PHYSICAL EVIDENCE MANUAL FOR FIRE INVESTIGATIONS



Susan Williamson Principal Criminalist

Idaho Department of Law Enforcement Bureau of Forensic Services



STATE OF IDAHO DEPARTMENT OF LAW ENFORCEMENT

PARTMENT OF LAW ENFORCEMENT BUREAU OF FORENSIC SERVICES



PHYSICAL EVIDENCE MANUAL FOR FIRE INVESTIGATIONS MANAGERIAL REVIEW

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Idaho Department of Law Enforcement Idaho State Police Forensic Services

Acknowledgments

This manual is the culmination of a series of evidence classes that I have presented over the years related to fire evidence casework. It arose out of the perceived need by investigators to standardize the handling of fire evidence and educate the laboratory's users on the technology and conclusions rendered in analysis. I hope this manual fulfills this purpose and the work meets with approval.

I would like to thank Deputy State Fire Marshal Glenn Lauper, Post Falls Fire Protection District Chief Lynn Borders, and Forensic Services Supervisor and Latent Print Examiner Ray York for providing background information for this manuscript.

Included within this manual is a section on the fire debris carrine program for the State of Idaho. This section is part of a larger program manual prepared by Messrs. Lauper and Borders. Use of this manual was greatly appreciated.

Forensic Services generously allowed me the time to complete this endeavor and for this I am grateful. A number of individuals from Forensic Services proofread the manual and their editing comments were greatly appreciated. These included Dan Charboneau, Don Wyckoff, Teresa Reifsnyder and Melody Cunningham. Other fire investigators also contributed to the final work with their comments and these include Don Dillard, Dick Haan, and Terry Edwards all from the State Fire Marshall's Office and Detective Les Howells and Lieutenant Gary Johns from the Twin Falls City Crime Laboratory and Canyon County Crime Laboratories, respectively. Others may have provided assistance and I have failed to give them credit. I apologize if this has occurred. The omission was not intentional, but their help was greatly appreciated.

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Preface

This physical evidence manual is intended for fire and law enforcement personnel submitting physical evidence associated with questionable fires to the Department of Law Enforcement, Idaho State Police Forensic Services (ISP-FS). This manual is a guide for those who have the responsibility of investigating fires and rendering opinions as to the origin and cause of the fire. It was written with input from laboratory, state fire marshal and fire response personnel. This manual assumes that any evidence collected for analysis, has already been properly documented through the aid of sketches, photographs and videotaping.

This manual covers FS guidelines regarding the proper collection, packaging, sealing and shipping of fire and other types of physical evidence. According to FS policy, evidence is not considered sealed and cannot be accepted into the laboratory until an evidence tape seal is applied which would clearly show tampering should an attempt to gain entry be made (FS Policy Number 91-151.02).

Sample cross-contamination is always a concern at the fire scene. The use of latex or nitrile disposable gloves and disposable slove covers is highly recommended. Reconstruction of what took place is the goal of any crime scene processing. original location of physical evidence is useful in establishing origin, cause and fire spread in a fire scene investigation. If the ignitable liquid becomes relocated either by transferring it from one area to another, handling debris with contaminated fire fighting tools, turnout gear (personal protective fire clothing), or evidence collection equipment, the reconstruction could be flawed.

The guideline concerning the shipping of ignitable liquids must be respected. Those involved in fire investigation should be aware of the damage that an ignitable liquid can initiate. If the BFS guideline on the amount of ignitable liquid submitted is followed, special shipping procedures are avoided. This not only saves time and money but also minimizes both the potential hazard to those involved in the transport of the sample and the risk of contamination to other samples during shipment. This shipping guideline has been reviewed and approved by UPS.

The scope of this manual revision has been expanded to include the proper packaging of fingerprint evidence that is associated with the fire scene. Any evidence that associates the suspect with the fire scene is valuable, therefore, the investigator should not neglect the collection of other types of physical evidence such as fingerprints, footprints and trace evidence at the fire scene. While it is widely recognized that fire suppression efforts will affect the fire scene, fire suppression should be approached in a manner that destroys the least amount of physical evidence.

> Susan Williamson May 1999.

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I. Ignitable Liquid Detection

208-232-3697

A. Evidence Collection Supplies

Refer to Appendix A for price quotes from suppliers that FS routinely uses.

1. Airtight Sample Containers

Friction lid cans and Kapak® or equivalent pouches are the only FS approved packaging containers. If a sample will fit into a friction lid can, it is the preferred mode of packaging due to laboratory analysis considerations.

- a. Friction Lid Cans.
 - i. Friction lid cans are clean, unused metal paint-type cans.
 - ii. Obtain cans from evidence supply, container and packaging supply or scientific supply companies.
- b. Heat Sealable Pouch material.
 - Types of heat sealable pouch material include Kapak[®] (polyester laminated to polyethylene), Kapak[®] Fire DebrisPAK (cast nylon laminated to a hydrocarbon free scalant) and Lynn Peavey arson bags (nylon).
 - ii. The pouch material has the advantage that it remains airtight with long-term storage, unlike metal cans that may rust out.

2. Liquid Collection Materials

a. Vials

obtained from evidence supply, container and packaging supply or scientific supply companies.

Vial tops should be Teflon-lined.

b. Pipets

ii.

- i. Polyethylene disposable (single-use) transfer pipets are recommended for use for transferring liquids to vials.
- ii. Glass pipets are acceptable provided the pipet bulb is changed if any liquid is pulled into it.
- iii. Pipets can be obtained from Pocatello FS (limited supply) and scientific supply companies. Refer to appendix A for ordering information.
- c. Absorbent Material
 - i. Available absorbents include vermiculite, cat litter and Pig[®] Mat.

- ii. Vermiculite can be obtained from a local gardener's supply, cat litter from local grocery stores. Refer to appendix A for Pig[®] Mat ordering information.
- iii. When shipping your samples, and weight is a concern, cat litter weighs much more than either vermiculite or Pig[®] Mat. Cat litter is the least expensive of the three.

B. Sample Nomenclature

To properly interpret the evidence collected in the investigation of a fire, specific types of samples must be collected.

1. Questioned Samples

- a. Definition: Questioned samples are the materials collected that are suspected of containing an ignitable liquid.
- b. Examples of questioned samples include:
 - i. Burnt substrate materials at the fire scene such as carpet, lineleum, wood, soil, fabric, papers, etc.
 - ii. Suspect's clothing and shoes.
 - iii. Liquids located at the fire scene that are suspected to be ignitable.
 - iv. Broken glass and wick from Molotov cocktail.

2. Comparison Samples

a. Standard Comparison Sample.

Definition: A standard comparison sample is an ignitable liquid believed to have been used to accelerate a fire. A standard comparison sample is from a known, documented source.

i. Examples:

- 1] An unopened container of charcoal starter.
- 2] Gasoline from the service station where the suspect purchased the product.
- b. Control Comparison Sample.
 - i. Definition: A control comparison sample is a sample of site substrate material (carpet, wood, linoleum, etc.) that is believed to **not** contain an ignitable liquid/petroleum product. The control comparison sample establishes the nature of the substrate material.
 - ii. Control comparison samples should be collected at the time of the initial investigation because the laboratory cannot determine if a control is necessary prior to laboratory analysis. Control comparison samples are collected because many materials have

petroleum products involved in their manufacturing process. Control comparison samples may not always be available. Examples include clothing and shoes or in cases where extensive burning has taken place such as vehicle fires.

- iii. Control comparison samples should ideally be burnt to the same degree as the questioned sample. The particular set of conditions for the fire change the sample. If a burnt sample is not available, collect a non-burnt control comparison sample. If necessary, further burning can be done in the isoratory.
- įv. The lack of a control comparison does not necessarily preclude the dentification of an ignitable liquid residue.
- Blank Comparison Sample Ç,
 - Definition: The Glank comparison sample is an unused packaging container or ignitable liquid residue collection device of the same type and batch used in the collection process. Blank comparison samples are used to rule out contamination of collection materials.
- ij. Examples of blank comparison samples include an regnitable liquid residue collection device such as the Property of Idaho E DFLEX® device and collection materials such as empty, unused friction lid cans, swabbing materials, and Kapak[®] pouches.

Blank comparison samples should be preserved at the time of the initial scene processing because the laboratory can not determine if a blank is necessary before the completion of laboratory analysis.

The lack of a blank comparison sample does not necessarily preclude the identification of an ignitable liquid residue.

I. Ignitable Liquid Detection

C. Proper Packaging of Samples

- 1. Use of Collection Tools.
 - a. Prevent cross-contamination of samples by collecting samples using uncontaminated tools.
 - i. Collection tools such as shovels, axes, knifes, gloves, pipettes, etc. should be cleaned or disposed of between samples.
 - ii. The fire investigator should not use waterless or similar types of cleaners that may contain volatile solvents or scents.
 - iii. To prevent cross-contamination of a sample, scrape the samples into a friction lid can using the can lid as a scraping device
- 2. Storage of Collection Containers
 - Friction Lid Cans,
 - i. Store friction lid cans with their friction lids sealed in an environment free of contaminants.
 - ii. Do not store cans loose in a response vehicle trunk.
 - iii. Submit empty cans periodically with case samples for verification of lack of contamination.
 - iv. Unused cans can be sealed in Kapak[®] pouch material, for transportation purposes, to assist in preventing contamination.

Fire Debris Pouch Material.

Kapak® pouch material or manufacturer's similar polyester or nylon pouch material, should be stored with end of roll heat-sealed.

- ii. Follow above suggestions for friction lid cans.
- Packaging of Liquid Samples.
 - a. Liquid standard comparison samples or liquid questioned samples that appear to be solely a petroleum product should be packaged as outlined below. Please provide complete identifying information from the label of the standard comparison sample container. Useful information includes the product constituents, applications for the product, and the manufacturer.
 - i. Place liquid into a two-milliliter screw-top vial using a disposable polypropylene pipette. This volume of liquid is adequate for laboratory analysis and avoids having to use special flammable liquid shipping procedures for UPS or other carrier.

- ii. Completely fill vial and tape the lids to prevent loosening. A full vial retards evaporation.
- iii. Place each vial separately into a friction lid can and pack with absorbent material. Available absorbents include vermiculite, cat litter and Pig[®] Mat. Apply friction lid securely.
- iv. Place completed arson analysis evidence label on friction lid can.
- v. Seal can with evidence tape and write-over seal with your initials and date.
- vi. Any original container holding questioned ignitable liquid should be retained until the adjudication of the case.

4. Packaging of empty questioned containers.

- a. Container(s) located at the scene may contain an ignitable liquid residue. This residue could be recoverable through laboratory analysis; however, fingerprints, should be taken prior to submittal for ignitable liquid residue detection. Please advise agency performing fingerprinting that container should be shipped to Pocatello FS as soon as fingerprinting is done. If the fingerprinting is done in a timely manner, both the fingerprints and an ignitable liquid residue identification is possible. If necessary contact Forensic Services, Identification Unit, at 208-884-7145, for assistance.
 - The identification of the ignitable liquid must be balanced against the ability to develop latent prints. Placing the container into airtight packaging may degrade fingerprints. If degradation of the prints is a concern due to the presence of a greasy film on the outer surface of the container, submit the container in an appropriately labeled brown paper bag. Along with the packaged container include an empty friction lid can or Kapak® pouch material for FS fingerprint section personnel to package the container following fingerprinting. Advise the fingerprint processor to place your container in the provided container (can or pouch) for forwarding to Pocatello FS upon completion of fingerprint processing.
- c. Under routine circumstances, place suspect container into appropriately sized friction lid can, or Kapak® pouch.
 - i. Apply friction lid securely or seal pouch with heat seal and verify that pouch is aixtight by pressing against pouch gently.
 - ii. Place completed arson analysis evidence label or FS evidence envelope on can or pouch.

- iii. Seal can or pouch with evidence tape and write-over seal with your initials and date.
- 5. Packaging of Debris and Suspect's Clothing/Shoes
 - a. Size of container should be proportional to size of sample.
 - b. Place item into clean, unlined friction lid can or Kapak® pouch and seal immediately. Fill can or pouch no more than three-fourths full. Laboratory analysis using trapping techniques requires an airspace in sample container.

e. Place completed arson analysis evidence label or evidence envelope on sample container.

f. Seal friction lid can or Kapak® pouch with evidence tape and write-over initials/date.

- g. If it is necessary to collect a sample in a clean glass container, coffee can, or other non-airtight or breakable container, either transfer the contents into a friction lid can or place the entire container into a friction lid can prior to submittal to the laboratory. Seal can with evidence tape and write-over evidence tape with your initials and date. Place completed fire evidence label or evidence envelope on friction lid can
- h. Submit samples to E5 laboratory as quickly as possible.
- 6. Field Use of DPLEX® Device (Diffuse Flammable Liquid Extraction)
 - a. This charcoal strip ignitable liquid recovery device contains the same type of activated charcoal strip that is used in the laboratory to recover ignitable liquid residues. A mesh pouch mounted in a metal holder protects the charcoal strip.
 - After fire evidence has been placed into a properly labeled friction lid can or Kapak[®] pouch, in contaminant free area, open pouch holding charcoal strip device.
 - c. Without touching the device, empty the DFLEX® device directly into the sample container.
 - d. Immediately seal sample container.
 - e. Place the orange "alert" label from the DFLEX® pouch onto the friction lid can. This identifies to laboratory personnel that a DFLEX® device is included with the fire evidence.
 - f. Seal can with evidence tape and write-over evidence tape with your initials and date.
 - g. Submit samples to FS without delay.

D. Identification of Samples

- 1. Labeling of Cans and Pouches.
 - a. Each sample container should have a completed FS fire evidence label attached. Labels are available through FS or the Office of the State Fire Marshal.
 - b. A FS evidence envelope can be used if no fire evidence label is available.
 - c. Fully describe the type of material in the sample and the location of recovery.
- (Questioned, Indicate the sample type đ. Comparison, Standard-Comparison or Blank-Comparison). Property of Idaho of the Police Forence Internet Refer to Section B for clarification of sample types.

Ignitable Liquid Detection (continued) I.

Results of Laboratory Analysis. E.

- 1. Laboratory Report The laboratory report includes identifying information, a brief description of items of evidence submitted and the results of laboratory analysis.
- Reporting of Results 2. Positive Results
 - Laboratory report will indicate the class of ignitable į. liquid identified according to criteria established by American Society for Testing and Materials (ASTM) E1618-94 and E1387-95.
 - Examples of the products falling within a class of ii. ignitable liquid will be listed within the conclusion.

- Results will indicate that no ignitable liquids were
- - An ignitable liquid was not used. A negative report does not conclusively
- detected.

 ii. Interpretation of negative results.

 1) An ignitable liquid was not preclude the precative report de at the fire an in preclude the presence of an ignitable liquid at the fire scene. The possibility remains that an ignitable liquid was used but was not detected due to the following events.

 - Loss during overhaul such as water

 - The ignitable liquid used was not in the particular area sampled.

3. Ignitable Liquid Classification System

n-Alkane Carbon	Examples
'Peak Spread'	-
C4-C11	Petroleum Ethers
	Pocket Lighter Fuels
	Some Rubber Cement Solvents
	Skelly Solvents
	V.M. & P. Naphtha
	Some Camping Fuels
C4-C12	All brands and grades of automotive
	Gasolines, including Gasohol.
C8-C12	Mineral spirits
	Some paint thinners, charcoal starters,
	torch fuels, lamp oils, and solvents for
	insecticides & polish.
	Dry Cleaning Solvents.
C8-C17	No. 1 Fuel Oil
	Ter-A (Awiation) Fuel
	Insect Sprays
~©	Some charcoal starters, torch fuels, paint
110	thinners, tamp oils and solvents for insecticides and polish.
~O'' {	insecticides and polish,
C9-C23	No. 2 Fuel Oil
	Diesel Fuel
Variable	Single compounds, Turpenes. Specialty
	mixtures which cannot be further classified
	into one of the five categories listed above.
Vaxiable	Alcohols
), ~/ \	Esters
2 O Y	Ketones
Variable	Isoparaffin Products
	Some Charcoal starters, copier fluids,
)	aviation gasolines, lamp oils, camping
	fuels and solvents for insecticides and
	polishes.
Variable	Specialty Products formulated from normal
	alkanes. Some lamp oils and solvents for
	insecticides and polishes.
Variable	Light, medium and heavy aromatic naphtha
ı	used as solvents for paints and plastics.
Variable	Specialty solvents/fuel products made from
	class 3 or class 4 distillates treated to
	remove normal alkanes and aromatics, with
	higher cycloalkane content than
	'Peak Spread' (Unevaporated) C4-C11 C4-C12 C8-C12 C9-C23 Variable Variable Variable Variable

ASTM E1387-95

II. Fingerprint Analysis

- A. Collection: Documents, Wrappers and Labels from Ignitable Liquid Containers.
 - 1. Documents can be very fragile.
 - a. Uncharred documents should be protected by placing documents in a plastic sleeve or sheet protector.
 - b. Charred documents should be packed loosely on soft cotton batting and placed into a rigid container to stabilize the document.
 - 2. The above packaging will keep the document clean, preserve any latent prints, and help to prevent accidental damage or destruction of other identifying minutia that may be present.
 - 3. If the document is water soaked or otherwise wet, it should first be allowed to dry at room temperature away from sunlight.
 - 4. Secure the document within a box for transit to FS Identification Unit. If possible, hand carry documents to FS. Please contact FS Identification Unit at 208-884-7145, with any questions regarding the submission of document evidence.
 - 5. Things to remember when handling questioned documents.

 Never fold or crease a document.
 - b. Never use staples.
 - c. Never attempt to repair a document with tape or staples.
 - d. Never use paper punches.
 - e. Never attempt to bring out hidden writing by rubbing with the side of a pencil or dusting with black powder.
 - f. Never attach stickers or gummed labels directly to the document.

PAGE

Physical Evidence Collection for Fire Investigators

II. Fingerprint Analysis (continued)

B. Collection: Matchbooks/boxes

- 1. If the matchbook/box is water soaked or otherwise wet, allow to dry at room temperature, away from sunlight.
- 2. To preserve latent prints the matchbook/box should be wrapped in a clean piece of paper. Place the wrapped matchbook/box into either an appropriately labeled evidence envelope, Kapak® pouch or a friction lid can.

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III. Submitting of Samples to Forensic Services

Information to be provided with Case Samples.

- 1. A cover letter should accompany the evidence that includes:
 - a. The agency and person submitting the samples along with a street address and phone number.

b. The case or incident number.

c. The date, location, suspect(s) and victim(s). The minimum information required for the database is the victim and/or suspect and date of occurrence. Please include DOB and other identifiers, when possible.

d. A synopsis of the incident or the case report.

e. A description of any unusual circumstances which may aid the analyst sample analysis.

Unusual odor.

• Ignitable liquids normally present at the scene.

f. Information on any pending court dates.

B. Methods of Submittal

1. United States Postal Service (USPS)

a. Do not ship your fire debris or clothing samples via the USPS. USPS regulations prohibit the shipping of ignitable liquids.

2. United Parcel Services (UPS) - Ground Only

a UPS can be used to ship fire debris evidence provided that the limited quantity exception for ignitable liquids is followed.

b. The Department of Transportation (DOT) limited quantity exception allows for the shipping of up to 2 tablespoons (30 milliliters) of an ignitable liquid without special handling procedures.

c. Failure to comply with DOT guidelines may result in fines and/or

imprisonment to shipper.

d. If the recommended two-milliliter vials are used to individually package any liquid samples, up to 15 two-milliliter liquid samples can be submitted. This quantity exceeds that required for analysis purposes under normal situations.

e. To maintain the chain-of-custody, indicate that a signature is

required.

3. Hand Delivery by agency.

a. Ideal situation for fire, fingerprint and document evidence.

III. Submitting of Samples to Forensic Services (cont.)

C. FS Addresses

1. Fire evidence which is to be tested for presence of an ignitable liquid should be sent to:

Department of Law Enforcement Idaho State Police Forensic Services Trace Analysis 209 East Lewis Pocatello, ID 83201

2. Fingerprint and document evidence should be sent to:

Department of Law Enforcement
Idaho State Police Forensic Services
Identification Unit
700 S. Stratford Dr.
Meridian, ID 83680-0700

D. Evidence Return and Storage Recommendations

- 1. Fire evidence will only be returned through UPS (ground) or in person.
- 2. Upon receipt of evidence returned from FS, the chain of custody should be completed and the evidence placed into a secure evidence storage area. The report of analysis and affidavit accompanies any returned evidence. It is your responsibility to see that these documents are properly distributed (e.g. prosecutors, detectives).
 - Friction lid cans tend to rust out during extended storage. To insure evidence remains uncontaminated and secure, seal friction lid cans into Kapak® pouch material.

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VI. Procedures for K-9 Assistance.

(Source: Idaho's Canine Accelerant Detection Program Handbook)

A. Guidelines for K-9 Request

- 1. Preserve all types of physical evidence as much as possible during fire suppression and overhaul operations.
- 2. Continually man and secure the fire scene until an investigator and the K-9 team arrives and completes the investigation (i.e. List all persons and time of scene security, allow no entry into fire scene by unauthorized personnel.)
- 3. Contact the Idaho State Fire Marshal's office in your region, (or Boise office) to request the K-9 team, and provide brief details of the incident.

District/Area	Fire Marshal	Phone Number (208)
District 1 - Coeur D'Alene	Deputy Glenn Lauper *	769-1447
District 1 – Lewiston	Deputy Jim Macklin	799-5024
District 2 – Boise	Deputy Don Dillard	334-4370
District 2 – Boise	Don McCoy	334-4370
District 2 – Boise	Deputy Richard Green	334-4370
\$7		895-8050
District 3 - SE Idaho	Deputy Dick Hahn	525-7209
District 3 - SE Idaho	Deputy Terry Edwards	525-7022
Lx	*Secondary handler for Abbey	

- 4. Obtain a signed "Consent to Search" form from the occupant and/or legal owner of the property. If sufficient probable cause exists to believe arson, have local law enforcement obtain a Search Warrant which includes mention that an accelerant detection K-9 may be used.
- 5. Obtain written statements from all witnesses, occupants, and first-in fire/law enforcement. Include address, phone number, date of birth, social security number and place of employment.
- 6. Photos and videotape should be taken of the fire scene prior to any scene disturbance (e.g. sample collection or reconstruction work).

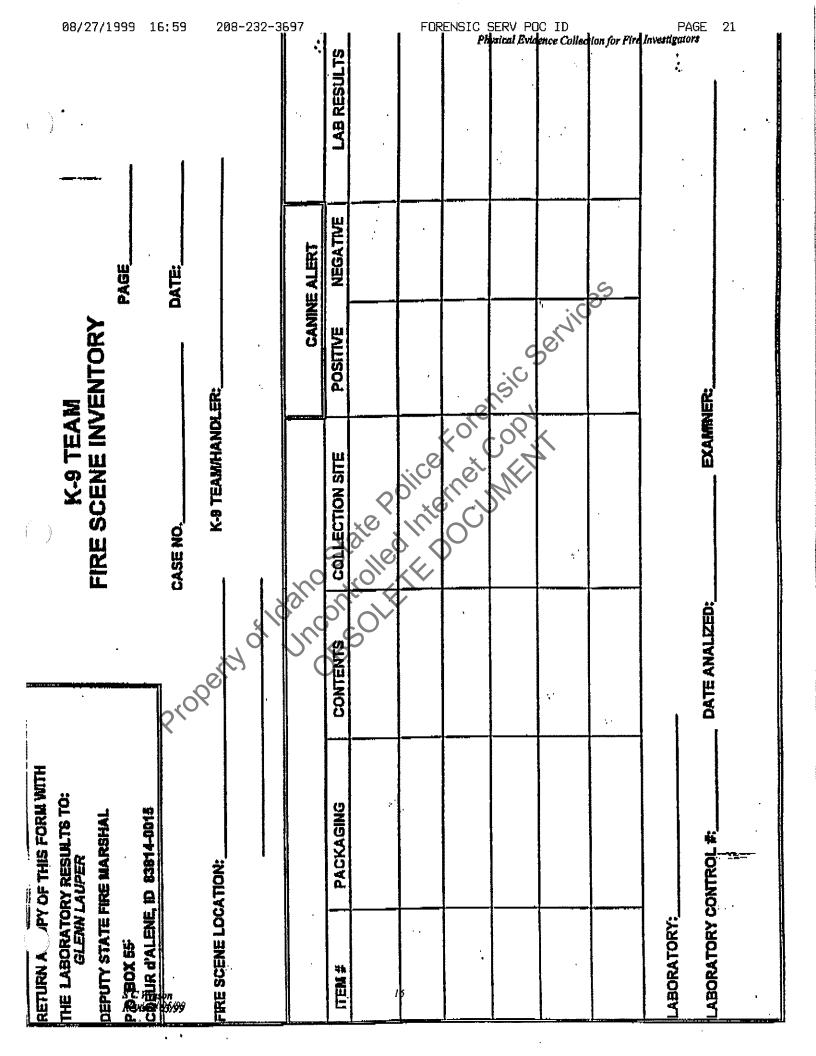
- 7. A narrative report of all relevant details should be completed and available for the investigator when he arrives. Include date, time of fire, reporting party, and first arriving units.
- 8. Floor plans, diagrams and sketches of the incident site should be prepared. Include operational area (i.e. apparatus placement, gas powered equipment and re-fueling areas).
- 9. When the state investigator/K-9 team arrives, fire and law enforcement department representatives <u>MUST</u> BE available to assist with the investigation.

Considerations:

- a. There is no cost to requesting governmental agency if Idaho State Fixe Marshal personnel are available to respond with K-9 within the state.
- b. For non-state Fire Marshal involvement, all cost for transportation, lodging and meals will be arranged in advance for handler/K-9 team from Post Fall Fire Protection District at 0.31 cents per mile, and \$20.00 per diem in-state, or \$30.00 per diem out-of-state.

B. K-9 Team Fire Scene Inventory "Alert" Form

- 1. Scene inventory form will be filled out by K-9 handler indicating the items that the K-9 alerted on.
- 2. Scene inventory will be forwarded to Forensic Services (FS) with the samples that are to be analyzed for the presence of ignitable liquids.
- Upon completion of analysis the FS chemist will indicate the results on the scene inventory form. This process validates the K-9 alerts.
- 4. The completed scene inventory is forwarded to the Deputy State Fire Marshal who is the secondary handler for the K-9.



CONSENT TO SEARCH AND REMOVE EVIDENCE

<u>. </u>	, the	•	
(Person Giving Consent)		(Owner, tenant, man	ager, etc.)
of the	located in		
(Residence, business, vehicle, et	c.)	(City)	.:
at		do	hereby freely
and voluntarily give my consent to	, , , , , , , , , , , , , , , , , , ,		•
	(Name of	Official)	
of the(Name of Agency		and any other	r fire official,
nvestigator, or law enforcement office neident, to enter and search the property he premises, including any other structure property, to examine and remove any ever about (Date and Time of Fire last specifically give my full consent and a stems of evidence which may be related and/or testing. I further, give my full accelerant detection canine (fire dog) premises, surrounding areas, other shortested and shall authorize subsequent a specification consent may only be revolution. (Name of Agency)	erty described inctures or vehical vidence relating to the section of the section of this fire on of this fire	persons to inspect an adirectly, to the fire which occurred and the investe evidence to examina authorize these persons to inspect an authorize these persons in the solicles. This consent so val of evidence as off incident. I further a	ding areas of ljacent to the arred on dremove any igation of the tion, analysis, as to use an search of the hall remain in ten as may be
	Signature		<u> </u>
		s	
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	ID Numbe	Γ	
Date a		:d	•
£.	Witnessed by	y	

VII. References and Recommended Reading

- ASTM E 1459-92, Standard Guide for Physical Evidence Labeling and Related Documentation
- 2. ASTM E 1387-95, Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography
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Appendix A: Possible Sources of Evidence Packaging Supplies

Kapak® Corporation. 1.

Phone: 800-KAPAK57

Kapak® Fire Debris PAK. Please refer to enclosed product information

Lynn Peavey Company 2.

Phone: 800-255-6499

Lynn Peavey is a good source for friction lid cans, nylon bags, custom labels, barrier tape, gloves, evidence tape, and other evidence supplies. If interested in ordering from them, contact Lynn Peavey for a free catalog.

And cans, vials, gloves, shoe covers

are refer to enclosed product information sheet.

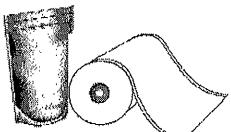
A good source for friction lid cans and vials. Please refer to enclos
product information sheet.

New Pig
Phone: 800-HOT-HOGS
PIG® mat absorbent. Please refer to enclosed product information sheets.

Fire Debris**PAK**







STATE OF THE ART FIRE DEBRIS EVIDENCE COLLECTION CONTAINERS • HEAVY DUTY • CONTAMINATION FREE ENVIRONMENTALLY FRIENDLY • APPROVED BY MANY STATE - COUNTY AND FEDERAL AGENCIES

Special Features:

Can be transported and stored easily. Evidence is secured at the fire site in a transparent airtight tamper proof manner for future lab analysis. This new innovative Stand-Up Fire DebrisPAK permits investigators to store gallon cans or to use as a primary collection container. Takes up less space than rigid containers. Put pouch inside a can or use as a primary container.

Unlike metal cans, caustic ash and water cannot penetrate the heavy duty stand-up Fire DebrisPAK. Durability:

The Stand-Up Fire DebrisPAK holds substances, hydrocarbons and hazardous materials Safety:

more effectively than any other container.

PRODUCT NAME	STOCK NUMBER	POUCH SIZE FILM STRUCTURE	ЕАСН	CASE PRICE
Fire DebrisPAK- 250 ct.	1012183-250	12"x18"x3" Kapak's Arson Film/Clear	\$1.50	\$375.00
DebrisPAK - 500 ct.	1012183-500	12"x18"x3" Kapak's Arson Film/Clear	\$.90	\$450.00
e DebrisPAK Rollstock	TRS1375175-F	13.73" x175 Kapak's Arson Film/Clear	ROLL	\$395.00

ScotchPAK*Pouch Sealers

Multipurpose Pouch Sealers are an excellent match for all Kapak pouches!

POUCH SEALER 101-1

White A/C 115 Volts • Detachable Sealer Legs (2) • Leg Pads • Sealer Bar Cleaning Tool Scotchmate Mounting Tabs • 2 Year Warranty Card • Includes Instructions

STOCK NUMBER	SHIPPING WEIGHT	PRICE
101-E (Black)	1 unit, 4 lbs	\$142.95
101-1	I unit, 4 lbs	\$142,95
101-6	1 Case, 6 Sealers, 25 lbs	\$857.70

PORTABLE POUCH SEALER

ScotchPAK Portable • Mobile Pouch Sealer • Detachable Sealer Legs (2) • Leg Pads • Sealer Bar Cleaning Tool Window Mounting Bracket • Scotchmate Mounting Tabs • 2 Year Warranty Card • Includes Instructions

STOCK NUMBER	SHIPPING WEIGHT	PRICE
103-1	I unit, S lbs	\$148.83
103-E (Black)	1 unit, 5 lbs	\$148.83

EUROPEAN POUCH SEALER 220V

White-220/230 Volts • 2 Prongs European Plug Detachable Scaler Legs • (2) Leg Pads Sealer Bar Cleaning Tool • Scotchmate Mounting Tabs • 2 Year Warranty Card • Includes Instructions

STOCK NUMBER	SHIPPING WEIGHT	PRICE
105-1	1 unit, 4 lbs	\$154.72

COMMERCIAL POUCH SEALER 18"

Extra Wide 18" Seal Length • All Aluminum Teflon Construction

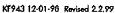
"TOCK NUMBER	SHIPPING WEIGHT	PRICE
. 18-1	1 unit, 6 lbs	\$329.945

Kapak® is a registered trademark of Kapak Corporation and ScotchPAK™ is a trademark of 3M Companies.

5305 Parkdale Drive Minneapolis, MN 55416 612,541.0730 1,800.KAPAK.57 • FAX 612.541,0735 • www.kapak.com • E-mail: info@kapak.com







FISHER SCIENTIFIC QUOTATION

JUNE 4, 1999

PAGE: 1

STATE OF IDAHO "BUREAU OF FORENSIC SERV >209 EAST LEWIS STREET FIRE MANUAL MATERIALS ID 83201 POCATELLO

FISHER SCIENTIFIC COMPANY 9999 VETERANS MEMORIAL DR HOUSTON TX 77038

(800) 766-7000

CUST REF NBR QUOTE

ACCOUNT NBR: 022516-003

COUNT NBR: 022516-003 | REQUESTOR: SUSAN WILLIAMSON QUOTE NBR: 9137-1200-22 | PHONE: 2082329474 | FOB. DEST DUE DATE: | PREPARED BY: BRENT BOYLE | SALES REP: BRENT BOYLE | AUTHORIZED BY: BRENT BOYLE

*** PRICES ARE FIRM THRU 0 7/04/99 ***
PLEASE REFER TO THE QUOTE NOR ON ALL CORRESPONDENCE
THANK YOU FOR YOUR INTEREST IN FISHER SCIENTIFIC COMPANY LLC
SAFETY REP: UNASSIGNED

 NBR	QTY	UN	CATALOG NBR	DESCRIPTION	UNIT PRC	EXTD PRC
	1	 ÇS	 5005720362	CANS SAMPLE TRANSPTN 1GAL 4/CS	! 	16.10
2	1	PK	03 339	VIAL/TEF CAP 1/2 DRAM 144/PK	 	31.43
3	1.	PK	13 711 24	GRAD S BULB PIPET NS 3ML 500PK	, []	20.03
4	1	 CS 	02 760 1H	CAN PAINT 160Z TIN 24/CS	 	27.26
5	1	CZ	02 060 1G	CAN PAINT 320Z TIN 24/CS	 	29.79
6	. 1	62	17 987 47	BOOT CVR PE TYVEK 100PR/CS	, 	116.14
7	1	Ç\$	17 987 26	BOOT CVR HTOP PE TYVK 100PR/PK	; 	150.34
8	1	PK 	11 390 2E 	GLV LTX LP SZ X-LARGE 90/PK SHELF LIFE 1Y	1	8.80
 				MERCHANDISE TOTAL	 	399.89

DELIVERY: STILL LOOKING FOR VERMICULITE.

Container & Packaging Supply, Inc.

1345 East State Street / Eagle, Idaho 83616 (208) 939-0291 • Fax (208) 939-0461

SAMPLE REQUEST FORM

TE REQUESTE		99 SALES I	C	535-10,
SHIP TO:		FOR WHOM	sic ser	
Idaho La	w Enforcemie	ul Jusque	Witharmson.	
		jice ne		
		PHONE NU	MBER:	
		Charley III O	**	
CUANTITY	CODE #	DES	CRIPTION FOB Gogle	Fob I.F.
225/Case	C080	Pint F Style 11/4"	, 70	, 75
	1343	84" Met Harv	.08	108
+5/case	C073A	Pint Rnd Can	.42	, 45
0,	Co74	Plug - Pint Can	.10	, //
20 /case	C062	1 Ot F Style 134"	1,03	1.10
	L346	13/4" DLTA M+	,08	,08
o/case	C053A	1 at Rad Can	, 5 7	.61
	C054	Plug - Qt Can	115	,16
6/Case	C038	16al F Style 13	4" 2.02	2.14
	L346	134" DLTA M+	.08	,08
36/Case	C021A	16al Rnd Met Can	1 1,16	1. 25
	Cozz	Plug - 1 Gal Rnd	, 29	.3/
		, *		



Product Data Sheet

Item# MAT284 • 4 in 1 PIG® Mat

Sample: XMAT284

DESCRIPTION- A multi-purpose absorbent mat roll in a convenient dispenser box. The mat is designed to be used as a traffic mat, a spill response pad, folded up to make a thick sock-like absorbent, or used as a heavy duty wipe.

Per Pallet: 48

Dimensions: 16 1/2" W x 80" L (42 cm x 24 m)

Dispenser Box Dim - 18" L x 12 1/2" W x 12 1/2"

Composition:

Mat: 100 percent Polypromium

Wear Resistant Tenfetric West

W x 12 1/2" H (46 cm x 32 cm x 32 cm)

Metric Weight: 4.5 kg

FEATURES/BENEF

- · Absorbs water-based fluids, petroleum products, solvents, and a wide variety of chemicals / Eliminates guesswork, one mat handles almost all liquids.
- Fough wear-resistant outer covering / Holds up under heavy foot traffic.
- Folds neatly and easily on the engineered score lines / Allows conversion from a roll, to a pad, to a thick sock-like absorbent.
- Perforated every 10" (25 cm) / Easy to tear off the roll to desired length. Minimizes waste.
- · Packaged in a convenient portable dispenser box / Keeps mat clean and dry during storage and allows easy access when dispensing mat.
- Dispenser box has a viewport in each side / Convenient way to see how much mat remains in the box.

Absorbents • 4 in 1º PISº Mat

lt's a Pad!



Soak up muisance spills.

TEAR OFF some sin 1* FIG Mat toss it outo a mill and watch the meast impread Post-wicking 4 in 1* PIG* Matstigge ban ebigott qu'estape lear off what you need,

It's a Roll!



Make walkways safe.

ROLL OUT a in 19 PIG* May ROLD 4 in 19 PIG* Mat into a lo keep walkways drive and saler. Thick Mat absorbs nearly any liquid—even seids and bases. Soft polypropyless bottom layer grips your front a to Nat. Stays out and your workplace and proposed for multiple for the saler and your workplace and proposed for multiple for the saler and proposed for multiple for the saler and proposed for multiple for the saler and proposed the indicated in a state of the control of the cont

It's a Sock!



Altsorb leaks and drips.

It's a Wipe!



Wipe up messes!

WIPE UP annoying masses in a fluid with 1 in 12 PICE Mat. Just bear off what you need - it's highly absorbent, so the grimy sport is gone: Before you know it 4 to 12 PIG Mot is shooner than ordinary vopes, too, so it likes. longer Great for equipment wife downs!



Now Ver aftern risk free obsorbers respecting Son pages 108-180

Everyone in your plant will love 4 in 1° PIG® Mad

- * Purchasing Agents have less paper work to do and lewer products to order!
- Maintenance Managers only have to train employees to tire one product!
- Warehouse Managers save valuable werehouse space!
- Environmental Managers have less waste to slug out for disposal.

Will bolversal 4 in 1 PIG Mat to Clampness A

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MATERI - SOFT WARDS	\$5\$	\$57	\$55	\$5\$
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MATERIAL PROPERTY OF THE		\$90		
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MA 18 (1 ms & W Krog)	562	257	558	233
MATASA-1 na erstrig e ser.	PAR	dend :		
Mante 11 th Color Sort	-departs	135	283	233

Item # MAT284

Page 2

APPLICATIONS

Property of Idaho State Police Police Property of Idaho State Police Police Property of Idaho State Police Police Property of Idaho State Police This mat can be used in four ways: 1. Spill Response Pad 2. Walk-on Traffic Mat 3. Folded up into a thick sock-like absorbent 4. Heavy Duty Wipe.

Rev. 09/14/98

Page 1 of 2



TERIAL SAFETY DATA SHEET

Universal PIG® Absorbents

(MSD014)

1. Product And Company Identification

Product Identifier: Universal PIG® Absorbents General Use: Universal PIG Absorbents are designed to confine and absorb leaks, drips, over-spray and spills of a broad range of chemicals, which include oil, water, coolants and solvents.

Specific Product Identifier: PIG[©] Mat Absorbent Mat, Barrel
Top PIG[©] Mat, Universal Economy Mat, Rip-&-Fit Mat, Universal PIG® Mat Wipe, Handy Pads, Jumbo Pads, Machine Bed Pads, Mini Pads, PIG® Pan, Elephant Met, Dry Floor PIG® Mat, Poly-Back PIG® Mat, PIG® Slop Pad, 4 in 1 PIG® Mat and Non-Biodegradable/Wringable Pillow & Sock.

Product Description: These grey absorbents come in a variety of shapes and sizes as mats, pads, rolls, wipes, socks, pillows and pulp. EMERGENCY TELEPHONE:

COMPANY PROFILE: New Pig Corporation

INFOTRAC

One Pork Avenue Tipton, PA 16684-0304 Information Number

1-800-468-4647

200 North Palmetto Street Leesburg, FL 34748 24 hrs, 7 days/week 1-800-535-5053

2. Composition/Information on Ingredients

Components	wt. %	CAS Registry
Polypropylene Grey pigment	99.7	9003-07-0
	0.3	not available 🤇
May contain one or	more of the follo	wing:
Pan High Density		0
Polyethylene	25	9002-88-4

Mesh Top Polypropylene 1 9003-07-0 Polyester Yam 25038-59-9 9003**-**07-0 Polypropylene Backing 100 Ink

Aqua Ammonia 1336-21-6 Dimethylethanolamine 108-01-0

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200);

EXPOSURE LIMITS 8 hrs. TWA (ppm) OSHA PEL ACGIH TLV

Polypropylene N.E. Polyethylene N.E.

N.E.

N.E. = Not Established

3. Hazards Identification

POTENTIAL MEALTH EFFECTS:

Eye Contact: May cause irritation

Ingestion: No hazard in normal use of product Inhalation: No hazard in normal use of product

Skin Contact: Not applicable Chronic: Not applicable

4. First Aid Moasures

Eye Contact: Flush with water for 15 minutes. Consult a

Ingestion: Not applicable Inhalation: Not applicable Skin Contact: Not applicable

5. Fire Fighting Measures.

Flash Point: Not available Method: Not applicable

Auto Ignition Temperature: 825° F (440° C) Flammable Limits: Not applicable

Conditions of Flammability: Not established

Explosive Properties: Not applicable

Extinguishing Media: Water, chemical foam, dry chemical or

carbon dioxide.

Special Fire Fighting Procedures: Self contained breathing apparatus. If used absorbent is involved in a fire, use extinguishing

media appropriate to liquid absorbed.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, ecrolein, ketones, aldehydes and other unidentified organic compounds may be formed upon combustion.

Unusual Hazards: None

Accidental Release Measures

Spill or Leak Procedures: If material is unused, sweep or pick up and dispose of as a non-hazardous material.

7. Handling and Storage

Handling and Storage Precautions: None Storage Temperature: Not applicable

Storage Pressure: Not applicable

Shelf Life: Indefinitely - as long as product is kept in a clean, dry

place away from direct sunlight. General: Store in a cool, dry place.

8. Exposure Controls/Personal Protection

Engineering Controls: None required

PERSONAL PROTECTION

Eyes: Safety plasses with side shields is a good industrial practice

Respirator: Not required.

Gloves: Not normally required. However, use of cloth, canvas or

leather gloves is a good industrial practice.

Other: None required.

MATERIAL SAFETY DATA SHEET

(1994) Universal PIG Absorbents

9. Physical and Chemical Properties

Appearance: Available in a variety of gray shapes, some inside a

Physical State: Solid

Odor: No odor

Odor Threshold: Not applicable Vapor Pressure: Not applicable Vapor Density: Not applicable

Specific Gravity: 0.9

Solubility in Water: Insoluble

Coefficient of Water/Oll Distribution: Not available

pH: Not applicable

Boiling Point: Not applicable Evaporation Rate: Not applicable Melting Point: 320° F (160° C)

10. Stability and Reactivity

General: This is a stable material.

Conditions of Reactivity: Not established

Incompatible Materials: Strong oxidizing agents may degrade

product over an extended period of time. Conditions to Avoid: Not applicable

Hazardous Decomposition: When heated, it may emit toxic

Hazardous Polymerization: Will not occur

11. Toxicological Information

LD50: Not available LC50: Not available

Carcinogenicity: IARC: Not established

IARC: Not established
National Toxicology Program: Not established
OSHA: Not established
city: Not available
available
vailable
Not available
See Scotion

Reproduction Toxicity: Not available

Teratogenicity: Not available Mutagenicity: Not available

Synergistic Products: Not available

Irritancy of Product: See Section 3.
Sensitization to Product: Not available

12. Ecological Information

No data available

13. Disposal Considerations

Waste Disposal Method: If unused, no special precautions are necessary. Dispose of in accordance with federal, state and local regulations. In certain types of cleanup applications the nature of the material recovered will classify the resulting spent material as a hazardous component. In such instances the material should be disposed of via an approved hazardous waste disposal service and the appropriate manifesting obtained.

Page 2 of 2

14. Transport Information

DOT (Department of Transportation): Proper Shipping Name: Not regulated Hazard Class: Not regulated

Identification Number: Not applicable

15. Regulatory Information

CERCLA (Comprehensive Environmental Response Compensation and Liability Act): No Reportable Quantity OSHA Hazard Communication Standard, 29 CFR 1910.1200:

No listed ingredient SARA Title III Superfund Amendments and Reauthorization

Act): No listed ingredient

TSCA (Toxic Substances Control Act): Ingredients of this

product are on the Inventory list.

16. Other Information

NFPA Hazard Ratings:

Health - 0

none \rightarrow extreme

Fire - 1

4 Reactivity - 0 **→** Reason for Issue: Reviewed, changes to Sections 1, 2, 9, and 16.

Addition of Canadian standards.

Prepared by: Cameron W. Sherry, Enviro-RISQUE Inc. Approved by: Chris Juzzolino, New Pig Corporation

Approval Date: 06/16/98 Revised Date: 06/16/98 MSDS Number: MSD-014

The following is in lieu of all warranties, expressed or implied: All information provided is based on testing and data believed to be accurate.

PHYSICAL EVIDENCE MANUAL FOR FIRE INVESTIGATIONS MANAGERIAL REVIEW

Services
Ralph Powell Bureau Chief Donald A. Wyckoff Supervising Criminalist David A. Laycock Principal Criminalist — Trace Analysis
Ralph Powell Date
Bureau Chief
Donald A. Wyckoff
Supervising Criminalist
to In O
David A. Laycock Date
Principal Criminalist — Trace Analysis
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Date approved for Release: