Specific Gravity:** (water=1) 1.120 - 1.160

**Vapor Density:** (air=1) Not determined

**PH:** 5.0 - 5.2

**Evaporation Rate:** (Butyl Acetate=1); Not determined,  
 (<1) slower

**Percent Volatile (by weight):** 71.9%

**Solubility in Water:** Complete

**SECTION IV - FIRE AND EXPLOSION DATA**

**Flash point (Degrees Fahrenheit; Pensky-Martins Closed Cup):** None to Boiling

**Fire Extinguishing Media:** Not combustible. Use water spray, fog, foam, dry chemicals, carbon dioxide or other agents as appropriate for materials in surrounding fire.

**Flammable Limits (Percent by Volume):** N/A

**Special Fire Fighting Procedures and Equipment:** Not Combustible. Use safety equipment and clothing which is suitable for phosphoric acid and materials in surrounding fire.

**Unusual Fire and Explosion Hazards:** May liberate flammable hydrogen gas upon contact with many metals. Protect personnel against mist, vapor, or splashes.

**Hazardous Combustion Products:** Combustion products can include carbon dioxide, carbon monoxide, hydrogen, ammonia, hydrogen cyanide, methane, and oxides of phosphorus.

**SECTION V - REACTIVITY DATA**

**Stability:** Stable

**Conditions to Avoid:** Stable at normal storage conditions. Contamination with strong oxidizers, strong alkalis, strong acids, urea or phenol

**Incompatibility (Materials to Avoid):** Strong oxidizers, alkalis, or acids. Slowly reacts with some common metals causing highly flammable hydrogen gas to be emitted.

**Hazardous Decomposition Products:** N/A

**Hazardous Polymerization:** Will NOT occur

## SECTION VI - HEALTH AND HAZARD INFORMATION

**Exposure From Routing Use:** No evidence of adverse effects from available information.

**Effects of Overexposure:** Prolonged contact with skin may cause reddening of affected area. Direct contact with the eyes causes redness, pain, conjunctivitis and with severe exposure possible corneal destruction.

**Probable Routes of Exposure:** Inhalation, skin, eyes, ingestion.

### Emergency and First Aid Procedures:

**Eye Contact:** Rinse immediately with water. Remove contact lenses, then flush eyes immediately with running water for at least 15 minutes. Consult a Physician if irritation persists.

**Inhalation:** Remove to fresh air immediately. Use adequate ventilation.

**Ingestion:** Substance exhibits very low toxicity. Consult a physician if stomach or nausea occur.

## SECTION VII - TOXICITY DATA

**Oral:** Not established. Acute Oral Toxicity: LD50 (rat) >5000 mg/kg

**Dermal:** Not established. Not expected to be harmful. May be irritating with continuous contact.

**Inhalation:** Not established. Not expected to be harmful. If necessary, use respirator if adequate ventilation is not possible to keep exposure to particulate matter to a minimum.

**Other Pertinent Data:** Not Applicable

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**Protective Gloves:** Wear impervious gloves as necessary to avoid contact; rubber or neoprene.

**Eye Protection:** Protective glasses or goggles.

**Respiratory Protection (Specify Type):** Use NIOSH/MSHA approved respirator suitable for use with inorganic acids and organic vapors if proper ventilation can not be provided.

**Ventilation:** Local Exhaust - Use exhaust fans if necessary to control mist of vapor.  
Mechanical (general) - Normal room ventilation of fans  
Special - Not applicable

**Other Protective Equipment:** Adequate clothing to minimize chances of contact with skin.

## SECTION IX - SPILL, LEAK, AND DISPOSAL PROCEDURES

**Steps to be taken in case material is released or spilled:** Confine spilled material and absorb on sand, sawdust, earth or other available solids. Sweep and place in a suitable container. Neutralize with soda ash and flush with water. Rinse minor spills into sewer if permitted by Federal, State and local regulations.

**Waste Disposal Methods:** Incinerate or bury in a suitable land fill where permitted by appropriate government regulations.

**Clean Water Act Requirements:** Sec 311 of the clean water act lists phosphorous as a hazardous substance which, if discharged into or upon water, will present an imminent and substantial danger to public health or welfare. Spills of 5000 pounds or more must be reported to the National Response Center 1-800-424-8802.

**Resource Conservation and Recovery Act (RCRA) Requirements:** No applicable information found.

## SECTION X - REGULATORY INFORMATION

**FDA:** No Applicable information found

**Proper Shipping Name:** N/A

**USDA:** No Applicable information found

**Hazard Class:** N/A

**CPSC:** No applicable information found

**Label Required:** N/A

**TSCA:** No Applicable information found

**Identification No:** N/A

**DOT:** No Applicable information found

**Other Pertinent Information:** N/A

**SECTION XI - SPECIAL PRECAUTIONS AND COMMENTS**

**Precautions to be Taken in Handling and Storing:**

- Keep away from eyes
- Avoid breathing mist or vapor
- Avoid contact with skin or clothing
- Wash skin that contacted material with soap and water

**Other Precautions:** Not applicable

**Registrations/Certifications:** Not applicable

**Effective Date:** October 1, 1989

**Supersedes:** All Previous

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