



Ignitable Liquid Identification Test No. 23-5436 Summary Report

Each sample set consisted of three items: two nylon bags that each contained a cardboard remnant to which an ignitable liquid had been added (Items 1 and 2), and one nylon bag that contained a control sample of the cardboard substrate (Item 3). Data were returned from 284 participants and are compiled into the following tables:

	<u>Page</u>
<u>Manufacturer's Information</u>	<u>2</u>
<u>Summary Comments</u>	<u>3</u>
<u>Table 1: Ignitable Liquid Identification</u>	<u>4</u>
<u>Table 2: Extraction Techniques</u>	<u>20</u>
<u>Table 3: Identification Techniques</u>	<u>33</u>
<u>Table 4: Conclusions</u>	<u>37</u>
<u>Table 5: Additional Comments</u>	<u>68</u>
<u>Appendix: Data Sheet</u>	

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set consisted of three items: two nylon bags that contained a cardboard remnant to which an ignitable liquid had been added and one nylon bag that contained a sample of the cardboard substrate. Participants were requested to identify and indicate the ASTM class for any ignitable liquid(s) present on the submitted items.

SUBSTRATE PREPARATION: Each sample set consisted of corrugated cardboard remnants that were prepared by cutting it into 2x2 inch squares.

ITEMS 1 AND 2 (SAMPLE PREPARATION): The ignitable liquid used for Item 1 was a product labeled as Mainstays™ Citronella Scented Torch Fuel. The ignitable liquid used for Item 2 was a product labeled as Expert Grill™ Lighter Fluid. A pipette was used to deposit 50 μ l of the ignitable liquid to the cardboard remnant and immediately heat sealed in a 5x10 inch nylon bag. This bag was then placed in a 6x12 inch, pre-labeled, nylon bag and heat-sealed. Each bag was then inspected to determine if it contained an adequate amount of headspace.

ITEM 3 (NEGATIVE CONTROL): The cardboard substrate was packaged in the same way as described for Items 1 and 2, but no ignitable liquid was added.

Each item was prepared separately and stored in different locations until the sample set assembly.

SAMPLE SET ASSEMBLY: For each sample set, Items 1, 2, and 3 were inspected to ensure it contained an adequate amount of headspace. After inspection, an Item 1, 2, and 3 were each placed into a pre-labeled sample set box and sealed.

VERIFICATION: The predistribution laboratories reported the expected responses and classified the ignitable liquid in Items 1 and 2 as Petroleum Distillates.

**Source: ASTM E 1618-19, Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry, Table 1.*

Summary Comments

This test was designed to allow participants to assess their ability in the extraction and identification of ignitable liquids on corrugated cardboard remnants packaged in nylon bags. Participants were provided with three items: two nylon bags that each contained a cardboard remnant to which an ignitable liquid had been added (Items 1 and 2), and one nylon bag that contained a control sample of the cardboard substrate (Item 3). Participants were requested to identify and indicate the ASTM class for any ignitable liquid(s) present on the submitted items. The cardboard remnants in the Item 1 bags contained a product labeled as Mainstays™ Citronella Scented Torch Fuel and the cardboard remnants in the Item 2 bags contained Expert Grill™ Lighter Fluid. (Refer to the Manufacturer's Information for preparation details.)

Of the 284 responding participants who reported results for Item 1, 260 (92%) classified the ignitable liquid as belonging to the Petroleum Distillates. Two of these participants reported an additional classification along with Petroleum Distillates including Other-Miscellaneous and Naphthenic Paraffinic Products. Of the remaining 24 participants who reported classification results, 21 classified it as Naphthenic Paraffinic Products, one classified it as Others-Miscellaneous, one classified it as Isoparaffinic Products, and one classified it as Normal Alkanes Products. The majority of the responding participants reported the subclass as medium.

Of the 284 responding participants who reported results for Item 2, 276 (97%) classified the ignitable liquid as belonging to the Petroleum Distillates. One of these participants reported an additional classification along with Petroleum Distillates including Others-Miscellaneous. Of the remaining eight participants who reported classification results, five classified it as Naphthenic Paraffinic Products, one classified it as Others-Miscellaneous, one classified it as Isoparaffinic Products, and one classified it as Normal Alkanes Products. The majority of the responding participants reported the subclass as medium.

The most commonly used extraction techniques were heated, passive headspace concentration with carbon/charcoal adsorbent and solvent desorption. The most commonly reported identification technique was GC/MS.

Ignitable Liquid Identification

Indicate the ASTM E 1618-19 class or classes for any ignitable substances present on the submitted items.

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
238LMU	Petroleum Distillates (including De-Aromatized)	Medium
242A8A	Normal Alkanes Products	n-C11-n-C14
2A8D3V	Petroleum Distillates (including De-Aromatized)	Medium
2EZ62Y	Naphthenic Paraffinic Products	
2GQ7A9	Petroleum Distillates (including De-Aromatized)	Medium
2JCT3V	Petroleum Distillates (including De-Aromatized)	Medium
2JRECX	Petroleum Distillates (including De-Aromatized)	Medium
2JW2ZJ	Petroleum Distillates (including De-Aromatized)	Medium
2LJBZR	Petroleum Distillates (including De-Aromatized)	medium
2MTFEF	Petroleum Distillates (including De-Aromatized)	Medium
2UQ8MA	Petroleum Distillates (including De-Aromatized)	medium (c11-c12)
36AE7C	Petroleum Distillates (including De-Aromatized)	Medium
3EWCWG	Petroleum Distillates (including De-Aromatized)	Medium
3GZ8DY	Petroleum Distillates (including De-Aromatized)	Medium
3JR43T	Petroleum Distillates (including De-Aromatized)	Medium
3RLCMJ	Naphthenic Paraffinic Products	
3UMGZ4	Petroleum Distillates (including De-Aromatized)	Medium
3V6Y9Y	Petroleum Distillates (including De-Aromatized)	Medium
49M7KQ	Petroleum Distillates (including De-Aromatized)	Medium
49N9JN	Petroleum Distillates (including De-Aromatized)	Medium
4AF69H	Petroleum Distillates (including De-Aromatized)	Medium
4CMM8D	Petroleum Distillates (including De-Aromatized)	medium
4DDD6J	Petroleum Distillates (including De-Aromatized)	MPD (C11-C13)
4GDNYY	Naphthenic Paraffinic Products	Medium
4LANMM	Petroleum Distillates (including De-Aromatized)	Medium
4MNHHA	Petroleum Distillates (including De-Aromatized)	C10-C13
4Q7AC6	Petroleum Distillates (including De-Aromatized)	Medium
4QKVNR	Petroleum Distillates (including De-Aromatized)	Medium
4WUM7K	Petroleum Distillates (including De-Aromatized)	Medium petroleum distillate
4ZT7HC	Petroleum Distillates (including De-Aromatized)	medium
6233F9	Naphthenic Paraffinic Products	C10 to C13
6879TQ	Petroleum Distillates (including De-Aromatized)	Medium
6AX6GK	Petroleum Distillates (including De-Aromatized)	MEDIUM
6J2RGP	Petroleum Distillates (including De-Aromatized)	Medium
6JFERC	Petroleum Distillates (including De-Aromatized)	Medium
6L8D7B	Petroleum Distillates (including De-Aromatized)	medium

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
6NTYYX	Petroleum Distillates (including De-Aromatized)	medium petroleum distillate
6RDEHK	Petroleum Distillates (including De-Aromatized)	Medium
6T7YVP	Petroleum Distillates (including De-Aromatized)	medium
6VEMMV	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
6WMURA	Petroleum Distillates (including De-Aromatized)	Medium
72GLHX	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
73A6EC	Petroleum Distillates (including De-Aromatized)	medium
79ZENB	Petroleum Distillates (including De-Aromatized)	medium
7FFX7P	Petroleum Distillates (including De-Aromatized)	Medium
7N97QF	Petroleum Distillates (including De-Aromatized)	Medium
7NNPBD	Naphthenic Paraffinic Products	medium
7QZ66E	Petroleum Distillates (including De-Aromatized)	Medium
7VAKE3	Petroleum Distillates (including De-Aromatized)	Medium
879HZG	Petroleum Distillates (including De-Aromatized)	Medium (C11-C12 de-aromatized)
8A42ND	Naphthenic Paraffinic Products	Medium
8EJACD	Petroleum Distillates (including De-Aromatized)	Medium
8N8VB4	Petroleum Distillates (including De-Aromatized)	Medium
8NNGRD	Petroleum Distillates (including De-Aromatized)	Medium
8QB4KZ	Petroleum Distillates (including De-Aromatized)	Medium
8RNRMD	Petroleum Distillates (including De-Aromatized)	Medium
8TKFGP	Others - Miscellaneous	Medium
	Petroleum Distillates (including De-Aromatized)	Medium
8TZ6RA	Petroleum Distillates (including De-Aromatized)	Medium
8V4ZBC	Petroleum Distillates (including De-Aromatized)	Medium
8WXFEF	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate (MDP)
8YPC3A	Petroleum Distillates (including De-Aromatized)	Medium
8ZEB2L	Petroleum Distillates (including De-Aromatized)	Medium (C11-C12), de-aromatized
9DJV2P	Petroleum Distillates (including De-Aromatized)	Medium
9HW2RR	Petroleum Distillates (including De-Aromatized)	Medium
9HY4PP	Petroleum Distillates (including De-Aromatized)	Medium
9J7782	Petroleum Distillates (including De-Aromatized)	Medium
9LXHDE	Petroleum Distillates (including De-Aromatized)	Medium
9PWWXJ	Petroleum Distillates (including De-Aromatized)	Medium
9UAT77	Naphthenic Paraffinic Products	Medium
9XRLAZ	Petroleum Distillates (including De-Aromatized)	Medium
A49UGP	Petroleum Distillates (including De-Aromatized)	medium
A66UAG	Naphthenic Paraffinic Products	Medium
ACZWBT	Naphthenic Paraffinic Products	Medium

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
AGG6YR	Petroleum Distillates (including De-Aromatized)	Medium
ALU6VJ	Naphthenic Paraffinic Products	Medium
AML2KD	Petroleum Distillates (including De-Aromatized)	Medium (C8-C13)
AQNYV7	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate (MPD)
AR299D	Others - Miscellaneous	Medium
ATPCNH	Petroleum Distillates (including De-Aromatized)	Medium
AV2J3R	Petroleum Distillates (including De-Aromatized)	Medium
AVH9CC	Naphthenic Paraffinic Products	medium range
AYZVXR	Petroleum Distillates (including De-Aromatized)	Medium
AZBZCF	Petroleum Distillates (including De-Aromatized)	Medium
AZPWNT	Petroleum Distillates (including De-Aromatized)	Medium
B3A4MF	Petroleum Distillates (including De-Aromatized)	Medium range
B3UCNQ	Naphthenic Paraffinic Products	medium
B7AEJF	Petroleum Distillates (including De-Aromatized)	Medium
BBPM8E	Petroleum Distillates (including De-Aromatized)	Medium
BC4B97	Petroleum Distillates (including De-Aromatized)	Medium
BGGJPX	Petroleum Distillates (including De-Aromatized)	Medium
BKCBVA	Petroleum Distillates (including De-Aromatized)	Medium
BNU6HE	Petroleum Distillates (including De-Aromatized)	Medium
BUKMAR	Petroleum Distillates (including De-Aromatized)	medium
BVD9NW	Petroleum Distillates (including De-Aromatized)	Medium
BW8NTK	Petroleum Distillates (including De-Aromatized)	Medium
C4ZL48	Petroleum Distillates (including De-Aromatized)	Medium
C6FD7J	Petroleum Distillates (including De-Aromatized)	Medium
C87G4W	Petroleum Distillates (including De-Aromatized)	Medium
C9YBYF	Petroleum Distillates (including De-Aromatized)	Medium
CCHUT4	Petroleum Distillates (including De-Aromatized)	Medium
CGQH4K	Petroleum Distillates (including De-Aromatized)	medium range
CRQG6L	Petroleum Distillates (including De-Aromatized)	Medium
CV8F9K	Petroleum Distillates (including De-Aromatized)	Medium
CWP8KQ	Petroleum Distillates (including De-Aromatized)	medium
CXGT7A	Petroleum Distillates (including De-Aromatized)	Medium (C10-12) Dearomatized Distillate
CY7R6K	Petroleum Distillates (including De-Aromatized)	Medium
CYRT34	Petroleum Distillates (including De-Aromatized)	Medium
CZ9PV4	Petroleum Distillates (including De-Aromatized)	Medium
D4F8D9	Petroleum Distillates (including De-Aromatized)	Medium (C8-C13)
D6ALR9	Petroleum Distillates (including De-Aromatized)	medium
D99WM9	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate (MPD)

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
DDRUF6	Petroleum Distillates (including De-Aromatized)	Medium
DK4HZB	Petroleum Distillates (including De-Aromatized)	medium
DMVEP6	Petroleum Distillates (including De-Aromatized)	Medium
DUCKE4	Petroleum Distillates (including De-Aromatized)	Medium
DZZZQA	Petroleum Distillates (including De-Aromatized)	medium
E32RBE	Petroleum Distillates (including De-Aromatized)	Medium
E6TNY9	Petroleum Distillates (including De-Aromatized)	Medium
E8D9QB	Petroleum Distillates (including De-Aromatized)	Medium
ECQQ9R	Petroleum Distillates (including De-Aromatized)	Medium
EEHCWW	Petroleum Distillates (including De-Aromatized)	Medium
EKLJAE	Petroleum Distillates (including De-Aromatized)	
EXNG6J	Petroleum Distillates (including De-Aromatized)	medium
EYPKCV	Petroleum Distillates (including De-Aromatized)	Medium
EZXWRC	Petroleum Distillates (including De-Aromatized)	Medium
F3H94M	Petroleum Distillates (including De-Aromatized)	Medium
F6LADD	Petroleum Distillates (including De-Aromatized)	medium
F8B9J3	Petroleum Distillates (including De-Aromatized)	Medium
FA369W	Petroleum Distillates (including De-Aromatized)	medium
FAHNQ9	Petroleum Distillates (including De-Aromatized)	Medium (C8-C14)
FDWVYL	Petroleum Distillates (including De-Aromatized)	Medium
FGETRH	Petroleum Distillates (including De-Aromatized)	Medium
FJ8CNW	Petroleum Distillates (including De-Aromatized)	medium
FJL9ZA	Petroleum Distillates (including De-Aromatized)	Medium
FKF2VT	Petroleum Distillates (including De-Aromatized)	medium
FPTACK	Petroleum Distillates (including De-Aromatized)	medium
FQLXXZ	Petroleum Distillates (including De-Aromatized)	medium petroleum distillate
FVC6ZM	Petroleum Distillates (including De-Aromatized)	Medium
FVWLFP	Petroleum Distillates (including De-Aromatized)	Medium
G4PD2N	Petroleum Distillates (including De-Aromatized)	Medium
G6YQYC	Petroleum Distillates (including De-Aromatized)	medium
G8QPCB	Naphthenic Paraffinic Products	C-10 to C-13 Range
GDBKZD	Petroleum Distillates (including De-Aromatized)	Medium
GF3FP8	Petroleum Distillates (including De-Aromatized)	Medium
GFH8QJ	Naphthenic Paraffinic Products	Medium
GJ2UAB	Petroleum Distillates (including De-Aromatized)	medium
GLTQY6	Petroleum Distillates (including De-Aromatized)	Medium
GQYJT2	Petroleum Distillates (including De-Aromatized)	Medium
H3TPFQ	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
H9YFHW	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
HDA4ZL	Petroleum Distillates (including De-Aromatized)	Medium
HFW9QQ	Petroleum Distillates (including De-Aromatized)	Medium
HGBFC9	Petroleum Distillates (including De-Aromatized)	Medium
HKCGEQ	Petroleum Distillates (including De-Aromatized)	Medium
HMDPJZ	Petroleum Distillates (including De-Aromatized)	Medium
HQX7JD	Petroleum Distillates (including De-Aromatized)	medium
HUED8D	Petroleum Distillates (including De-Aromatized)	Medium
J8GUJE	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
J8YFZP	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillates
J98KFY	Petroleum Distillates (including De-Aromatized)	medium
JA7XGT	Petroleum Distillates (including De-Aromatized)	Medium
JGM4XC	Petroleum Distillates (including De-Aromatized)	medium
JJCZEY	Petroleum Distillates (including De-Aromatized)	Medium
JRMUGY	Petroleum Distillates (including De-Aromatized)	medium
JUVEFF	Petroleum Distillates (including De-Aromatized)	medium
K8FNQ6	Petroleum Distillates (including De-Aromatized)	Medium
KBXD4A	Petroleum Distillates (including De-Aromatized)	Medium
KG2KJC	Petroleum Distillates (including De-Aromatized)	medium
KGK4Q6	Petroleum Distillates (including De-Aromatized)	Medium
KJQPFP	Petroleum Distillates (including De-Aromatized)	Medium
KNJLPU	Petroleum Distillates (including De-Aromatized)	medium
KPCEKD	Petroleum Distillates (including De-Aromatized)	Medium
L2KEUB	Petroleum Distillates (including De-Aromatized)	Medium Range
L7HXXV	Petroleum Distillates (including De-Aromatized)	Medium
LAW4MW	Petroleum Distillates (including De-Aromatized)	Medium
LER8LN	Petroleum Distillates (including De-Aromatized)	Medium
LHQJGN	Petroleum Distillates (including De-Aromatized)	Medium
LLTGRF	Petroleum Distillates (including De-Aromatized)	Medium (C11 - C12)
LNZYQC	Petroleum Distillates (including De-Aromatized)	Medium
LUMCKR	Petroleum Distillates (including De-Aromatized)	Medium
LYEJ4Z	Petroleum Distillates (including De-Aromatized)	medium C11-C13
M8RUWR	Petroleum Distillates (including De-Aromatized)	medium
MEMWX4	Petroleum Distillates (including De-Aromatized)	Medium de-aromatized
ML932H	Petroleum Distillates (including De-Aromatized)	medium
MTA38K	Naphthenic Paraffinic Products	medium
MW8VCU	Petroleum Distillates (including De-Aromatized)	Medium
N7CVC3	Petroleum Distillates (including De-Aromatized)	Medium (C10 to C13)

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
N9ETLA	Petroleum Distillates (including De-Aromatized)	Medium
NB7PA4	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
NGQKX7	Petroleum Distillates (including De-Aromatized)	Medium
NH7GP7	Petroleum Distillates (including De-Aromatized)	De-Aromatized, Medium, C11-C12
NHHFLZ	Petroleum Distillates (including De-Aromatized)	Medium
NMZ9NA	Petroleum Distillates (including De-Aromatized)	Medium
NQVZW7	Petroleum Distillates (including De-Aromatized)	Medium
NVB8K7	Naphthenic Paraffinic Products	medium range
NW3VPY	Petroleum Distillates (including De-Aromatized)	Medium
NXBBW6	Petroleum Distillates (including De-Aromatized)	medium
NZJQJX	Petroleum Distillates (including De-Aromatized)	medium
P3LLME	Petroleum Distillates (including De-Aromatized)	Medium
PK6EBH	Petroleum Distillates (including De-Aromatized)	Medium
PLXX9W	Petroleum Distillates (including De-Aromatized)	Medium
PMVFJR	Petroleum Distillates (including De-Aromatized)	Medium
PQBFPD	Naphthenic Paraffinic Products	medium
PUU397	Petroleum Distillates (including De-Aromatized)	medium
PVML6K	Petroleum Distillates (including De-Aromatized)	Medium
PXVDF	Petroleum Distillates (including De-Aromatized)	Medium
PZKFAU	Petroleum Distillates (including De-Aromatized)	medium
PZZ8C7	Petroleum Distillates (including De-Aromatized)	Medium
Q7GRJV	Petroleum Distillates (including De-Aromatized)	medium
Q99QWU	Naphthenic Paraffinic Products	medium range
Q9PEA2	Petroleum Distillates (including De-Aromatized)	Heavy
QJNKB9	Petroleum Distillates (including De-Aromatized)	Medium
QK7YUY	Petroleum Distillates (including De-Aromatized)	Medium
QLDGRU	Petroleum Distillates (including De-Aromatized)	Medium(C11-C12)
QTWKXB	Petroleum Distillates (including De-Aromatized)	medium
QWG4RY	Petroleum Distillates (including De-Aromatized)	Medium
R3JXEM	Petroleum Distillates (including De-Aromatized)	Medium
R4BWTk	Petroleum Distillates (including De-Aromatized)	Medium
R6QT6X	Naphthenic Paraffinic Products	Medium
REAUDY	Petroleum Distillates (including De-Aromatized)	medium
RKEQYK	Petroleum Distillates (including De-Aromatized)	Medium (C11 - C12)
RRYT62	Naphthenic Paraffinic Products	Medium
RRZW4Y	Petroleum Distillates (including De-Aromatized)	Medium
RTQPTV	Petroleum Distillates (including De-Aromatized)	Medium
RWUKCY	Petroleum Distillates (including De-Aromatized)	medium

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
T6JZQL	Petroleum Distillates (including De-Aromatized)	Medium
T9JCLL	Petroleum Distillates (including De-Aromatized)	Medium
TAULPZ	Petroleum Distillates (including De-Aromatized)	Medium
TB992M	Petroleum Distillates (including De-Aromatized)	Medium
TE8LMQ	Petroleum Distillates (including De-Aromatized)	Medium
TJMUBQ	Petroleum Distillates (including De-Aromatized)	Medium
TM4UEP	Petroleum Distillates (including De-Aromatized)	Medium
TNE2TY	Petroleum Distillates (including De-Aromatized)	Medium
TPLGZ6	Petroleum Distillates (including De-Aromatized)	Medium
TZ6V38	Petroleum Distillates (including De-Aromatized)	medium
U2D3QD	Petroleum Distillates (including De-Aromatized)	Medium
U434XM	Petroleum Distillates (including De-Aromatized)	Medium
U6WK2Q	Petroleum Distillates (including De-Aromatized)	Medium
UJXTPD	Petroleum Distillates (including De-Aromatized)	Medium
UUFWP4	Petroleum Distillates (including De-Aromatized)	Medium
UZ8CPP	Petroleum Distillates (including De-Aromatized)	Medium
V3RN2Z	Petroleum Distillates (including De-Aromatized)	Medium
V7LHY2	Petroleum Distillates (including De-Aromatized)	Medium
VAAG9D	Petroleum Distillates (including De-Aromatized)	Medium
VDLRYL	Naphthenic Paraffinic Products	medium
VEGK2D	Petroleum Distillates (including De-Aromatized)	Medium
VFRMPX	Petroleum Distillates (including De-Aromatized)	De-Aromatized Medium, C11-C12
VQDE6G	Petroleum Distillates (including De-Aromatized)	Medium
W24ZVP	Petroleum Distillates (including De-Aromatized)	Medium
W4ZNP2	Petroleum Distillates (including De-Aromatized)	Medium
W6BZDB	Petroleum Distillates (including De-Aromatized)	Medium
W8ZYK2	Petroleum Distillates (including De-Aromatized)	Medium
WAM7UH	Petroleum Distillates (including De-Aromatized)	Medium
WC9EUP	Naphthenic Paraffinic Products	medium
	Petroleum Distillates (including De-Aromatized)	medium C11-C12
WCTVAT	Petroleum Distillates (including De-Aromatized)	Medium
WGPMHP	Petroleum Distillates (including De-Aromatized)	Medium
WNKPK2	Petroleum Distillates (including De-Aromatized)	Medium
WWV7TL	Petroleum Distillates (including De-Aromatized)	Medium petroleum distillate
WYM3HF	Petroleum Distillates (including De-Aromatized)	Medium
X64XYA	Petroleum Distillates (including De-Aromatized)	Medium
XBRLTF	Isoparaffinic Products	Medium
XE9H7P	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1a - Item 1

WebCode	Item 1: Class	SubClass
XEVQD9	Petroleum Distillates (including De-Aromatized)	Medium
XJNQUP	Petroleum Distillates (including De-Aromatized)	Medium
XMPYXY	Petroleum Distillates (including De-Aromatized)	Medium
XVXXL3	Petroleum Distillates (including De-Aromatized)	Medium
XZBBA9	Petroleum Distillates (including De-Aromatized)	Medium
Y8QAHT	Petroleum Distillates (including De-Aromatized)	Medium
YCZPQG	Petroleum Distillates (including De-Aromatized)	medium
YGUJNH	Petroleum Distillates (including De-Aromatized)	Medium (C11-C12)
YJKDEE	Petroleum Distillates (including De-Aromatized)	Medium
YKU33X	Petroleum Distillates (including De-Aromatized)	Medium
YMJQZJ	Petroleum Distillates (including De-Aromatized)	Medium
YPPLQU	Petroleum Distillates (including De-Aromatized)	De-Aromatized Medium (C11-C12)
YT7UEU	Petroleum Distillates (including De-Aromatized)	Medium
YWKN7	Petroleum Distillates (including De-Aromatized)	Medium
Z84TTW	Petroleum Distillates (including De-Aromatized)	Medium (C10-C13)
ZAANJ9	Petroleum Distillates (including De-Aromatized)	Medium
ZCEBZJ	Petroleum Distillates (including De-Aromatized)	medium
ZGBZGQ	Petroleum Distillates (including De-Aromatized)	Medium
ZH4JCJ	Petroleum Distillates (including De-Aromatized)	Medium
ZKNZEH	Petroleum Distillates (including De-Aromatized)	medium
ZL4RFU	Petroleum Distillates (including De-Aromatized)	Medium
ZNAM86	Petroleum Distillates (including De-Aromatized)	Medium

Response Summary		Total Participants: 284
Item 1: Class		
Petroleum Distillates (including De-Aromatized)	260 (91.5%)	Totals may add up to more than the total number of participants because participants can report multiple ignitable substance classes detected.
Naphthenic Paraffinic Products	22 (7.7%)	
Others - Miscellaneous	2 (0.7%)	
Isoparaffinic Products	1 (0.4%)	
Normal Alkanes Products	1 (0.4%)	

Ignitable Liquid Identification

Indicate the ASTM E 1618-19 class or classes for any ignitable substances present on the submitted items.

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
238LMU	Petroleum Distillates (including De-Aromatized)	Medium
242A8A	Normal Alkanes Products	n-C8-n-C16
2A8D3V	Petroleum Distillates (including De-Aromatized)	Medium
2EZ62Y	Naphthenic Paraffinic Products	
2GQ7A9	Petroleum Distillates (including De-Aromatized)	Medium
2JCT3V	Petroleum Distillates (including De-Aromatized)	Medium
2JRECX	Petroleum Distillates (including De-Aromatized)	Medium
2JW2ZJ	Petroleum Distillates (including De-Aromatized)	Medium
2LJBZR	Petroleum Distillates (including De-Aromatized)	medium
2MTFEF	Petroleum Distillates (including De-Aromatized)	Medium
2UQ8MA	Petroleum Distillates (including De-Aromatized)	medium (C9-C12)
36AE7C	Petroleum Distillates (including De-Aromatized)	Medium
3EWCWG	Petroleum Distillates (including De-Aromatized)	Medium
3GZ8DY	Petroleum Distillates (including De-Aromatized)	Medium
3JR43T	Petroleum Distillates (including De-Aromatized)	Medium
3RLCMJ	Others - Miscellaneous	Normal Alkanes products
3UMGZ4	Petroleum Distillates (including De-Aromatized)	Medium
3V6Y9Y	Petroleum Distillates (including De-Aromatized)	Medium
49M7KQ	Petroleum Distillates (including De-Aromatized)	Medium
49N9JN	Petroleum Distillates (including De-Aromatized)	Medium
4AF69H	Petroleum Distillates (including De-Aromatized)	Medium
4CMM8D	Petroleum Distillates (including De-Aromatized)	medium
4DDD6J	Petroleum Distillates (including De-Aromatized)	MPD (C8-C12)
4GDNYY	Petroleum Distillates (including De-Aromatized)	Medium
4LANMM	Petroleum Distillates (including De-Aromatized)	Medium
4MNHHA	Petroleum Distillates (including De-Aromatized)	C9-C12
4Q7AC6	Petroleum Distillates (including De-Aromatized)	Medium
4QKVNR	Petroleum Distillates (including De-Aromatized)	Medium
4WUM7K	Petroleum Distillates (including De-Aromatized)	Medium petroleum distillate
4ZT7HC	Petroleum Distillates (including De-Aromatized)	medium
6233F9	Naphthenic Paraffinic Products	C8 to C12
6879TQ	Petroleum Distillates (including De-Aromatized)	Medium
6AX6GK	Petroleum Distillates (including De-Aromatized)	MEDIUM
6J2RGP	Petroleum Distillates (including De-Aromatized)	Medium
6JFERC	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
6L8D7B	Petroleum Distillates (including De-Aromatized)	medium
6NTYYX	Petroleum Distillates (including De-Aromatized)	medium petroleum distillate
6RDEHK	Petroleum Distillates (including De-Aromatized)	Medium
6T7YVP	Petroleum Distillates (including De-Aromatized)	medium
6VEMMV	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
6WMURA	Petroleum Distillates (including De-Aromatized)	Medium
72GLHX	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
73A6EC	Petroleum Distillates (including De-Aromatized)	medium
79ZENB	Petroleum Distillates (including De-Aromatized)	medium
7FFX7P	Petroleum Distillates (including De-Aromatized)	Medium
7N97QF	Petroleum Distillates (including De-Aromatized)	Medium
7NNPBD	Petroleum Distillates (including De-Aromatized)	Medium
7QZ66E	Petroleum Distillates (including De-Aromatized)	Medium
7VAKE3	Petroleum Distillates (including De-Aromatized)	Medium
879HZG	Petroleum Distillates (including De-Aromatized)	Medium (C9-C12 de-aromatized)
8A42ND	Petroleum Distillates (including De-Aromatized)	Medium
8EJACD	Petroleum Distillates (including De-Aromatized)	Medium
8N8VB4	Petroleum Distillates (including De-Aromatized)	Medium
8NNGRD	Petroleum Distillates (including De-Aromatized)	Medium
8QB4KZ	Petroleum Distillates (including De-Aromatized)	Medium
8RNRMD	Petroleum Distillates (including De-Aromatized)	Medium
8TKFGP	Others - Miscellaneous	Medium
	Petroleum Distillates (including De-Aromatized)	Medium
8TZ6RA	Petroleum Distillates (including De-Aromatized)	Medium
8V4ZBC	Petroleum Distillates (including De-Aromatized)	Medium
8WXFEF	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate (MDP)
8YPC3A	Petroleum Distillates (including De-Aromatized)	Medium
8ZEB2L	Petroleum Distillates (including De-Aromatized)	Medium (C9-C12), de-aromatized
9DJV2P	Petroleum Distillates (including De-Aromatized)	Medium
9HW2RR	Petroleum Distillates (including De-Aromatized)	Medium
9HY4PP	Petroleum Distillates (including De-Aromatized)	Medium
9J7782	Petroleum Distillates (including De-Aromatized)	Medium
9LXHDE	Petroleum Distillates (including De-Aromatized)	Medium
9PWWXJ	Petroleum Distillates (including De-Aromatized)	Medium
9UAT77	Petroleum Distillates (including De-Aromatized)	Medium
9XRLAZ	Petroleum Distillates (including De-Aromatized)	Medium
A49UGP	Petroleum Distillates (including De-Aromatized)	medium
A66UAG	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
ACZWBT	Petroleum Distillates (including De-Aromatized)	Medium
AGG6YR	Petroleum Distillates (including De-Aromatized)	Medium
ALU6VJ	Naphthenic Paraffinic Products	Medium
AML2KD	Petroleum Distillates (including De-Aromatized)	Medium (C8-C13)
AQNYV7	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate (MPD)
AR299D	Petroleum Distillates (including De-Aromatized)	Medium
ATPCNH	Petroleum Distillates (including De-Aromatized)	Medium
AV2J3R	Petroleum Distillates (including De-Aromatized)	Medium
AVH9CC	Petroleum Distillates (including De-Aromatized)	medium range
AYZVXR	Petroleum Distillates (including De-Aromatized)	Medium
AZBZCF	Petroleum Distillates (including De-Aromatized)	Medium
AZPWNT	Petroleum Distillates (including De-Aromatized)	Medium
B3A4MF	Petroleum Distillates (including De-Aromatized)	Medium range
B3UCNQ	Petroleum Distillates (including De-Aromatized)	medium
B7AEJF	Petroleum Distillates (including De-Aromatized)	Medium
BBPM8E	Petroleum Distillates (including De-Aromatized)	Medium
BC4B97	Petroleum Distillates (including De-Aromatized)	Medium
BGGJPX	Petroleum Distillates (including De-Aromatized)	Medium
BKCBVA	Petroleum Distillates (including De-Aromatized)	Medium
BNU6HE	Petroleum Distillates (including De-Aromatized)	Medium
BUKMAR	Petroleum Distillates (including De-Aromatized)	medium
BVD9NW	Petroleum Distillates (including De-Aromatized)	Medium
BW8NTK	Petroleum Distillates (including De-Aromatized)	Medium
C4ZL48	Petroleum Distillates (including De-Aromatized)	Medium
C6FD7J	Petroleum Distillates (including De-Aromatized)	Medium
C87G4W	Petroleum Distillates (including De-Aromatized)	Medium
C9YBYF	Petroleum Distillates (including De-Aromatized)	Medium
CCHUT4	Petroleum Distillates (including De-Aromatized)	Medium
CGQH4K	Petroleum Distillates (including De-Aromatized)	medium range
CRQG6L	Petroleum Distillates (including De-Aromatized)	Medium
CV8F9K	Petroleum Distillates (including De-Aromatized)	Medium
CWP8KQ	Petroleum Distillates (including De-Aromatized)	medium
CXGT7A	Petroleum Distillates (including De-Aromatized)	Medium (C8-12) Dearomatized Distillate
CY7R6K	Petroleum Distillates (including De-Aromatized)	Medium
CYRT34	Petroleum Distillates (including De-Aromatized)	Medium
CZ9PV4	Petroleum Distillates (including De-Aromatized)	Medium
D4F8D9	Petroleum Distillates (including De-Aromatized)	Medium (C8-C13)
D6ALR9	Petroleum Distillates (including De-Aromatized)	medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
D99WM9	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate (MPD)
DDRUF6	Petroleum Distillates (including De-Aromatized)	Medium
DK4HZB	Petroleum Distillates (including De-Aromatized)	medium
DMVEP6	Petroleum Distillates (including De-Aromatized)	Medium
DUCKE4	Petroleum Distillates (including De-Aromatized)	Medium
DZZZQA	Petroleum Distillates (including De-Aromatized)	medium
E32RBE	Petroleum Distillates (including De-Aromatized)	Medium
E6TNY9	Petroleum Distillates (including De-Aromatized)	Medium
E8D9QB	Petroleum Distillates (including De-Aromatized)	Medium
ECQQ9R	Petroleum Distillates (including De-Aromatized)	Medium
EEHCWW	Petroleum Distillates (including De-Aromatized)	Medium
EKLJAE	Petroleum Distillates (including De-Aromatized)	
EXNG6J	Petroleum Distillates (including De-Aromatized)	medium
EYPKCV	Petroleum Distillates (including De-Aromatized)	Medium
EZXWRC	Petroleum Distillates (including De-Aromatized)	Medium
F3H94M	Petroleum Distillates (including De-Aromatized)	Medium
F6LADD	Petroleum Distillates (including De-Aromatized)	medium
F8B9J3	Petroleum Distillates (including De-Aromatized)	Medium
FA369W	Petroleum Distillates (including De-Aromatized)	medium
FAHNQ9	Petroleum Distillates (including De-Aromatized)	Medium (C8-C14)
FDWVYL	Petroleum Distillates (including De-Aromatized)	Medium
FGETRH	Petroleum Distillates (including De-Aromatized)	Medium
FJ8CNW	Petroleum Distillates (including De-Aromatized)	medium
FJL9ZA	Petroleum Distillates (including De-Aromatized)	Medium
FKF2VT	Petroleum Distillates (including De-Aromatized)	medium
FPTACK	Petroleum Distillates (including De-Aromatized)	medium
FQLXXZ	Petroleum Distillates (including De-Aromatized)	medium petroleum distillate
FVC6ZM	Petroleum Distillates (including De-Aromatized)	Medium
FVWLFP	Petroleum Distillates (including De-Aromatized)	Medium
G4PD2N	Petroleum Distillates (including De-Aromatized)	Medium
G6YQYC	Petroleum Distillates (including De-Aromatized)	medium
G8QPCB	Petroleum Distillates (including De-Aromatized)	C-8 to C-13 Range
GDBKZD	Petroleum Distillates (including De-Aromatized)	Medium
GF3FP8	Petroleum Distillates (including De-Aromatized)	Medium
GFH8QJ	Naphthenic Paraffinic Products	Medium
GJ2UAB	Petroleum Distillates (including De-Aromatized)	medium
GLTQY6	Petroleum Distillates (including De-Aromatized)	Medium
GQYJT2	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
H3TPFQ	Petroleum Distillates (including De-Aromatized)	Medium
H9YFHW	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
HDA4ZL	Petroleum Distillates (including De-Aromatized)	Medium
HFV9QQ	Petroleum Distillates (including De-Aromatized)	Medium
HGBFC9	Petroleum Distillates (including De-Aromatized)	Medium
HKCGEQ	Petroleum Distillates (including De-Aromatized)	Medium
HMDPJZ	Petroleum Distillates (including De-Aromatized)	Medium
HQX7JD	Petroleum Distillates (including De-Aromatized)	medium
HUED8D	Petroleum Distillates (including De-Aromatized)	Medium
J8GUJE	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
J8YFZP	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillates
J98KFY	Petroleum Distillates (including De-Aromatized)	medium
JA7XGT	Petroleum Distillates (including De-Aromatized)	Medium
JGM4XC	Petroleum Distillates (including De-Aromatized)	medium
JJCZEY	Petroleum Distillates (including De-Aromatized)	Medium
JRMUGY	Petroleum Distillates (including De-Aromatized)	medium
JUVEFF	Petroleum Distillates (including De-Aromatized)	medium
K8FNQ6	Petroleum Distillates (including De-Aromatized)	Medium
KBXD4A	Petroleum Distillates (including De-Aromatized)	Medium
KG2KJC	Petroleum Distillates (including De-Aromatized)	medium
KGK4Q6	Petroleum Distillates (including De-Aromatized)	Medium
KJQPFP	Petroleum Distillates (including De-Aromatized)	Medium
KNJLPU	Petroleum Distillates (including De-Aromatized)	medium
KPCEKD	Petroleum Distillates (including De-Aromatized)	Medium
L2KEUB	Petroleum Distillates (including De-Aromatized)	Medium Range
L7HXXV	Petroleum Distillates (including De-Aromatized)	Medium
LAW4MW	Petroleum Distillates (including De-Aromatized)	Medium
LER8LN	Petroleum Distillates (including De-Aromatized)	Medium
LHQJGN	Petroleum Distillates (including De-Aromatized)	Medium
LLTGRF	Petroleum Distillates (including De-Aromatized)	Medium (C9 - C12)
LNZYQC	Petroleum Distillates (including De-Aromatized)	Medium
LUMCKR	Petroleum Distillates (including De-Aromatized)	Medium
LYEJ4Z	Petroleum Distillates (including De-Aromatized)	medium C8-C12
M8RUWR	Petroleum Distillates (including De-Aromatized)	medium
MEMWX4	Petroleum Distillates (including De-Aromatized)	Medium de-aromatized
ML932H	Petroleum Distillates (including De-Aromatized)	medium
MTA38K	Petroleum Distillates (including De-Aromatized)	medium
MW8VCU	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
N7CVC3	Petroleum Distillates (including De-Aromatized)	Medium (C8 to C13)
N9ETLA	Petroleum Distillates (including De-Aromatized)	Medium
NB7PA4	Petroleum Distillates (including De-Aromatized)	Medium Petroleum Distillate
NGQKX7	Petroleum Distillates (including De-Aromatized)	Medium
NH7GP7	Petroleum Distillates (including De-Aromatized)	De-Aromatized, Medium, C9-C12
NHHFLZ	Petroleum Distillates (including De-Aromatized)	medium
NMZ9NA	Petroleum Distillates (including De-Aromatized)	Medium
NQVZW7	Petroleum Distillates (including De-Aromatized)	Medium
NVB8K7	Petroleum Distillates (including De-Aromatized)	medium range
NW3VPY	Petroleum Distillates (including De-Aromatized)	Medium
NXBBW6	Petroleum Distillates (including De-Aromatized)	medium
NZJQJX	Petroleum Distillates (including De-Aromatized)	medium
P3LLME	Petroleum Distillates (including De-Aromatized)	Medium
PK6EBH	Petroleum Distillates (including De-Aromatized)	Medium
PLXX9W	Petroleum Distillates (including De-Aromatized)	Medium
PMVFJR	Petroleum Distillates (including De-Aromatized)	Medium
PQBFPD	Petroleum Distillates (including De-Aromatized)	medium
PUU397	Petroleum Distillates (including De-Aromatized)	medium
PVML6K	Petroleum Distillates (including De-Aromatized)	Medium
PXVBDF	Petroleum Distillates (including De-Aromatized)	Medium
PZKFAU	Petroleum Distillates (including De-Aromatized)	medium
PZZ8C7	Petroleum Distillates (including De-Aromatized)	Medium
Q7GRJV	Petroleum Distillates (including De-Aromatized)	medium
Q99QWU	Petroleum Distillates (including De-Aromatized)	medium range
Q9PEA2	Petroleum Distillates (including De-Aromatized)	Heavy
QJNKB9	Petroleum Distillates (including De-Aromatized)	Medium
QK7YUY	Petroleum Distillates (including De-Aromatized)	Medium
QLDGRU	Petroleum Distillates (including De-Aromatized)	Medium(C9-C12)
QTWKXB	Petroleum Distillates (including De-Aromatized)	medium
QWG4RY	Petroleum Distillates (including De-Aromatized)	Medium
R3JXEM	Petroleum Distillates (including De-Aromatized)	Medium
R4BWTk	Petroleum Distillates (including De-Aromatized)	Medium
R6QT6X	Petroleum Distillates (including De-Aromatized)	Medium
REAUDY	Petroleum Distillates (including De-Aromatized)	medium
RKEQYK	Petroleum Distillates (including De-Aromatized)	Medium (C8 - C12)
RRYT62	Naphthenic Paraffinic Products	Medium
RRZW4Y	Petroleum Distillates (including De-Aromatized)	Medium
RTQPTV	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
RWUKCY	Petroleum Distillates (including De-Aromatized)	medium
T6JZQL	Petroleum Distillates (including De-Aromatized)	Medium
T9JCLL	Petroleum Distillates (including De-Aromatized)	Medium
TAULPZ	Petroleum Distillates (including De-Aromatized)	Medium
TB992M	Petroleum Distillates (including De-Aromatized)	Medium
TE8LMQ	Petroleum Distillates (including De-Aromatized)	Medium
TJMUBQ	Petroleum Distillates (including De-Aromatized)	Medium
TM4UEP	Petroleum Distillates (including De-Aromatized)	Medium
TNE2TY	Petroleum Distillates (including De-Aromatized)	Medium
TPLGZ6	Petroleum Distillates (including De-Aromatized)	Medium
TZ6V38	Petroleum Distillates (including De-Aromatized)	medium
U2D3QD	Petroleum Distillates (including De-Aromatized)	medium
U434XM	Petroleum Distillates (including De-Aromatized)	Medium
U6WK2Q	Petroleum Distillates (including De-Aromatized)	Medium
UJXTPD	Petroleum Distillates (including De-Aromatized)	Medium
UUFWP4	Petroleum Distillates (including De-Aromatized)	Medium
UZ8CPP	Petroleum Distillates (including De-Aromatized)	Medium
V3RN2Z	Petroleum Distillates (including De-Aromatized)	Medium
V7LHY2	Petroleum Distillates (including De-Aromatized)	Medium
VAAG9D	Petroleum Distillates (including De-Aromatized)	Medium
VDLRYL	Petroleum Distillates (including De-Aromatized)	medium
VEGK2D	Petroleum Distillates (including De-Aromatized)	Medium
VFRMPX	Petroleum Distillates (including De-Aromatized)	De-Aromatized Medium, C9-C12
VQDE6G	Petroleum Distillates (including De-Aromatized)	Medium
W24ZVP	Petroleum Distillates (including De-Aromatized)	Medium
W4ZNP2	Petroleum Distillates (including De-Aromatized)	Medium
W6BZDB	Petroleum Distillates (including De-Aromatized)	Medium
W8ZYK2	Petroleum Distillates (including De-Aromatized)	Medium
WAM7UH	Petroleum Distillates (including De-Aromatized)	Medium
WC9EUP	Petroleum Distillates (including De-Aromatized)	medium C8 - C12
WCTVAT	Petroleum Distillates (including De-Aromatized)	Medium
WGPMHP	Petroleum Distillates (including De-Aromatized)	Medium
WNKPK2	Petroleum Distillates (including De-Aromatized)	Medium
WWV7TL	Petroleum Distillates (including De-Aromatized)	Medium petroleum distillate
WYM3HF	Petroleum Distillates (including De-Aromatized)	Medium
X64XYA	Petroleum Distillates (including De-Aromatized)	Medium
XBRLTF	Isoparaffinic Products	Medium
XE9H7P	Petroleum Distillates (including De-Aromatized)	Medium

TABLE 1b- Item 2

WebCode	Item 2: Class	SubClass
XEVQD9	Petroleum Distillates (including De-Aromatized)	Medium
XJNQUP	Petroleum Distillates (including De-Aromatized)	Medium
XMPYXY	Petroleum Distillates (including De-Aromatized)	Medium
XVXXL3	Petroleum Distillates (including De-Aromatized)	Medium
XZBBA9	Petroleum Distillates (including De-Aromatized)	Medium
Y8QAHT	Petroleum Distillates (including De-Aromatized)	Medium
YCZPQG	Petroleum Distillates (including De-Aromatized)	medium
YGUJNH	Petroleum Distillates (including De-Aromatized)	Medium (C8-C12)
YJKDEE	Petroleum Distillates (including De-Aromatized)	Medium
YKU33X	Petroleum Distillates (including De-Aromatized)	Medium
YMQZJ	Petroleum Distillates (including De-Aromatized)	Medium
YPPLQU	Petroleum Distillates (including De-Aromatized)	De-Aromatized Medium (C9-C12)
YT7UEU	Petroleum Distillates (including De-Aromatized)	Medium
YWKNT7	Petroleum Distillates (including De-Aromatized)	Medium
Z84TTW	Petroleum Distillates (including De-Aromatized)	Medium (C8-C13)
ZAANJ9	Petroleum Distillates (including De-Aromatized)	Medium
ZCEBZJ	Petroleum Distillates (including De-Aromatized)	medium
ZGBZGQ	Petroleum Distillates (including De-Aromatized)	Medium
ZH4JCJ	Petroleum Distillates (including De-Aromatized)	Medium
ZKNZEH	Petroleum Distillates (including De-Aromatized)	medium
ZL4RFU	Petroleum Distillates (including De-Aromatized)	Medium
ZNAM86	Petroleum Distillates (including De-Aromatized)	Medium

Response Summary

Total Participants: 284

Item 2: Class

Petroleum Distillates (including De-Aromatized)	276	(97.2%)	Totals may add up to more than the total number of participants because participants can report multiple ignitable substance classes detected.
Naphthenic Paraffinic Products	5	(1.8%)	
Others - Miscellaneous	2	(0.7%)	
Isoparaffinic Products	1	(0.4%)	
Normal Alkanes Products	1	(0.4%)	

Extraction Techniques

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
238LMU	✓			✓ 70	16 hours	Carbon/Charcoal	Carbon Disulfide
242A8A	✓			✓ 70	30 minutes	Divinylbenzene/Carboxen/Polydimethylsiloxane (DVB/	Thermal
2A8D3V	✓			✓ 60	16 hours	Carbon/Charcoal	methylene chloride
2EZ62Y	✓			✓ 85			
2GQ7A9	✓			✓ 68	18 hours	Carbon/Charcoal	CS2
2JCT3V	✓			✓ 75	2 hours	Carbon/Charcoal	Carbon Disulfide
2JRECX	✓			✓ 80	16 hours	Carbon/Charcoal	Carbon disulfide
2JW2ZJ	✓			✓ ~71	4 hours	Carbon/Charcoal	carbon disulfide
2LJBZR	✓			✓ 90	1 hour	Tenax	Thermal
Other Extraction Technique: solvent extraction (heptane)							
2MTFEF	✓		✓	✓ 80	15min	SPME Carboxen and PDMS	Thermal
Other Extraction Technique: Solvent Extraction							
2UQ8MA	✓			60	16 hours	Carbon/Charcoal	CS2 (PCEinternal std)
36AE7C	✓			✓ 70	17 hours	Carbon/Charcoal	Carbon disulfide
3EWCWG	✓			✓ 60	16 hours	Carbon/Charcoal	CSS
3GZ8DY	✓			✓ 80	overnight	Carbon/Charcoal	CS2
3JR43T	✓			✓ 65	16 hours	Carbon/Charcoal	carbon disulfide
3RLCMJ	✓			✓ 75			
3UMGZ4	✓			✓ 80	2 Hours	Carbon/Charcoal	Pentane
3V6Y9Y	✓			✓ 65	16 hrs	Carbon/Charcoal	carbon disulfide
49M7KQ	✓			✓ ~80	Overnight	Carbon/Charcoal	CS2/C26
49N9JN	✓			✓ 70	12-16 hours	Carbon/Charcoal	Carbon Disulfide
4AF69H	✓		✓	✓ 70	16 hrs	Carbon/Charcoal	CS2
4CMM8D	✓			✓ 77	2 hours 45 minutes	Carbon/Charcoal	carbon disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
4DDD6J						Carbon/Charcoal	
4GDNYY	✓			✓ 80	16 hours	Carbon/Charcoal	CS2
4LANMM	✓			✓ 70	16.5hrs	Carbon/Charcoal	TCE:Ethyl Ether
4MNHHA	✓			✓ 70	16 hrs	Carbon/Charcoal	n-pentane
4Q7AC6	✓		✓		~21 hours	Carbon/Charcoal	Carbon Disulfide
4QKVNR	✓			✓ 60	~20 hours	Carbon/Charcoal	Carbon Disulfide
4WUM7K		✓	✓	✓ 80	15 mins	Tenax tube	hexane
4ZT7HC	✓			✓ 80	2 hours	Carbon/Charcoal	CS2
6233F9	✓		✓	✓ 80	15m	SPME	Thermal
6879TQ	✓			✓ 80	~16 hours	Carbon/Charcoal	carbon disulfide
6AX6GK	✓			80	24 HOURS	Carbon/Charcoal	
6J2RGP	✓			✓ 70	16 Hours	Carbon/Charcoal	Methylene Chloride
6JFERC	✓			✓ 77	2 hours, 10 minutes	Carbon/Charcoal	CS2
6L8D7B	✓			✓ 80	2 hours	Carbon/Charcoal	carbon disulfide
6NTYYX	✓			✓ 70		Carbon/Charcoal	diethyl ether
6RDEHK	✓			✓ 80	16 hours	Carbon/Charcoal	CS2
6T7YVP	✓			✓ 65	16 hours	Carbon/Charcoal	Carbon Disulfide
6VEMMV		✓		✓ 85	20 minutes	Carbon/Charcoal	Carbon Disulfide
Other Extraction Technique: Heated Headspace							
6WMURA	✓			✓ 80	16	Carbon/Charcoal	carbon disulfide
72GLHX	✓			✓ 60	13.5	Carbon/Charcoal	carbon disulfide
73A6EC	✓			✓ 65		Carbon/Charcoal	CS2
79ZENB	✓			✓ 80	08H	Carbon/Charcoal	Dichloromethane/ Butanol
7FFX7P	✓			✓ 75	13h	Tenax TA adsorption tubes	Thermal
7N97QF	✓			✓ 78	2 Hours	Carbon/Charcoal	Carbon Disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
7NNPBD	✓		✓		~24 hours	Carbon/Charcoal	carbon disulfide
7QZ66E	✓		✓		1 min	SPME	Thermal
Other Extraction Technique: Solvent extraction (Hexane)							
7VAKE3	✓			✓ 80	16 hours	Carbon/Charcoal	Carbon disulphide
879HZG		✓		✓ 100	N/A	Tenax	Thermal
8A42ND	✓			✓ 65	~16 hours	Carbon/Charcoal	carbon disulfide
8EJACD	✓			✓ 70	4 hours	Carbon/Charcoal	Pentane
8N8VB4	✓			✓ ~60	~16 h	Carbon/Charcoal	carbon disulfide
8NNGRD	✓			✓ 70	21 Hours	Carbon/Charcoal	CS2
8QB4KZ	✓			✓ 65	17 hours	Carbon/Charcoal	Carbon disulfide
8RNRMD	✓			✓ 75	2.5 hours	Carbon/Charcoal	Carbon Disulfide
8TKFGP	✓			✓ 70	5 min	SPME Fiber	
8TZ6RA	✓			✓ 66	16 Hours	Carbon/Charcoal	Carbon Disulfide
8V4ZBC	✓			✓ 60		Carbon/Charcoal	Carbon Disulfide
8WXFEF	✓		✓	✓ 70	15 min		
Other Extraction Technique: extraction in CH ₂ Cl ₂							
8YPC3A	✓			✓ 80	8h	Carbon/Charcoal	
8ZEB2L	✓			✓ 80	4 hours	Carbon/Charcoal	pentane
9DJV2P	✓			✓ 60	16 Hours	Carbon/Charcoal	CS2
9HW2RR		✓		✓ 85	20 minutes	Carbon/Charcoal	carbon disulfide
Other Extraction Technique: Heated headspace							
9HY4PP	✓		✓	✓ 60	2hrs and overnight	Carbon/Charcoal	toluene and CS2
9J7782	✓			✓ 60	24 hours	Carbon/Charcoal	Diethyl Ether
9LXHDE	✓			✓ 70	7h 45m	Carbon/Charcoal	Carbon Disulfide
9PWWXJ	✓			✓ 70		Carbon/Charcoal	CS2
9UAT77	✓			✓ 65	16	Carbon/Charcoal	CS2
9XRLAZ	✓			✓ 68	16	Carbon/Charcoal	Carbon Disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
A49UGP	✓			✓ 70		Carbon/Charcoal	Ethyl Ether
Other Extraction Technique: Direct (Static) Headspace Analysis							
A66UAG	✓		✓	✓ 80	10 min		
Other Extraction Technique: Direct headspace injection							
ACZWBT	✓			✓ 80	approximately 17 hours	Carbon/Charcoal	Carbon Disulfide
AGG6YR	✓			✓ 65	16 hours	Carbon/Charcoal	CS2
ALU6VJ	✓			✓ 60	16 hours	Carbon/Charcoal	carbon disulfide
AML2KD	✓			✓ 65	16 hours	Carbon/Charcoal	CS2
AQNYV7	✓			✓ 80	16 hours	Carbon/Charcoal	Carbon disulfide
Other Extraction Technique: Static headspace, heated at 1 hour at 80C and analyzed by headspace GC/MS							
AR299D		✓		✓ 100	1 hour	Tenax	Pentane
ATPCNH	✓			✓ ~90	15 hours	Carbon/Charcoal	carbon disulfide
AV2J3R	✓			✓ 64	16.5	Carbon/Charcoal	Carbon Disulfide
AVH9CC	✓			✓ 65	16 hours	Carbon/Charcoal	Carbon Disulfide
AYZVXR	✓			✓ 64	16 hrs	Carbon/Charcoal	Carbon Disulfide
AZBZCF	✓			✓ 79	16 hours	Carbon/Charcoal	Carbon Disulfide
AZPWNT	✓		✓		16-24 hours	Carbon/Charcoal	Dichloromethane
B3A4MF	✓			✓ 70	16 Hr	Carbon/Charcoal	CS2
Other Extraction Technique: Simple heated headspace							
B3UCNQ	✓		✓		~24 hours	Carbon/Charcoal	CS2
B7AEJF	✓			✓ 70	16.5 hours	Carbon/Charcoal	TCE/diethyl ether
BBPM8E	✓			✓ 80	2 hours	Carbon/Charcoal	carbon disulfide
BC4B97	✓			✓ 75	~5 hours 15 minutes	Carbon/Charcoal	carbon disulfide
BGGJPX	✓			✓ 80 and 90	15 minutes	SPME DVB/PDMS	Thermal
BKCBVA	✓		✓		30 min	SPME	hexane
BNU6HE	✓			✓ 61	17 hours	Carbon/Charcoal	CS2
BUKMAR	✓			✓ 80	16 hours	Carbon/Charcoal	carbon disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
BVD9NW	✓			✓ 65	16 hrs.	Carbon/Charcoal	CS2
BW8NTK	✓			✓ ~70	3 hours	Carbon/Charcoal	Carbon Disulfide
Other Extraction Technique: Heated Headspace							
C4ZL48	✓			✓ 80	40 min.		
Other Extraction Technique: straight headspace							
C6FD7J	✓			✓ 50	~16 hours	Carbon/Charcoal	Carbon Disulfide
C87G4W	✓			✓ 80	16 hr	Carbon/Charcoal	CS2
C9YBYF	✓			✓ 70	20 hours	Carbon/Charcoal	Carbon disulfide
CCHUT4	✓			✓ 60-70	16 hours	Carbon/Charcoal	Carbon Disulfide
CGQH4K	✓			✓ 70	10 hours	Carbon/Charcoal	Ethyl Ether
Other Extraction Technique: Static Headspace sampling, heated for 30 minutes at 70C							
CRQG6L	✓			✓ 110			Pentane
CV8F9K	✓		✓	✓ 60	2 hours room temp, 16 hours heated	Carbon/Charcoal	Toluene (room temp); CS2 (heated)
CWP8KQ	✓			✓ 60 & 90	16 hours & 3 hours	Tenax TA	Thermal
CXGT7A	✓			✓ 50	15 seconds	SPME 100um PDMS	Thermal
CY7R6K	✓			✓ ~76	~17 hours	Carbon/Charcoal	CS2
CYRT34	✓			✓ 70	16 hours	Carbon/Charcoal	Diethyl ether
CZ9PV4	✓			✓ 80	16 hours	Carbon/Charcoal	Carbon disulfide
Other Extraction Technique: Passive Direct Headspace							
D4F8D9	✓			✓ 72	19.5 Hours	Carbon/Charcoal	CS2
D6ALR9	✓		✓		10	PDMS	Thermal
D99WM9	✓			✓ 90	10 mins		
DDRUF6		✓	✓	✓ 100 (ACS)	ACS-16 h (100 C)	Tenax	DKM (ACS), Thermal
Other Extraction Technique: ACS (Activated Charcoal Stripe)							
DK4HZB	✓			✓ 70	~16 hours	Carbon/Charcoal	Carbon Disulfide (CS2)
Other Extraction Technique: Simple Heated Headspace (at 70C for ~15 minutes)							
DMVEP6	✓			✓ 60	~16 hours	Carbon/Charcoal	Carbon disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
DUCKE4	✓			✓ 80	8 hours	Carbon/Charcoal	DCM and butanol
DZZZQA		✓		✓ 70		tenax	Thermal
E32RBE	✓			✓ 80	16 hours	Carbon/Charcoal	carbon disulfide
E6TNY9	✓			✓ 65	16 Hours	Carbon/Charcoal	Carbon Disulfide
E8D9QB	✓		✓		18 hours	Carbon/Charcoal	CS2
ECQQ9R	✓			✓ 60	16 hours	Carbon/Charcoal	CS2
EEHCWW	✓			✓ 60	~16 hours	Carbon/Charcoal	Carbon Disulfide
EKLJAE	✓			✓ 90	5hre	Carbon/Charcoal	cs2
EXNG6J	✓			✓ 80	16 hours	Carbon/Charcoal	carbon disulfide
EYPKCV	✓			✓ ~80	~16 hours	Carbon/Charcoal	carbon disulfide
EZXWRC	✓			✓ 80	15H	Carbon/Charcoal	Pentane
F3H94M	✓			✓ 80	16 Hours	Carbon/Charcoal	Carbon Disulfide
F6LADD	✓			✓ 70	~16 hours	Carbon/Charcoal	Carbon Disulfide
F8B9J3	✓			✓ 70	10 min	SPME	Thermal
Other Extraction Technique: Extraction							
FA369W	✓			✓ 80	16 hours	Carbon/Charcoal	CS2
FAHNQ9	✓		✓		30s	SPME DCP	Thermal
Other Extraction Technique: liquid extraction with n-pentan							
FDWVYL		✓	✓				Thermal
FGETRH	✓			✓ 70	~16 hours	Carbon/Charcoal	carbon disulfide
FJ8CNW	✓			✓ 71	approximately 16 hours	Carbon/Charcoal	Pentane
FJL9ZA	✓			✓ 80	2 hours	Carbon/Charcoal	Carbon Disulfide
FKF2VT	✓			63	19 hours	Carbon/Charcoal	Carbon Disulfide
FPTACK	✓			90	45		
Other Extraction Technique: solvent extraction with pentane							
FQLXXZ	✓			✓ 80	16hr	Carbon/Charcoal	Pentane
FVC6ZM	✓			✓ 70	24 hours	Carbon/Charcoal	diethyl ether

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
FVWLFP	✓			✓ 83	4 hours	Carbon/Charcoal	1:1 CS2/C5
G4PD2N	✓			✓ 60	about 16 hours	Carbon/Charcoal	carbon disulfide
G6YQYC	✓			✓ 60		Carbon/Charcoal	CS2
G8QPCB	✓			✓ 60	4-hours	Carbon/Charcoal	
GDBKZD	✓			✓ 70	16 hours	Carbon/Charcoal	dichloromethane
GF3FP8		✓		✓ 88	20 minutes	Carbon/Charcoal	carbon disulfide
GFH8QJ	✓		✓	✓ 80	15 minutes	carboxen pdms	Thermal
GJ2UAB	✓		✓		~16 hours	Carbon/Charcoal	carbon disulfide
GLTQY6	✓			110		Tenax	
Other Extraction Technique: SPME							
GQYJT2	✓			✓ 77.6	2.5 hours	Carbon/Charcoal	carbon disulfide
H3TPFQ	✓			✓ 80	16 hours	Carbon/Charcoal	CS2
H9YFHW	✓			✓ 65	15 min	Carbon/Charcoal	carbon disulfide
HDA4ZL	✓			✓ 60	16 Hours	Carbon/Charcoal	Dichloromethane
HFV9QQ	✓			✓ 68	~16 hours	Carbon/Charcoal	CS2
HGBFC9	✓			✓ 79	16 hours	Carbon/Charcoal	Carbon Disulfide
HKCGEQ	✓			✓ 90	15 min	PDMS-CARBOXEN	Thermal
Other Extraction Technique: Static head space or Direct head space							
HMDPJZ	✓		✓		10s	SPME	Dichloromethane
HQX7JD	✓			✓ 65	16 hrs	Carbon/Charcoal	carbon disulfide
HUED8D	✓			✓ 65	16 Hrs	Carbon/Charcoal	Carbon Disulfide
J8GUJE		✓		✓ 85.0	20 minutes	Carbon/Charcoal	CS2
Other Extraction Technique: Heated Headspace							
J8YFZP	✓			✓ 70	4 hours	Carbon/Charcoal	Carbon disulfide
J98KFY	✓			✓ 60		Carbon/Charcoal	carbon disulfide
JA7XGT	✓			✓ 65	16 hours	Carbon/Charcoal	Dichloromethane
JGM4XC	✓			✓ 65	16 hours	Carbon/Charcoal	CS2

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption	
	Passive	Dynamic	Rm Temp	Heated (°C)				
JJCZEY	✓			✓	75	14hours	Carbon/Charcoal	Pentane
JRMUGY	✓			✓	65	16 hours	Carbon/Charcoal	Carbon Disulfide
JUVEFF	✓			✓	80	approx 16 hrs	Carbon/Charcoal	CS2
K8FNQ6	✓		✓			8 hours	Carbon/Charcoal	CS2
Other Extraction Technique: Direct Headspace Injection								
KBXD4A	✓			✓	80	16 hours	Carbon/Charcoal	Carbon disulfide
KG2KJC	✓		✓	✓	95	15min	SPME	Thermal
KGK4Q6	✓		✓			16 hours	Carbon/Charcoal	CS2
KJQFPF								
KNJLPU	✓			✓	90	2 hours	Carbon/Charcoal	pentane
KPCEKD	✓			✓	70	16 hours	Carbon/Charcoal	Carbon disulfide
L2KEUB	✓		✓	✓	60	2 hours RT, Overnight @60C	Carbon/Charcoal	
L7HXXV	✓			✓	77	2.3 hours	Carbon/Charcoal	Carbon disulfide
LAW4MW	✓		✓	✓	40	10 minutes	solid-phase microextraction (carbox/PDMS)	Thermal
Other Extraction Technique: solvent extraction with n-hexane								
LER8LN	✓		✓			18 hours	Carbon/Charcoal	Carbon disulfide
LHQJGN	✓			✓	63	~24 hours	Carbon/Charcoal	carbon disulfide
LLTGRF	✓		✓	✓	85	~8 hours	Carbon/Charcoal	DCM
LNZYQC	✓			✓	70	~16 hours	Carbon/Charcoal	Carbon Disulfide
LUMCKR	✓			✓	~65	12 hours	Carbon/Charcoal	Diethyl Ether
LYEJ4Z	✓			✓	60	17 hours	Carbon/Charcoal	pentane
M8RUWR	✓			✓	80	~16 hours	Carbon/Charcoal	carbon disulfide
MEMWX4	✓			✓	80	15min	PDMS/CAR	
Other Extraction Technique: SPME								
ML932H	✓			✓	65	approx. 16 hours	Carbon/Charcoal	CS2
Other Extraction Technique: static headspace								

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
MTA38K	✓			✓ 40	10 min	SPME (DVB/CAR/PDMS)	Thermal
MW8VCU	✓			✓ 77.5	3hr 5min	Carbon/Charcoal	carbon disulfide
N7CVC3							
Other Extraction Technique: Direct headspace injection and solvent extraction (diethyl ether)							
N9ETLA		✓		✓ 85	20	Carbon/Charcoal	CS2
Other Extraction Technique: Heated headspace							
NB7PA4	✓			✓ 70	8 hours	Carbon/Charcoal	Carbon Disulfide
NGQKX7	✓			✓ ~70	~16 Hours	Carbon/Charcoal	Carbon Disulfide
NH7GP7	✓			✓ 80	4 hours	Carbon/Charcoal	Pentane
NHHFLZ	✓			✓ 76	4 hours	Carbon/Charcoal	CS2
NMZ9NA				✓ 90	10 minutes		
Other Extraction Technique: Solvent extraction - Pentane							
NQVZW7	✓			✓ 80	Overnight	Carbon/Charcoal	Carbon Disulfide
NVB8K7	✓			✓ 80	4 hours	Carbon/Charcoal	carbon disulfide
NW3VPY	✓			✓ 75	5 hours	Carbon/Charcoal	CS2
NXBBW6	✓			✓ 65	16 hours	Carbon/Charcoal	carbon disulfide
NZJQJX	✓			✓ ~60	~16 hours	Carbon/Charcoal	Carbon Disulfide
P3LLME				✓ 70	overnight	Carbon/Charcoal	DCM and Toluene
PK6EBH	✓			✓ 65	about 17 hours	Carbon/Charcoal	carbon disulfide
PLX9W	✓			✓ 90	0.1 min	SPME	
Other Extraction Technique: SPME							
PMVFJR	✓			✓ 64	16 hours	Carbon/Charcoal	Carbon Disulfide
PQBFPD	✓			✓ 80	~16 hours	Carbon/Charcoal	Carbon Disulfide
PUJ397	✓			✓ 65	16 hours	Carbon/Charcoal	Carbon disulfide
PVML6K	✓			✓ ~80	~16 hours	Carbon/Charcoal	carbon disulfide
PXVBDF		✓	✓	✓ 130	N/A	Tenax	Thermal
PZKFAU	✓			✓ 65	16 hours	Carbon/Charcoal	carbon disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
PZZ8C7	✓			✓ 90	5 hours	Carbon/Charcoal	CS2
Q7GRJV	✓			✓ 80	overnight	Carbon/Charcoal	Carbon Disulfide/C26
Q99QWU	✓			✓ 65	~16hrs	Carbon/Charcoal	carbon disulfide
Q9PEA2		✓		✓ 50		Tenax TA	
QJNKB9	✓			✓ 70	16 hours	Carbon/Charcoal	Carbon disulfide
QK7YUY	✓			✓ 80	10 min	SPME (Carboxen-PDMS)	Thermal
QLDGRU	✓		✓		1h		Hexane
QTWKXB	✓			✓ 65	17.5 hours	Carbon/Charcoal	CS2
QWG4RY	✓			✓ 72	4 hours	Carbon/Charcoal	Carbon Disulfide
R3JXEM	✓			✓ 75	15 hours	Carbon/Charcoal	pentane
R4BWTk	✓			✓ 70	3 hours	Carbon/Charcoal	
Other Extraction Technique: Heated headspace for 15 minutes at 80 degrees Celsius							
R6QT6X	✓			✓ 70	16 hours	Carbon/Charcoal	Dichloromethane
REAUDY	✓			✓ 60	~16 hours	Carbon/Charcoal	CS2
RKEQYK	✓			✓ 65	20.5 hr	Carbon/Charcoal	Carbon disulfide
RRYT62	✓			✓ 60	16h	Carbon/Charcoal	CS2
RRZW4Y	✓			✓ 72	16.5 hours	Carbon/Charcoal	Diethyl ether
RTQPTV	✓			✓ 65		Carbon/Charcoal	Carbon Disulfide
RWUKCY	✓			✓ 90	16 hr	Carbon/Charcoal	carbon disulfide (CS2)
T6JZQL	✓			✓ 70-100	2 hours	Carbon/Charcoal	Pentane
T9JCLL	✓			✓ 70-100	Approximately 2 hours	Carbon/Charcoal	Pentane
TAULPZ	✓			✓ 75	15	Carbon/Charcoal, spme	n-Pentane, Thermal
TB992M	✓			✓ 75	15 Hours	Carbon/Charcoal	Pentane
TE8LMQ	✓		✓		30min	SPME(BLACK)	ether, Thermal

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption
	Passive	Dynamic	Rm Temp	Heated (°C)			
TJMUBQ	✓			✓ 65	16 hours	Carbon/Charcoal	Carbon disulfide
TM4UEP	✓			✓ 65	~16hrs	Carbon/Charcoal	CS2
TNE2TY	✓			✓ 70	5 hours	Carbon/Charcoal	Carbon Disulfide
TPLGZ6		✓		✓ 85	20 min	Carbon/Charcoal	CS2
Other Extraction Technique: heated headspace							
TZ6V38		✓		✓ 90	20 minutes	Carbon/Charcoal	carbon disulfide
Other Extraction Technique: Heated headspace							
U2D3QD		✓		✓ 80	4 min	Carbon/Charcoal	pentane
U434XM	✓			✓ 60-70	approximately 16 hours	Carbon/Charcoal	Carbon Disulfide
U6WK2Q	✓			✓ 60	5 min.	SPME	Thermal
UJXTPD	✓			✓ 65	16 hours	Carbon/Charcoal	Carbon disulfide
Other Extraction Technique: Static Headspace (heated ~60 degrees for ~12 minutes)							
UUFWP4	✓			✓ 80	16 hours	Carbon/Charcoal	Carbon Disulfide
UZ8CPP	✓			✓ 60	16 hours	Carbon/Charcoal	Carbon Disulfide
V3RN2Z	✓		✓		21 hours	Carbon/Charcoal	Carbon Disulfide
V7LHY2	✓		✓		~17 h	Carbon/Charcoal	CS2
VAAG9D	✓			✓ 70		Carbon/Charcoal	CS2
VDLRYL	✓			✓ 80	16 hours	Carbon/Charcoal	cs2
VEGK2D	✓			✓ 70	2 hours	Carbon/Charcoal	Carbon Disulfide
VFRMPX	✓			✓ 80	4 hours	Carbon/Charcoal	Pentane
VQDE6G	✓			✓ 80	12-16 hours	Carbon/Charcoal	CS2
W24ZVP	✓			✓ ~80	Overnight	Carbon/Charcoal	Carbon Disulfide/C26
W4ZNP2	✓			✓ 66	16hr	Carbon/Charcoal	CS2
W6BZDB	✓			✓ 80	2 Hours	Carbon/Charcoal	Pentane
W8ZYK2	✓			✓ 69	14 hours	Carbon/Charcoal	Carbon Disulfide
WAM7UH	✓			✓ 74	19 hours	Carbon/Charcoal	carbon disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption	
	Passive	Dynamic	Rm Temp	Heated (°C)				
WC9EUP	✓		✓	✓	120			
WCTVAT	✓		✓			16 hours	Carbon/Charcoal	CS2
WGPMHP	✓			✓	80	6hr	Carbon/Charcoal	CS2
WNKPK2	✓			✓	60	16 hours	Carbon/Charcoal	carbon disulfide
WWV7TL	✓			✓	65	16 hours	Carbon/Charcoal	CS2
WYM3HF	✓			✓	65	19.75 hours	Carbon/Charcoal	carbon disulfide
X64XYA	Other Extraction Technique: Solvent Extraction (n-Pentane)							
XBRLTF	✓			✓	95	24 hrs	Carbon/Charcoal	Dichloromethane
XE9H7P	✓			✓	~70	~17 hours	Carbon/Charcoal	Carbon disulfide
XEVQD9	✓		✓	✓	80	2 days for room temperature or 3 hours for 80°C	Tenax	Thermal
XJNQUP	✓			✓	80	5 hours	Carbon/Charcoal	Carbon Disulfide
XMPYXY	✓			✓	76	~17 hours	Carbon/Charcoal	CS2
XVXXL3	✓			✓	80	6 hours	Carbon/Charcoal, Tenax TA	carbon disulfide, Thermal
	Other Extraction Technique: Static headspace sampling of vapors at room temperatures with gas tight syringe. Injected volume 2 ml. GC-MS.							
XZBBA9	✓			✓	60-70	~18hrs	Carbon/Charcoal	Carbon Disulfide
Y8QAHT	✓			✓	70	12-16 Hours	Carbon/Charcoal	Carbon Disulfide
YCZPQG	✓			✓	60-70	16 hours	Carbon/Charcoal	Carbon Disulfide
YGUJNH	✓			✓	75.0	3.2 hours	Carbon/Charcoal	carbon disulfide
YJKDEE	✓			✓	80	8 h	Carbon/Charcoal	Methylene chloride and butan-1-ol
YKU33X	✓			✓	66	16 hours	Carbon/Charcoal	CS2
YMJQZJ	✓			✓	65	16 hours	Carbon/Charcoal	carbon disulfide
YPPLQU	✓			✓	80	4 hours	Carbon/Charcoal	Pentane
YT7UEU	✓			✓	~90	16 hours	Carbon/Charcoal	carbon disulfide

TABLE 2

WebCode	Adsorption Headspace		Adsorption Temp		Adsorption Duration	Adsorbent	Desorption	
	Passive	Dynamic	Rm Temp	Heated (°C)				
YWKNT7	✓			✓ 70	3 hours	Carbon/Charcoal	Carbon disulfide	
Z84TTW	✓			✓ 60	16 hours	Carbon/Charcoal	CS2	
ZAANJ9		✓		✓ 80	5 minutes	Carbon/Charcoal	pentane	
ZCEBZJ	✓			✓ 65	16 hrs	Carbon/Charcoal	CS2	
ZGBZGQ	✓			✓ 68	18 hours	Carbon/Charcoal	CS2	
ZH4JCJ	✓		✓	✓ 70		SPME(black)	Thermal	
Other Extraction Technique: solvent extraction								
ZKNZEH	✓			✓ 60	16 hours	Carbon/Charcoal	carbon disulfide	
ZL4RFU	✓			✓ 70	16 hours	Carbon/Charcoal	CS2	
ZNAM86	✓			✓ 70	2.5 hours	Carbon/Charcoal	carbon disulfide	
Response Summary								
Participants	<u>Adsorption Headspace</u>		<u>Adsorption Temp</u>		<u>Adsorbent</u>		<u>Desorption</u>	
	Passive	Dynamic	Rm Temp	Heated	Carbon/Charcoal	Other	Thermal	Solvent
284	261	17	38	255	234	37	29	236

Identification Techniques

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
238LMU		✓		4ZT7HC		✓		8V4ZBC	✓	✓	
242A8A		✓		6233F9		✓		8WXFEF		✓	
2A8D3V		✓		6879TQ		✓		8YPC3A		✓	
2EZ62Y		✓		6AX6GK		✓		8ZEB2L		✓	
2GQ7A9		✓		6J2RGP		✓		9DJV2P		✓	
2JCT3V	✓	✓		6JFERC		✓		9HW2RR		✓	
2JRECX		✓		6L8D7B		✓		9HY4PP		✓	
2JW2ZJ		✓		6NTYYX		✓		9J7782		✓	
2LJBZR		✓		6RDEHK		✓		9LXHDE		✓	
2MTFEF		✓		6T7YVP		✓		9PWWXJ		✓	
2UQ8MA		✓		6VEMMV		✓		9UAT77		✓	
36AE7C		✓		6WMURA		✓		9XRLAZ		✓	
3EWCWG		✓		72GLHX		✓		A49UGP		✓	
3GZ8DY		✓		73A6EC		✓		A66UAG		✓	
3JR43T		✓		79ZENB		✓		ACZWBT		✓	
3RLCMJ		✓		7FFX7P		✓		AGG6YR		✓	
3UMGZ4		✓		7N97QF		✓		ALU6VJ		✓	
3V6Y9Y		✓		7NNPBD		✓		AML2KD		✓	
49M7KQ		✓		7QZ66E		✓		AQNVV7		✓	
49N9JN	✓	✓		7VAKE3		✓		AR299D	✓		
4AF69H		✓		879HZG		✓		ATPCNH	✓	✓	
4CMM8D		✓		8A42ND		✓		AV2J3R		✓	
4DDD6J		✓		8EJACD		✓		AVH9CC		✓	
4GDNYY		✓		8N8VB4		✓		AYZVXR		✓	
4LANMM		✓		8NNGRD		✓		AZBZCF		✓	
4MNHHA	✓	✓		8QB4KZ		✓		AZPWNT		✓	
4Q7AC6		✓		8RNRMD		✓		B3A4MF		✓	
4QKVNR		✓		8TKFGP		✓		B3UCNQ		✓	
4WUM7K		✓	GC-MS-ATD	8TZ6RA		✓		B7AEJF		✓	

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
BBPM8E		✓		E6TNY9		✓		GLTQY6		✓	ATD/GC/MS
BC4B97		✓		E8D9QB		✓		GQYJT2		✓	
BGGJPX	✓	✓		ECQQ9R		✓		H3TPFQ		✓	
BKCBVA		✓		EEHCWW		✓		H9YFHW		✓	
BNU6HE		✓		EKLJAE		✓		HDA4ZL		✓	
BUKMAR		✓		EXNG6J		✓		HFV9QQ		✓	
BVD9NW		✓		EYPKCV		✓		HGBFC9		✓	
BW8NTK	✓	✓		EZXWRC		✓		HKCGEQ		✓	
C4ZL48	✓	✓		F3H94M		✓		HMDPJZ		✓	
C6FD7J		✓		F6LADD		✓		HQX7JD		✓	
C87G4W		✓		F8B9J3		✓		HUED8D		✓	
C9YBYF		✓		FA369W		✓		J8GUJE		✓	
CCHUT4		✓		FAHNQ9		✓		J8YFZP		✓	
CGQH4K		✓		FDWVYL		✓		J98KFY		✓	
CRQG6L	✓	✓		FGETRH	✓	✓	assess any unavoidable odor	JA7XGT		✓	
CV8F9K		✓		FJ8CNW		✓		JGM4XC		✓	
CWP8KQ		✓		FJL9ZA		✓		JJCZEY		✓	
CXGT7A		✓		FKF2VT		✓		JRMUGY		✓	
CY7R6K		✓		FPTACK	✓	✓	GC/FID	JUVEFF		✓	
CYRT34		✓		FQLXXZ		✓		K8FNQ6		✓	
CZ9PV4		✓		FVC6ZM		✓		KBXD4A	✓	✓	
D4F8D9		✓		FVWLFP		✓		KG2KJC		✓	
D6ALR9		✓		G4PD2N		✓		KGK4Q6		✓	
D99WM9		✓		G6YQYC		✓		KJQFPF			Passive Headspace GCMS
DDRUF6		✓	TD-GC-MS	G8QPCB		✓		KNJLPU		✓	
DK4HZB		✓		GDBKZD		✓		KPCEKD		✓	GC/FID
DMVEP6		✓		GF3FP8		✓		L2KEUB		✓	
DUCKE4		✓		GFH8QJ		✓		L7HXXV		✓	
DZZZQA	✓	✓		GJ2UAB		✓		LAW4MW		✓	
E32RBE	✓	✓									

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
LER8LN		✓		PXVBDF		✓		U2D3QD		✓	
LHQJGN		✓		PZKFAU		✓		U434XM		✓	
LLTGRF		✓		PZZ8C7		✓		U6WK2Q		✓	
LNZYQC	✓	✓	Odor Assessment	Q7GRJV		✓		UJXTPD		✓	
LUMCKR		✓		Q99QWU		✓		UUFWP4		✓	
LYEJ4Z		✓		Q9PEA2		✓		UZ8CPP		✓	
M8RUWR		✓		QJNKB9	✓	✓	Odor assessment	V3RN2Z		✓	
MEMWX4		✓		QK7YUY		✓		V7LHY2		✓	
ML932H		✓		QLDGRU		✓		VAAG9D		✓	
MTA38K		✓		QTWKXB		✓		VDLRYL		✓	
MW8VCU		✓		QWG4RY		✓		VEGK2D		✓	
N7CVC3		✓		R3JXEM		✓		VFRMPX		✓	
N9ETLA		✓		R4BWTk		✓		VQDE6G		✓	
NB7PA4		✓		R6QT6X		✓		W24ZVP		✓	
NGQKX7		✓		REAUDY		✓		W4ZNP2		✓	
NH7GP7		✓		RKEQYK		✓		W6BZDB		✓	
NHHFLZ		✓		RRYT62		✓		W8ZYK2		✓	
NMZ9NA		✓		RRZW4Y		✓		WAM7UH		✓	
NQVZW7		✓		RTQPTV		✓		WC9EUP		✓	
NVB8K7		✓		RWUKCY		✓		WCTVAT		✓	
NW3VPY		✓		T6JZQL		✓		WGPMHP		✓	
NXBBW6		✓		T9JCLL		✓		WNKPK2		✓	
NZJQJX		✓		TAULPZ		✓		WWW7TL		✓	
P3LLME		✓		TB992M		✓		WYM3HF		✓	
PK6EBH		✓		TE8LMQ		✓		X64XYA		✓	
PLX9W		✓		TJMUBQ		✓		XBRLTF		✓	
PMVFJR		✓		TM4UEP		✓		XE9H7P		✓	
PQBFPD		✓		TNE2TY		✓		XEVQD9	✓	✓	
PUU397		✓		TPLGZ6		✓		XJNQUP		✓	
PVML6K		✓		TZ6V38		✓		XMPYXY		✓	

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
XVXXL3	✓	✓	ATD-GC-MS								
XZBBA9		✓									
Y8QAHT	✓	✓									
YCZPQG		✓									
YGUJNH		✓									
YJKDEE		✓									
YKU33X		✓									
YMJQZJ		✓									
YPPLQU		✓									
YT7UEU	✓	✓									
YWKNT7		✓									
Z84TTW		✓									
ZAANJ9		✓									
ZCEBZJ		✓									
ZGBZGQ		✓									
ZH4JCJ		✓									
ZKNZEH		✓									
ZL4RFU		✓									
ZNAM86		✓									

Response Summary		
Participants	GC	GC/MS
284	21	282

Conclusions

TABLE 4

WebCode	Conclusions
238LMU	Exhibits 1-2 were each analyzed and determined to contain a medium petroleum distillate. Examples of a medium petroleum distillate include, but are not limited to, some charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. Exhibit 3 was analyzed, and no common ignitable liquid residue was detected. This conclusion is based upon gas chromatography-mass spectrometry (GC-MS) analysis of concentrated headspace vapors from each sample.
242A8A	Item 1: Medium to Heavy Alkanes (n-C11-n-C14) was detected on item 1, which are components derived from petroleum found in ignitable liquids such as candle oils, lamp oil or copier toners. Item 2: Light to Heavy Alkanes (n-C8-n-C16) was detected on item 2, which are components derived from petroleum found in ignitable liquids such as candle oils, lamp oil or copier toners.
2A8D3V	Lab item 1: Medium petroleum distillate ignitable liquid residue was identified. Examples of this include but are not limited to some charcoal starters, some paint thinners, and some dry cleaning solvents. Lab item 2: Medium petroleum distillate ignitable liquid residue was identified. Examples of this include but are not limited to some charcoal starters, some paint thinners, and some dry cleaning solvents. Lab item 3: No ignitable liquids were identified. This item is listed as a comparison or control sample. This comparison or control sample was analyzed, and the results were used in evaluating possible matrix influences.
2EZ62Y	Item 1: Class 0.5 - Most probably a "Solvent Feedstock" Item 2: Class 0.5 - Most probably a "Lamp oil" Both ignitable liquids are not identical.
2GQ7A9	A petroleum distillate (medium range) was identified in specimens #1 and #2. Examples of medium petroleum distillates include some paint thinners, charcoal starters, tiki torch fuel, and cleaning solvents. No ignitable liquids were detected in specimen #3. The specimens were extracted by passive headspace extraction with activated charcoal then analyzed by gas chromatography-mass spectrometry. Disclaimer: The absence of an ignitable liquid does not rule out the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that may have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background material.
2JCT3V	Description of Evidence: Item #1 - Questioned piece of cardboard sealed in a nylon evidence bag. Item #2 - Questioned piece of cardboard sealed in a nylon evidence bag. Item #3 - Cardboard substrate intended as a comparison blank sealed in a nylon evidence bag. Results/Opinions/Interpretations of Fire Debris Analysis Item # 1, Item #2, and Item #3 The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/mass spectrometry. Item #1 is positive for a Medium Petroleum Distillate (e.g. Lamp Oils, Camping Fuels, Candle Oils, etc.) was detected. Item #2 is positive for a Medium Petroleum Distillate (e.g. Mineral Spirits, Charcoal Starters, Fuel Additives, etc.) was detected. Item #3 was analyzed as a comparison sample. Disposition of Evidence: The unanalyzed portion of each activated charcoal strip is being returned to the submitting agency along with the submitted evidence.
2JRECX	Laboratory Items #1 and #2: A medium petroleum distillate was identified. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners, and some lamp oils. The identification of an ignitable liquid residue on tested evidence does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquid residues.
2JW2ZJ	Item 1: An ignitable liquid classified as a medium petroleum distillate was detected. Examples of medium petroleum distillates include some charcoal starters, lamp oils, and mineral spirits. Item 2: An ignitable liquid classified as a medium petroleum distillate was detected. Examples of medium

TABLE 4

WebCode	Conclusions
	petroleum distillates include some charcoal starters, lamp oils, and mineral spirits. Item 3: An ignitable liquid was not detected.
2LJBZR	Item 1: Flammable liquid detected. Serie of n-alkane with interstitial peaks of isoalkanes with gaussian distribution from nC11 to n-C12. It is medium de-aromatized petroleum distillate, mineral spirit type. Item 2: Flammable liquid detected. Serie of n-alkane with interstitial peaks of isoalkanes with gaussian distribution from nC9 to n-C12. It is medium de-aromatized petroleum distillate, mineral spirit type.
2MTFEF	A C11 to C12 Petroleum Distillate, dearomatized, was detected. Product may be a carcoal starter, lamp oil oder a special solvent.
2UQ8MA	A medium petroleum distillate was present in Item 1 and Item 2. This class includes some charcoal starters, some mineral spirits, some paint thinners, some lamp oils, and many proprietary formulations. No ignitable liquid residues were detected in Item 3.
36AE7C	CTS 23-5436-a (Item 1): Instrumental analysis of this exhibit revealed the presence of a medium petroleum distillate. Products in this range include, but are not limited to: mineral spirits, some paint thinners, some charcoal starters, "dry cleaning" solvents, some torch fuels, some solvents for insecticides and polishes, and some lamp oils. CTS 23-5436-b (Item 2): Instrumental analysis of this exhibit revealed the presence of a medium petroleum distillate. Products in this range include, but are not limited to: mineral spirits, some paint thinners, some charcoal starters, "dry cleaning" solvents, some torch fuels, some solvents for insecticides and polishes, and some lamp oils. CTS 23-5436-c (Item 3): Instrumental analysis of this exhibit did not reveal the presence of any ignitable liquid residue. It should be noted that ignitable liquids are volatile products that may be lost through evaporation, totally consumed during a fire, or indistinguishable from background materials. A negative result for the detection of an ignitable liquid can indicate that one was never used, but it does not preclude its presence or use in a fire. Results were confirmed by the following instrumentation: Gas Chromatograph/Mass Spectrometer
3EWCWG	The analysis completed in this case utilized the gas chromatograph/mass spectrometer. The results apply only to the sample(s) received. The evidence, including the sample used in analysis, will be returned to the agency. Items 1A and 1B each contain an ignitable in the medium petroleum distillate class. Examples of products in the medium petroleum distillate class include some charcoal starters, paint thinners, lamp oils, torch fuels and dry cleaning solvents. Item 1C was analyzed and no ignitable liquids were identified. It should be noted that ignitable liquids may evaporate or can be totally consumed during a fire. A negative finding of ignitable liquids does not preclude its presence during a fire.
3GZ8DY	Item 1 contained a small cardboard swatch (approx 5cm x 5cm) which was found to contain components of a medium petroleum distillate. Item 2 contained a small cardboard swatch (approx 5cm x 5cm) which was found to contain a medium petroleum distillate (e.g. white spirits or similar product). Item 3 contained a small cardboard swatch (approx 5cm x 5cm). No accelerant was detected in this item. The medium petroleum distillate found in item 1 was either a specialty product or a weathered version of the medium petroleum distillate detected in item 2.
3JR43T	Exhibits 1 and 2 each contained a medium petroleum distillate (MPD), which is an ignitable liquid. Examples of medium petroleum distillates include some solvents, some paint thinners, and some charcoal starters. No ignitable liquids were identified in Exhibit 3.
3RLCMJ	[No Conclusions Reported.]
3UMGZ4	Medium petroleum distillate residues were detected in Item 001-01 Medium petroleum distillate residues were detected in Item 001-02. No common ignitable liquid residues were detected in Item 001-03.
3V6Y9Y	A medium petroleum distillate was identified in Lab Items 1 and 2. No ignitable liquids were identified in Lab Item 3. Negative results do not preclude the possibility that ignitable liquids were present at the

TABLE 4

WebCode	Conclusions
	fire scene. Samples of recovered materials from this case have been preserved with the evidence. Analysis method: Carbon trap followed by Gas Chromatography/Mass Spectrometry.
49M7KQ	Item 1: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 2: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 3: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). Ignitable liquids were not identified in the sample.
49N9JN	METHODS: Items 1.1, 2.1, and 3.1 were analyzed with a gas chromatograph-flame ionization detector (GC-FID) and a gas chromatograph-mass spectrometer (GC-MS) for the identification of ignitable liquids. RESULTS AND CONCLUSIONS: Items 1.1 and 2.1 were each found to contain a medium petroleum distillate. Examples include, but are not limited to: some charcoal starters, some paint thinners, and some mineral spirits. Item 3.1 was used as a control.
4AF69H	Items 1, 2, and 3 were examined using passive headspace adsorption. The extracts recovered from items 1, 2, and 3 were examined by gas chromatography/mass spectrometry (GC/MS). The extracts from items 1 and 2 were found to contain a volatile mixture which was identified as a medium petroleum distillate (MPD). Examples of medium petroleum distillates include some charcoal lighters, some paint thinners and some organic solvents. No common ignitable liquid residues were detected in the extract from item 3. This does not preclude the possibility that an ignitable liquid may have been present at an earlier time. Ignitable liquids are volatile compounds that could have evaporated, been consumed in a fire, environmentally altered or removed, or are otherwise indistinguishable from background materials.
4CMM8D	Items 1 and 2 each contained a medium-range petroleum distillate (MPD). Examples of MPDs include charcoal starters and lamp oils. No ignitable liquids were identified in item 3.
4DDD6J	The questioned piece of cardboard sealed in a nylon evidence bag (ITEM 1) and The questioned piece of cardboard sealed in a nylon evidence bag (ITEM 2) Were found to contain an ignitable liquid consistent with medium petroleum distillates (De-aromatized).
4GDNY Y	Item 01 was analyzed by gas chromatography/mass spectrometry and determined to contain a medium naphthenic-paraffinic product ASTM class ignitable liquid. Examples of this ASTM class are some charcoal starters, insecticides, and lamp oils. Item 02 was analyzed by gas chromatography/mass spectrometry and determined to contain a medium petroleum distillate ASTM class ignitable liquid. Examples of this ASTM class are some charcoal starters, paint thinners, and lamp oils. Item 03 was analyzed by gas chromatography/mass spectrometry; however, ignitable liquids could not be detected.
4LANMM	Analysis by Gas Chromatography/Mass Spectrometry of the cardboard (Item 1A) detects the presence of a medium petroleum distillate (MPD). Examples of MPD's include: some torch fuels, mineral spirits, some paint thinners, some charcoal starters, some lamp oils, some dry cleaning solvents and some solvents for insecticides and polishes. Analysis by Gas Chromatography/Mass Spectrometry of the cardboard (Item 1B) detects the presence of a medium petroleum distillate (MPD). Examples of MPD's include: some paint thinners, mineral spirits, some charcoal starters, some torch fuels, some lamp oils, some dry cleaning solvents and some solvents for insecticides and polishes. Analysis by Gas Chromatography/Mass Spectrometry of the cardboard (Item 1C) fails to detect the presence of any ignitable liquids.
4MNHHA	Examination and analysis performed on item 1 revealed the presence of a medium petroleum distillate (an ignitable liquid). Examination and analysis performed on item 2 revealed the presence of paint thinner (an ignitable liquid). Examination and analysis performed on item 3 did not reveal the presence of ignitable liquids.

TABLE 4

WebCode	Conclusions
4Q7AC6	Items 1 and 2 contain an ignitable liquid classified as a medium petroleum distillate (MPD). Examples of MPDs include: some charcoal starters, some paint thinners, and some mineral spirits. No ignitable liquid was detected in Item 3.
4QKVNR	Results: Items 1 and 2; Exhibits 1 and 2: A medium petroleum distillate was detected. Examples of which include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. Items 3; Exhibits 3: No ignitable liquid was detected No conclusions are made on the report.
4WUM7K	item number 1, 2 are Medium petroleum distillate with abundance of n-alkanes and branched alkanes. aromatic compounds are absent .
4ZT7HC	A medium petroleum distillate was identified in items 1 and 2. Medium petroleum distillate products include, but are not limited to, some charcoal starters, paint thinners and dry cleaning solvents. No common ignitable liquid was identified in item 3. Some conditions which could lead to this result are: A. No common ignitable liquid was present in the material analyzed. B. An ignitable liquid was present but below quantities required for a positive identification. C. An uncommon ignitable liquid was present. The activated charcoal strips prepared by the laboratory for the analysis of items 1, 2 and 3 were packaged for return in items 1, 2 and 3, respectively.
6233F9	Naphthenic Paraffinic Products was determined in item 1. Naphthenic Paraffinic Products was determined in item 2. No ignitable was determined in item 3.
6879TQ	Item 1.1 piece of cardboard Analysis Result: The piece of cardboard contained a medium petroleum distillate product. Examples of medium petroleum distillate products include some charcoal starters and some paint thinners. Item 1.2 piece of cardboard Analysis Result: The piece of cardboard contained a medium petroleum distillate product. Examples of medium petroleum distillate products include some paint thinners and some charcoal starters. Item 1.3 piece of cardboard (comparison blank) Analysis Result: No ignitable liquids were identified in the piece of cardboard (comparison blank). Analysis performed using passive headspace concentration with activated charcoal and gas chromatography with mass spectrometry. The untested portion of the charcoal strip(s) used in the examinations in this case are contained in glass vials in the respective container(s).
6AX6GK	The questioned piece of cardboard item 1 and 2 was found to contain petroleum distillates of medium range. Item piece No 1 was found to be partially evaporated with the lost of lesser volatile components. It has a partial profile of item 2.
6J2RGP	Items 1 and 2 consist of cardboard cuttings. Both of these items were found to contain medium petroleum distillates.
6JFERC	Results and Conclusions: Items 1 and 2 each contain a medium petroleum distillate. Examples of products that contain a medium petroleum distillate include, but are not limited to, some charcoal starters, some mineral spirits, and some paint thinners. No ignitable liquids were detected in item 3, reported to be a comparison blank.
6L8D7B	A medium petroleum distillate was identified in items 1 and 2. Medium petroleum distillate products include, but are not limited to, some charcoal starters, paint thinners, and dry cleaning solvents. No common ignitable liquid was identified in item 3. Some conditions which could lead to this result are: A. No common ignitable liquid was present in the material analyzed. B. An ignitable liquid was present but below quantities required for a positive identification. C. An uncommon ignitable liquid was present. The activated charcoal strips prepared by the laboratory for the analysis of items 1, 2 and 3 were packaged for return in items 1, 2 and 3, respectively.
6NTYYX	Item 1 - A medium petroleum distillate was detected on Item 1, similar to a citronella torch fuel. Item 2 - A medium petroleum distillate was detected on Item 2, similar to a charcoal lighter fluid, fuel injector cleaner or a mineral spirit paint thinner. Item 3 - No flammable liquid was detected on Item 3, the control.

TABLE 4

WebCode	Conclusions
6RDEHK	1. In the sample received and identified as item 1, it was detected the presence of a hydrocarbon mixture classifiable according to the scheme proposed by ASTM E 1618-19 Standard Methods as petroleum medium distillate. 2. In the sample received and identified as item 2, it was detected the presence of a hydrocarbon mixture classifiable according to the scheme proposed by ASTM E 1618-19 Standard Methods as petroleum medium distillate. 3. In the sample received and labeled as item 3, it were not detected any mixture which can be classified in the scheme proposed by the ASTM E 1618-19 Standard Method. 4. The medium petroleum distillates are a ignitables liquids. Ignitable liquid may start or accelerate a fire. The identification of an ignitable liquids residue in the item 1 and 2, does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquid residues.
6T7YVP	GC/MS analysis of Item 001-01 disclosed the presence of a medium petroleum distillate. Examples of a medium petroleum distillate include, but are not limited to, some charcoal starters and some paint thinners. GC/MS analysis of Item 001-02 disclosed the presence of a medium petroleum distillate. Examples of a medium petroleum distillate include, but are not limited to, some charcoal starters and some paint thinners. GC/MS analysis of Item 001-03 failed to disclose the presence of an ignitable liquid.
6VEMMV	Findings: Item 1: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 2: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 3: No ignitable liquids were found
6WMURA	Residues of a medium petroleum distillate (MPD) were identified on Item 1 when compared to Item 3. This MPD encompassed a carbon range of approximately C10 to C11. Residues of a MPD were identified on Item 2 when compared to Item 3. This MPD encompassed a carbon range of approximately C9 to C12.
72GLHX	Analysis of Item 1 revealed the presence of a medium petroleum distillate (MPD). Examples of this class are charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. Analysis of Item 2 revealed the presence of a medium petroleum distillate (MPD). Examples of this class are charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides.
73A6EC	Analysis identified the presence of a medium petroleum distillate in items 1 and 2. No ignitable liquids were identified in the comparison sample.
79ZENB	A medium Petroleum Distillate has been identified in Item 1 and Item 2.
7FFX7P	In Item 1 and Item 2, ignitable liquids were found, belonging to the class "Medium Petroleum Distillate", according to ASTM 1619-19 classification scheme. They are de-aromatized, which means that aromatic compounds were removed in an additional technological process to decrease the odor and toxicity of these liquids. The ignitable liquids from this class are sold as solvents/diluters, kerosene, lamp oils, charcoal starter, and mineral spirits. Liquids from this class are also used as ingredients (solvents) in some more complex formulations (products) such as insecticides or spray lubricants. The liquids found in Item 1 and Item 2 differ in composition, but these differences may be explained by the evaporation of more volatile compounds. Therefore, it is possible that traces of ignitable liquids found in Item 1 and Item 2 have the same origin, meaning they are traces of the same ignitable liquid, just more evaporated in Item 1.
7N97QF	Item 1 contains a medium petroleum distillate. Item 2 contains a medium petroleum distillate.
7NNPBD	A naphthenic-paraffinic product in the medium range was identified in item 1. Examples of naphthenic-paraffinic products in the medium range include, but are not limited to, some charcoal starters, some insecticide vehicles, and some lamp oils. A petroleum distillate in the medium range was identified in item 2. Examples of petroleum distillates in the medium range include, but are not limited

TABLE 4

WebCode	Conclusions
	to, some charcoal starters, some paint thinners and some dry-cleaning solvents. No ignitable liquid residues were identified in item 3.
7QZ66E	1. Item1 contains medium petroleum distillates 2. Item2 contains medium petroleum distillates
7VAKE3	Item 1 - Questioned piece of cardboard: A medium range (C8-C13) de-aromatized petroleum distillate product was identified in the sample. This identification is based on the ASTM 1618 Classification Scheme. Examples of commercial products of this class include: Paint thinners, mineral spirits, lamp oils and kerosene. Item 2 - Questioned piece of cardboard: A medium range (C8-C13) de-aromatized petroleum distillate product was identified in the sample. This identification is based on the ASTM 1618 Classification Scheme. Examples of commercial products of this class include: Paint thinners, mineral spirits, lamp oils and kerosene. Item 3 - Cardboard substrate (comparison blank): Item 3 was submitted for substrate comparison to the other two samples. No ignitable liquids were detected in Item 3.
879HZG	In my opinion, residues of de-aromatized medium petroleum distillates have been detected from Item 1 and Item 2.
8A42ND	A naphthenic-paraffinic product in the medium range was identified in Item 1, examples of which include charcoal starters, insecticides, and lamp oils. A petroleum distillate in the medium range was identified in Item 2, examples of which include paint thinners, dry cleaning solvents, and mineral spirits. There were no ignitable liquids identified in Item 3.
8EJACD	An ignitable liquid classified as a medium petroleum distillate was detected in items 1 and 2. Examples of medium petroleum distillates include charcoal starters, paint thinners, or dry cleaning solvents. An ignitable liquid was not detected in item 3.
8N8VB4	A medium petroleum distillate profile was detected in items 1 and 2. Some examples of medium petroleum distillate products include charcoal starters, paint thinners, and lamp oils. No ignitable liquid profile was detected in Item 3. Item 1 The profile for Item 1 contained n-alkanes (e.g. undecane), and other alkanes (branched and cycloalkanes) in the medium n-alkane range (~C11 – C12). I concluded the profile meets the ASTM E1618 requirements for a distillate product profile. Item 2 The profile for Item 2 contained n-alkanes (e.g. decane, undecane), and other alkanes (branched and cycloalkanes) in the medium n-alkane range (~C9 – C12). I concluded the profile meets the ASTM E1618 requirements for a distillate product profile. Item 3 No ignitable liquid profile was detected in Item 3. The analysis cannot determine how or when the product came to be part of the item – the analysis simply detects the presence of the components. Note 1: The analysis includes testing for the presence of the following classes of ignitable liquids/residues: gasoline; light, medium, and heavy subclasses of petroleum distillates, isoparaffinic products, naphthenic-paraffinic products, aromatic products, normal alkane products, oxygenated solvents (including light volatile organic compounds such as methanol, ethanol, isopropanol, and acetone), and miscellaneous/other (ASTM E1618). Note 2: For clarification, a “C” followed by a number indicates a n-alkane containing that number of carbons (i.e. “C8” corresponds to octane, etc.).
8NNGRD	Items 1 through 3 were examined using passive headspace adsorption. The extracts recovered from Items 1 through 3 were examined by gas chromatography/mass spectrometry. Items 1 and 2 were found to contain a volatile mixture identified as a medium petroleum distillate. Examples of such mixtures include some charcoal lighters, some paint thinners, and some organic solvents. No common ignitable liquid residues were detected in the comparison sample (Item 3). This does not preclude the possibility that an ignitable liquid may have been present at an earlier time. Ignitable liquids are volatile compounds that could have evaporated, been consumed in a fire, environmentally altered or removed, or are otherwise indistinguishable from background materials.
8QB4KZ	A medium petroleum distillate was identified in items 1 and 2. Examples of a medium petroleum distillate include some charcoal starters, some paint thinners, some insecticides and some mineral spirits. No ignitable liquids were detected in Item 3 comparison sample.

TABLE 4

WebCode	Conclusions
8RNRMD	Item 1 was found to contain a medium petroleum distillate. Item 2 was found to contain a medium petroleum distillate. No ignitable liquids were detected in item 3 which was analyzed as a comparison sample. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some lamp oils, and some paint thinners.
8TKFGP	Using the ASTM E1618-19 Ignitable Liquid Classification Scheme we detected that items 1 and 2 are Petroleum distillates de-aromatized or miscellaneous, subclass medium
8TZ6RA	Item 1: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 2: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 3: No ignitable liquids found.
8V4ZBC	Sample Preparation: (1) Passive Headspace Extraction Analytical Methods: (1) Gas Chromatography/Flame Ionization Detection. (2) Gas Chromatography/Mass Selective Detection. Item 1: A medium petroleum distillate product was identified. Examples of medium petroleum distillate products include mineral spirits, charcoal starters, and lamp oils. Item 2: A medium petroleum distillate product was identified. Examples of medium petroleum distillate products include mineral spirits, charcoal starters, and lamp oils. Item 3: No ignitable liquids were detected.
8WXFEF	Item 1 contained de-aromatized Medium Petroleum Distillate (predominant homologues of n-alkanes from C11 to C12). Item 2 contained de-aromatized Medium Petroleum Distillate (predominant homologues of n-alkanes in a Gaussian distribution of peaks from C9 to C12). Ignitable liquids detected on the cardboard (items 1 and Items 2) could be used as accelerants.
8YPC3A	Analysis of item 1 and 2 show presence of a medium petroleum distillate. Medium petroleum distillates gather flammable products for various applications, such as paint removers (including White Spirit), lighter fluids etc... This kind of products is readily accessible for sale.
8ZEB2L	A de-aromatized medium petroleum distillate (C11 – C12) was identified in Item 1. Examples of a de-aromatized medium petroleum distillate include some kerosene alternatives and some odorless charcoal starters. A de-aromatized medium petroleum distillate (C9 – C12) was identified in Item 2. Examples of a de-aromatized medium petroleum distillate include some odorless mineral spirits and some odorless paint thinners. No ignitable liquids were detected in Item 3. Items 1, 2, and 3 were examined visually and using gas chromatography/mass spectroscopy (GC/MS). Passive adsorption/elution extraction was performed on Items 1, 2, and 3. The activated charcoal strips used to collect volatile organic compounds with the adsorption/elution technique are contained in separate plastic vials, placed in separate, heat-sealed fire debris bags, and each was repackaged in the original item.
9DJV2P	Items #1 and #2: A medium petroleum distillate was detected. Examples of medium petroleum distillates include some paint thinners, some charcoal lighter fluids, and some specialty solvents. Item #3 (comparison): No ignitable liquids were detected.
9HW2RR	Item 1: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 2: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 3: No ignitable liquids were found
9HY4PP	EXHIBIT # AGENCY # DESCRIPTION 1 Item 1 Cardboard. Examination reveals the presence of an ignitable liquid residue in the Medium Range of the Petroleum Distillates Class. Refer to the attached Ignitable Liquid Classification System. 2 Item 2 Cardboard. Examination reveals the presence of an ignitable liquid residue in the Medium Range of the Petroleum Distillates Class. Refer to the attached Ignitable Liquid Classification System. 3 Item 3 Cardboard (comparison sample). No ignitable liquid

TABLE 4

WebCode	Conclusions
	residue as defined by the attached Ignitable Liquid Classification System was detected. Exhibits 1 through 3 were analyzed using passive adsorption on an activated charcoal strip. The strip was extracted with a solvent and the recovered volatile material was analyzed by gas chromatography/mass spectrometry. An additional charcoal strip was collected for preservation purposes and will be retained with the evidence.
9J7782	Item 1 through 3 were examined using passing headspace adsorption, and the extracts recovered were examined by Gas Chromatography / Mass Spectrometry. An ignitable liquid classified as Medium Petroleum Distillate (including De-Aromatized) was detected in Item 1. An ignitable liquid classified as Medium Petroleum Distillate (including De-Aromatized) was detected in Item 2. No ignitable liquids were detected in Item 3.
9LXHDE	Normal Alkanes are the most predominant compounds present with Gaussian distribution from C11-C12. Isoalkanes are also prominent between the normal alkane distribution. Item compares well with NCFS ILRC 0325 "Lamp Light Farms Citronella Torch Fuel" which is classified as a Medium petroleum distillate.
9PWWXJ	Item 1. Analysis confirmed a medium petroleum distillate. Item 2. Analysis confirmed a medium petroleum distillate. Item 3. Submitted as a control sample and tested for substrate background products and interferences.
9UAT77	A medium naphthenic paraffinic was detected in the extract of Item #1. Examples of medium naphthenic paraffinics include some charcoal starters, some insecticide vehicles, and some lamp oils. A medium petroleum distillate was detected in the extract of Item #2. Examples of medium petroleum distillates include some charcoal starters, some paint thinners, and some torch fuels. No ignitable liquids were detected in the extract of Item #3.
9XRLAZ	A Medium Petroleum Distillate was identified in Specimens #1 and 2. Examples of Medium Petroleum Distillates include paint thinners, some charcoal starters, some torch fuels, and cleaning solvents. The specimen was extracted by Passive Headspace Concentration extraction with activated charcoal and analyzed by Gas Chromatography/Mass Spectrometry. No ignitable liquids were detected in Specimen #3. The specimen was extracted by Passive Headspace Concentration extraction with activated charcoal and analyzed by Gas Chromatography/Mass Spectrometry. Disclaimer: The absence of an ignitable liquid does not rule out the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that may have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background material.
A49UGP	Analysis of exhibits IL-item 1 and IL-item 2 detected the presence of a medium range petroleum distillate (examples: some torch fuels, some charcoal starters, some paint thinners, etc). Analysis of exhibit IL-item 3 failed to detect the presence of an ignitable liquid. Exhibits IL-item 1, IL-item 2 and IL-item 3 were initially extracted using direct heated headspace sampling and then were further extracted by passive headspace adsorption onto activated charcoal strips. The extracts were analyzed by gas chromatography-mass spectrometry. Portions of the activated charcoal strips from these extractions, designated IL-item 1-a, IL-item 2-a and IL-item 3-a, were preserved for return to the submitting agency.
A66UAG	a) Patterns of ignitable liquid was identified in Item 1 and was found to contain a medium range NAPHTHENIC-PARAFFINIC product. According to ASTM E1618-19 Ignitable Liquid Classification Scheme, examples of these medium range naphthenic-paraffinic products include charcoal starters, insecticides, lamp oils, mineral spirits and automotive parts cleaners. b) Patterns of ignitable liquid was identified in Item 2 and was found to contain a medium range PETROLEUM DISTILLATE product. According to ASTM E1618-19 Ignitable Liquid Classification Scheme, examples of these medium range petroleum distillate products include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. c) No patterns of ignitable liquid were identified in Item 3. Based on the above findings, in my professional opinion, the patterns of ignitable liquid in Items 1 and 2 were identified as Naphthenic-Paraffinic and Petroleum Distillate, respectively.

TABLE 4

WebCode	Conclusions
ACZWBT	Item 01 was analyzed by gas chromatography/mass spectrometry and determined to contain a medium naphthenic-paraffinic product ASTM class ignitable liquid. Examples of this ASTM class are some charcoal starters, insecticides, and lamp oils. Item 02 was analyzed by gas chromatography/mass spectrometry and determined to contain a medium petroleum distillate ASTM class ignitable liquid. Examples of this ASTM class are some charcoal starters, paint thinners, and lamp oils. Item 03 was analyzed by gas chromatography/mass spectrometry; however, ignitable liquids could not be detected.
AGG6YR	A medium petroleum product was identified in Item 1. A medium petroleum product was identified in Item 2. No ignitable liquids were identified in Item 3.
ALU6VJ	The ACS sample extracts (items 1-1-1-1-2, 1-2-1-1-2, and 1-3-1-1-2) from the questioned piece of cardboard (item 1-1-1-1), the questioned piece of cardboard (item 1-2-1-1), and the cardboard substrate intended as a comparison blank (item 1-3-1-1), respectively, were not analyzed. A medium naphthenic paraffinic product was detected in the ACS sample extract (item 1-1-1-1-1) from the questioned piece of cardboard (item 1-1-1-1). Examples of medium naphthenic paraffinic products are charcoal starters, insecticides, lamp oils, mineral spirits, and automotive parts cleaners. A medium naphthenic paraffinic product was detected in the ACS sample extract (item 1-2-1-1-1) from the questioned piece of cardboard (item 1-2-1-1). Examples of medium naphthenic paraffinic products are charcoal starters, insecticides, lamp oils, mineral spirits, and automotive parts cleaners. No ignitable liquid residues were detected in the ACS sample extract (item 1-3-1-1-1) from the cardboard substrate intended as a comparison blank (item 1-3-1-1).
AML2KD	Results: Items 1-2 extracts each contain a Medium Petroleum Distillate. Examples of Medium Petroleum Distillates may include but are not limited to some charcoal starters, some paint thinners, some tiki torch fuels, some fuel injector cleaners, and some dry cleaning solvents. Item 3 extract: No ignitable liquids were identified. Item 3 was used as a comparison sample for Items 1 and 2. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene.
AQNYV7	Residues of a medium petroleum distillate (MPD) were identified in Items 1 and 2. MPDs are classified as ignitable liquids. Examples of a MPD include, but are not limited to: some paint thinners, some kerosene and some lamp oils. No ignitable liquid residues were identified in Item 3. Items 1, 2 and 3 were examined by visual observations, heated static headspace technique, followed with analysis by headspace gas chromatography mass spectrometry (GC/MS) and a passive adsorption/elution technique, followed with analysis by GC/MS.
AR299D	A medium miscellaneous products was identified in item 1. A medium petroleum distillates was identified in item 1.
ATPCNH	A medium petroleum distillate was identified in Item 1-1 and Item 1-2. Some examples of medium petroleum distillates would include some brands of torch fuels, charcoal lighter fluids, paint thinners, mineral spirits, and specialty products. No ignitable liquids were identified in Item 1-3.
AV2J3R	A medium petroleum distillate was identified in Lab Item 1. A medium petroleum distillate was identified in Lab Item 2. No ignitable liquids were identified in Lab Item 3. Negative results do not preclude the possibility that ignitable liquids were present at the fire scene. Samples of recovered materials from this case have been preserved with the evidence. Analysis method: Carbon trap followed by Gas Chromatography/Mass Spectrometry.
AVH9CC	A Naphthenic-Paraffinic Product in the medium range was identified in Item #1. Examples of which include charcoal starters, insecticides, and lamp oils. A Petroleum Distillate in the medium range was identified in Item #2. Examples of which include charcoal starters, paint thinners, and dry cleaning solvents. There were no ignitable liquids identified in Item #3.
AYZVXR	A medium petroleum distillate was identified in Lab Items 1 and 2. No ignitable liquids were identified in Lab Item 3. Negative results do not preclude the possibility that ignitable liquids were present at the

TABLE 4

WebCode	Conclusions
	fire scene. Samples of recovered materials from this case have been preserved with the evidence. Analysis method: Carbon trap followed by Gas Chromatography/Mass Spectrometry.
AZBZCF	1) In the sample received and labeled as item 1, it was detected the presence of one mixture which can be classified in the scheme proposed by the ASTM E 1618-19 Standard Methods as Medium Petroleum Distillates. Examples of the product detected are some torch fuels and some lamp oils. 2) In the sample received and labeled as item 2, it was detected the presence of one mixture which can be classified in the scheme proposed by the ASTM E 1618-19 Standard Methods as Medium Petroleum Distillates (varsol and/or mineral spirit). 3) In the sample received and labeled as item 3, it were not detected any mixture which can be classified in the scheme proposed by the ASTM E 1618-19 Standard Method. 4) The Medium Petroleum Distillates are ignitable liquids. Ignitable liquid may start or accelerate a fire.
AZPWNT	The exhibit collected of the piece of cardboard (item 1) was found to contain medium petroleum distillate (de-aromatized) class ignitable liquid residues. Examples of medium petroleum distillate (de-aromatized) products include some formulations of: charcoal starters/lighters and lamp oils. The exhibit collected of the piece of cardboard (item 2) was found to contain medium petroleum distillate (de-aromatized) class ignitable liquid residues. Examples of medium petroleum distillate (de-aromatized) products include some formulations of: surface preparation solvents, specialty solvents, charcoal starters/lighters and lamp oils. The exhibit collected of the cardboard substrate blank (item 3) was found not to contain any detectable ignitable liquid residues.
B3A4MF	1. Volatile residues from Exhibits 1 (questioned piece of cardboard), 2 (questioned piece of cardboard), and 3 (cardboard substrate intended as a comparison blank) were collected using direct and passive headspace concentration techniques and analyzed using gas chromatography/mass spectrometry for the presence of ignitable liquid residues. 2. A medium range petroleum distillate was identified in the concentrated headspace vapors of Exhibit 1 and Exhibit 2. Ignitable liquids belonging to this class are commercially available as some charcoal starters, some paint thinners, and some dry-cleaning solvents. 3. No ignitable liquid residues were identified in the concentrated headspace vapors of Exhibit 3.
B3UCNQ	A naphthenic-paraffinic product in the medium range was identified in item 1. Examples of naphthenic-paraffinic products in the medium range include, but are not limited to, some lamp oils, some charcoal starters and some mineral spirits. A petroleum distillate in the medium range was identified in item 2. Examples of petroleum distillates in the medium range include, but are not limited to, some charcoal starters, some paint thinners and some dry cleaning solvents. No ignitable liquid residues were identified in item 3.
B7AEJF	Analysis by Gas Chromatography/Mass Spectrometry of the plastic bag and cardboard (Item 1A) detects the presence of a medium petroleum distillate (MPD). Examples of MPD's include: some lamp oils, mineral spirits, some paint thinners, some charcoal starters, some torch fuels, some dry cleaning solvents and some solvents for insecticides and polishes. Analysis by Gas Chromatography/Mass Spectrometry of the plastic bag and cardboard (Item 1B) detects the presence of a medium petroleum distillate (MPD). Examples of MPD's include: some paint thinners, mineral spirits, some charcoal starters, some torch fuels, some lamp oils, some dry cleaning solvents and some solvents for insecticides and polishes. Analysis by Gas Chromatography/Mass Spectrometry of the plastic bag and cardboard (Item 1C) fails to detect the presence of any ignitable liquids. The procedure employed does not detect the presence of light volatiles such as certain alcohols and acetone.
BBPM8E	Item 1: An ignitable liquid was identified. This liquid is a medium petroleum distillate (dearomatized). Examples of medium petroleum distillate commercial products include some charcoal starters, some paint thinners, some dry-cleaning solvents, and some torch fuels. The samples were prepared with the passive heated headspace technique, and analyzed by gas chromatography mass spectrometry. Item 2: An ignitable liquid was identified. This liquid is a medium petroleum distillate (dearomatized). Examples of medium petroleum distillate commercial products include some charcoal starters, some paint thinners, some dry-cleaning solvents, and some torch fuels. The samples were prepared with the

TABLE 4

WebCode	Conclusions
	passive heated headspace technique, and analyzed by gas chromatography mass spectrometry. Vials containing charcoal strips of vapor extracts from each item were sealed in with the evidence.
BC4B97	Items 1 and 2 were found to contain a medium-range petroleum distillate. Examples of medium-range petroleum distillates include, but are not limited to, lamp oils, charcoal starters, and mineral spirits. Item 3 was reported to be a comparison sample and no ignitable liquids were detected in this item.
BGGJPX	Medium petroleum distillates (including De Aromatized) in the range of C11 to C13 was identified in the item 1. Example of commercial product that contain medium petroleum distillates included some Charcoal Starters, Paint Thinners, Dry Cleaning Solvents, Mineral Spirits, Automotive Parts Cleaner, Spray Lubricants, Lamp Oils, Deck Sealers, Varnishes, Kerosene and insecticides. Medium petroleum distillates (including De Aromatized) in the range of C9 to C12 was identified in the item 2. Example of commercial product that contain medium petroleum distillates included some Charcoal Starters, Paint Thinners, Dry Cleaning Solvents, Mineral Spirits, Automotive Parts Cleaner, Spray Lubricants, Lamp Oils, Deck Sealers, Varnishes, Kerosene and insecticides.
BKCBVA	These samples were analyzed using GC/MS. Petroleum distillates products in the medium range were identified in item 1(C11-C12) and item 2(C8-C12).
BNU6HE	Item 1: Contains a medium petroleum distillate, examples of which include some torch fuels, white mineral oils, and charcoal starters. Item 2: Contains a medium petroleum distillate, examples of which include charcoal starters, mineral spirits and paint thinners. Item 3: No ignitable liquids were detected/identified.
BUKMAR	Laboratory items #1 and 2: A medium petroleum distillate was identified. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners and dry cleaning solvents.
BVD9NW	The submitted items were sampled for ignitable liquid residues using a passive charcoal adsorption technique on September 13, 2023. The samples were analyzed using gas chromatography with mass spectrometry. A medium petroleum distillate, an ignitable liquid, was identified in Item 1 and Item 2. Examples of medium petroleum distillates include some charcoal starters, paint thinners and dry-cleaning solvents. No ignitable liquid residues were identified in Item 3 (substrate control).
BW8NTK	Results/Opinions/Interpretations of Fire Debris Analysis Item # 1 The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/mass spectrometry. A Medium Petroleum Distillate (e.g. Lamp Oils, Charcoal Starters, Specialty Cleaning Solvents, etc.) was detected. Item # 2 The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/mass spectrometry. A Medium Petroleum Distillate (e.g. Charcoal Starters, Mineral Spirits, Paint Thinners, etc.) was detected. Item # 3 The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/mass spectrometry. The item was analyzed as a comparison sample. No ignitable liquid residues were identified. Disposition of Evidence: The unanalyzed portion(s) of the activated charcoal strip(s) has/have been placed in a trace evidence packet. The trace evidence packet will be returned to the submitting agency along with the original item(s) of evidence.
C4ZL48	In the samples 1 and 2 were detected aliphatic hydrocarbon mixtures which are originated from medium petroleum distillate's type products. The findings are classified as ignitable liquid.
C6FD7J	An ignitable liquid residue consistent with a medium petroleum distillate was identified in item #1. Examples of the medium petroleum distillate class of ignitable liquids include mineral spirits, some paint thinners, some charcoal starters, some lamp oils, some automotive parts cleaners, and some solvents for insecticides and polishes. An ignitable liquid residue consistent with a medium petroleum

TABLE 4

WebCode	Conclusions
	distillate was identified in item #2. Examples of the medium petroleum distillate class of ignitable liquids include mineral spirits, some paint thinners, some charcoal starters, some lamp oils, some automotive parts cleaners, and some solvents for insecticides and polishes. No ignitable liquid residues were detected in Item #3.
C87G4W	Item 1 - A dearomatized petroleum distillate product within the medium range (C8 to C13) was detected in Item 1 based on the ASTM 1618 classification scheme. Examples of products include: Charcoal Starters, Paint Thinners, Mineral Spirits, Dry Cleaning Solvents, Kerosene, and Lamp Oils. Item 2 -A dearomatized petroleum distillate product within the medium range (C8 to C13) was detected in Item 1 based on the ASTM 1618 classification scheme. Examples of products include: Charcoal Starters, Paint Thinners, Mineral Spirits, Dry Cleaning Solvents, Kerosene, and Lamp Oils. The products in Item 1 and Item 2 appear to be the same source material with Item 1 more affected by the arson event as shown by the extensive evaporation of the volatile portion of the sample while still matching on the heavy side of the product. Control Sample - Carpet Sample: Items 3 was provided for background substrate and was negative for the presence of accelerants.
C9YBYF	A medium petroleum distillate within the range of C11 to C13 was detected in Item 1. The medium pet A medium petroleum distillate within the range of C9 to C12 was detected in Item 2. Medium petroleum distillates include, but are not limited to, some charcoal starters and lamp oils, mineral spirits, wood treatments and preservatives, dry cleaning solvents, fabric water repellents and protectors, automotive parts cleaners, spray lubricants, varnishes, kerosene substitutes, insecticide solvents and numerous other specialty application solvents and thinners. No ignitable liquids were detected in Item 3.
CCHUT4	Item 1: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 2: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 3: No ignitable liquids found.
CGQH4K	Analysis of exhibit IL, Item 1 detected the presence of a medium petroleum distillate (examples: some torch fuels, some lamp oils, some mineral spirits, etc.). Analysis of exhibit IL, Item 2 detected the presence of a medium petroleum distillate (examples: some paint thinners, some charcoal starters, some mineral spirits, etc.). Analysis of exhibit IL, Item 3 failed to detect the presence of an ignitable liquid.
CRQG6L	According to ASTM E1618-9, the two samples can be classified as medium petroleum distillates (e.g. some charcoal starters, paint thinners, dry cleaning olvents, mineral spirits, automotive parts cleaner, spray lubricants, lamp oils, ...). Considering the chromatographic profile, item 1 may be a weathered version of item 2.
CV8F9K	Item 1: Piece of brown cardboard contained in a nylon bag. Examination reveals the presence of a Medium Range ignitable liquid residue in the Petroleum Distillates Class. Refer to the attached Ignitable Liquid Classification System. Item 2: Piece of brown cardboard contained in a nylon bag. Examination reveals the presence of a Medium Range ignitable liquid residue in the Petroleum Distillates Class. Refer to the attached Ignitable Liquid Classification System. Item 3: Piece of brown cardboard contained in a nylon bag (comparison blank). No ignitable liquid residue as defined by the attached Ignitable Liquid Classification System was detected.
CWP8KQ	ITEM 1: A dearomatised medium petroleum distillate in the range of C11-C12 was detected in the contents of this item. Medium petroleum distillates are ignitable liquids. Examples of products containing medium petroleum distillates of this type include some torch/lamp fuels and some heavily evaporated mineral spirits. ITEM 2: A dearomatised medium petroleum distillate in the range of C9-C12 was detected in the contents of this item. Medium petroleum distillates are ignitable liquids. Examples of products containing medium petroleum distillates of this type include some odourless

TABLE 4

WebCode	Conclusions
	mineral spirits which are used as paint thinners/brush cleaners. ITEM 3: The contents of this item were examined for the presence of ignitable liquid residues, and none were found.
CXGT7A	Both items #1 and #2 were found to positive for ignitable liquids classified as follows. Item #1 was found to contain medium-dearomatized distillate (C10-C12) and Item #2 was also found to contain medium-dearomatized distillate with a marginally wider distribution of species (C8-C12).
CY7R6K	Evidence addressed in this report was received into the laboratory on August 3, 2023. Analysis for diffusive ignitable liquid residues using Adsorption Trapping with Activated Charcoal, followed by Gas Chromatography/Mass Selective Detection: Items #1 and #2: Medium Petroleum Distillate, examples of which include (but are not limited to) paint thinners, dry cleaning solvents, torch fuels, mineral spirits and some brands of charcoal starter fluids. Item #3: No Ignitable Liquid Residues Identified. All Evidence will be returned to the Evidence Receiving vault. Ignitable liquid residue does not necessarily lead to the conclusion that a fire was incendiary in nature. In addition, negative results do not preclude the possibility that ignitable liquids were present.
CYRT34	A medium petroleum distillate was detected from gas chromatography-mass spectrometry analysis of headspace vapors from Item #1: 23-5436. Examples of medium petroleum distillates include some paint thinners and charcoal starter fluids. A medium petroleum distillate was detected from gas chromatography-mass spectrometry analysis of headspace vapors from Item #2: 23-5436. Examples of medium petroleum distillates include some paint thinners and charcoal starter fluids.
CZ9PV4	Residues of medium petroleum distillates were identified on Items 1 and 2. No ignitable liquid residues were identified on Item 3. Medium petroleum distillates are classified as ignitable liquids. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners, some mineral spirits, some lamp oils, and some kerosenes. Items 1 through 3 were examined visually, by a passive adsorption/elution sampling technique followed by analysis with gas chromatography/mass spectrometry, and by headspace gas chromatography/mass spectrometry.
D4F8D9	Item 1 - A medium (C8-C13) petroleum distillate was identified in the sample. Item 2 - A medium (C8-C13) petroleum distillate was identified in the sample. Item 3 - No ignitable liquids/or ignitable liquid residues were identified in the sample.
D6ALR9	Item 1 contained medium petroleum distillate (including De-Aromatized), in the range of C8-C13. Item 2 contained medium petroleum distillate (including De-Aromatized), in the range of C8-C13. Item 1 was different from item2. Item 3 was examined as a comparison sample for Item 1 and Item 2.
D99WM9	For Item 1 and Item 2, I found the traces of Medium Petroleum Distillate.
DDRUF6	Item 1: The results of the examination extremely strongly support that Item 1 contain ignitable liquid (Level +4). Item 2: The results of the examination extremely strongly support that Item 2 contain ignitable liquid (Level +4).
DK4HZB	1. Volatile residues from Exhibits 1 (questioned piece of cardboard), 2 (questioned piece of cardboard), and 3 (cardboard substrate intended as a comparison blank) were collected using simple heated headspace and passive headspace concentration techniques and were analyzed for the presence of ignitable liquid residues. Exhibit 3 was analyzed as a comparison control for Exhibits 1 and 2. 2. A medium petroleum distillate was identified in the concentrated headspace vapors from Exhibits 1 and 2. Ignitable liquids belonging to this classification are commercially available as some paint thinners, some charcoal starters, and some dry-cleaning solvents. 3. No ignitable liquid residue classifications were identified in the concentrated headspace vapors from Exhibit 3.
DMVEP6	EVIDENCE ANALYZED: Item 1.1 (Agency Item II). A heat-sealed fire debris bag containing a heat-sealed fire debris bag containing a piece of cardboard. Item 1.2 (Agency Item II). A heat-sealed fire debris bag containing a heat-sealed fire debris bag containing a piece of cardboard. Item 1.3 (Agency Item II). A heat-sealed fire debris bag containing a heat-sealed fire debris bag containing a piece of cardboard. RESULTS OF ANALYSIS: Items 1.1, 1.2 and 1.3 was extracted by passive

TABLE 4

WebCode	Conclusions
	adsorption/elution and analyzed by gas chromatography-mass spectrometry. Item 1.1. A medium petroleum distillate was identified in the heat-sealed fire debris bag. Item 1.2. A medium petroleum distillate was identified in the heat-sealed fire debris bag. Examples of medium petroleum distillates are some paint thinners, charcoal starters, and mineral spirits. Item 1.3. No ignitable liquids were identified in the heat-sealed fire debris bag. A charcoal strip preserved in a glass vial was retained with each item of evidence to be returned to the submitting agency.
DUCKE4	The analysis revealed the presence of two different patterns of ignitable liquids in item 1 and item 2 : A medium petroleum distillate de-aromatized in the range of C11 to C13 in item 1. The pattern and components identified in item 1 are consistent with the ingredients found in a torch fuel such as a Cutter Citronella brand product by example. A medium petroleum distillate de-aromatized in the range of C9 to C12 in item 2. The pattern and components identified in item 2 are consistent with the ingredients found in a product such as a mineral spirit. No ignitable liquids were detected in item 3.
DZZZQA	Item 1 and 2: Volatile components have been identified which originate from a medium petroleum distillate (de-aromatized). Item 3: No ignitable liquids have been identified.
E32RBE	Item 3: A piece of cardboard. 1. The exhibit was used as comparison to Item 1 and Item 2. Item 1 and Item 2: A piece of cardboard each. 1. The exhibit was analysed for the presence of ignitable liquid and de-aromatized medium petroleum distillate was detected. 2. Note: Examples of de-aromatized medium petroleum distillates included torch fuels and specialty /industrial solvents.
E6TNY9	Results: Items 1-2 extracts each contain a Medium Petroleum Distillate product. Examples of Medium Petroleum Distillates may include but are not limited to some charcoal starters, some paint thinners, some torch fuels, and some dry cleaning solvents. Item 3 extract: No ignitable liquids were identified. Item 3 was used as a comparison sample for Items 1 and 2. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene. Fire Debris Analysis performed on September 18 2023 – September 20, 2023 by the Forensic Chemistry Unit: All items prepared as per ASTM E1412 – Standard Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Activated Charcoal. All items analyzed and identified/classified as per ASTM E1618 – Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry.
E8D9QB	Item 1: Contains a medium petroleum distillate, examples of which include mineral spirits, paint thinners, and specialty solvents. Item 2: Contains a medium petroleum distillate, examples of which include charcoal starters, mineral spirits and paint thinners. Item 3: No ignitable liquids were detected/identified.
ECQQ9R	Within the limits of the applied methodology and after considering item 3 intended as a comparison blank, the presence of a Medium Petroleum Distillate (MPD) was detected in item 1 and in item 2. This class of ignitable liquids includes in particular some charcoal starters, paint thinners, lamp oils, kerosene and other solvents. The chemical composition of the MPD detected in item 1 is different from that of the MPD detected in item 2.
EEHCWW	Item 1 contained a cardboard square. The profile for Item 1 contained primarily alkanes, branched alkanes, and cycloalkanes in the medium range. I concluded the profile for Item 1 met the ASTM E1618 requirements for a medium petroleum distillate profile. Some examples of medium petroleum distillate products can include charcoal starters, paint thinners, and varnishes. Item 2 contained a cardboard square. The profile for Item 2 contained primarily alkanes, branched alkanes, and cycloalkanes in the medium range. I concluded the profile for Item 2 met the ASTM E1618 requirements for a medium petroleum distillate profile. Some examples of medium petroleum distillate products can include charcoal starters, paint thinners, and varnishes. Item 3 contained a cardboard square. The profile for Item 3 contained no significant peaks. Therefore, no ignitable liquid profile was detected in Item 3. The analysis cannot determine how or when the product came to be part of the item – the analysis simply detects the presence of the components. Note: The analysis includes testing for the presence of the following classes of ignitable liquids/residues: gasoline; light, medium, and heavy subclasses of petroleum distillates, isoparaffinic products, naphthenic-paraffinic products,

TABLE 4

WebCode	Conclusions
	aromatic products, normal alkane products, oxygenated solvents (including light volatile organic compounds such as methanol, ethanol, isopropanol, and acetone), and miscellaneous/other (ASTM E1618).
EKLJAE	Laboratory analysis on the item 1 and item 2 have detected a presence of a de-aromatized medium petroleum distillate. This kind of product could be find in some torsh fuel, in some fire starter liquid, etc. Laboratory analysis on the item 3 have not detected a presence of any flammable or combustible liquid nor a water soluble solvent.
EXNG6J	Item1 Analysis Result: A medium petroleum distillate was identified in the Item 1 sample. Examples of medium petroleum distillates include some charcoal lighter fluids and paint thinners. Item 2 Analysis Result: A medium petroleum distillate was identified in the Item 2 sample. Examples of medium petroleum distillates include some charcoal lighter fluids and paint thinners. Item 3 Analysis Result: No ignitable liquid was identified in the Item 3 sample. Analysis performed using passive headspace concentration with activated charcoal and gas chromatography with mass spectrometry.
EYPKCV	Item 1.1: Passive Headspace Concentration/Gas Chromatography-Mass Spectrometry disclosed the following: Medium (C8-C13) Petroleum Distillate. Examples of a Medium (C8-C13) Petroleum Distillate include some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 1.2: Passive Headspace Concentration/Gas Chromatography-Mass Spectrometry disclosed the following: Medium (C8-C13) Petroleum Distillate. Examples of a Medium (C8-C13) Petroleum Distillate include some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 1.3: passive Headspace Concentration/Gas Chromatography-Mass Spectrometry disclosed the following: No ignitable liquids/ignitable liquid residues identified. The identification of an ignitable liquid / ignitable liquid residue does not necessarily lead to the conclusion that a fire was incendiary in nature. The absence of an ignitable liquid / ignitable liquid residue does not preclude the possibility that ignitable liquids were present.
EZXRWC	[No Conclusions Reported.]
F3H94M	Laboratory Item #1 and #2: A medium petroleum distillate was identified. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners, and dry cleaning solvents. Laboratory Item #3 (Comparison Sample for Laboratory Item #1 and #2): No ignitable liquids were identified.
F6LADD	Analysis of items 01 and 02 revealed the presence of a petroleum distillate, examples of which include some cigarette lighter fluids, paint thinners, charcoal starter fluids, camping fuels, diesel fuel, and some jet fuels.
F8B9J3	[No Conclusions Reported.]
FA369W	Item 1 - Questioned piece of cardboard: A petroleum distillates (including de-aromatized) within the medium range (C8 to C13) was detected in Item 1 based on the ASTM E1618-14 classification scheme. Examples of products include Charcoal Starters, Paint Thinners, Dry Cleaning Solvents, Mineral Spirits, Automotive Parts Cleaners, Spray Lubricants, Lamp Oils, and Deck Sealers etc. Item 2 - Questioned piece of cardboard: A petroleum distillates (including de-aromatized) within the medium range (C8 to C13) was detected in Item 2 based on the ASTM E1618-14 classification scheme. Examples of products include Charcoal Starters, Paint Thinners, Dry Cleaning Solvents, Mineral Spirits, Automotive Parts Cleaners, Spray Lubricants, Lamp Oils, and Deck Sealers etc. The products in Item 1 and Item 2 appear to be the same source material with Item 1 more affected by the arson event as shown by the extensive evaporation of the volatile portion of the petroleum distillate while still matching on the medium de-aromatized distillate. Control Sample - Cardboard substrate intended as comparison blank: Items 3 was provided for background substrate and was negative for the presence of accelerants.
FAHNQ9	Item 1 Findings: n-alkanes and branched alkanes, alkenes/cycloalkanes, alkynes/cycloalkenes in the range of C10-C12. Assessment: Due to the findings it is most probable that the piece of cardboard

TABLE 4

WebCode	Conclusions
	<p>contained a medium dearomatized petroleum distillate (e.g. lamp oil (most likely), paint thinners, dry cleaning solvents, charcoal starters) Item 2 Findings: n-alkanes and branched alkanes, alkenes/cycloalkanes, alkynes/cycloalkenes in the range of C9-12. Assessment: Due to the findings it is most probable that the piece of cardboard contained a medium dearomatized petroleum distillate (e.g. paint thinners (most likely), dry cleaning solvents, charcoal starters, lamp oil) Item 3 Findings: Traces of n-alkanes and branched alkanes, alkenes/cycloalkanes, alkynes/cycloalkenes in the range of C9-12. Assessment: Due to the description of item 3 the signals were rated as background.</p>
FDWVYL	<p>Item 1: Flammable hydrocarbons in the C11-C12 range were detected, however an exact source for these is unknown. Item 1 can not be excluded from being a weathered sample of item 2 or other similar medium petroleum distillate product. Item 2: Medium petroleum distillates were detected. Products identified in this ignitable liquid category include but are not limited to charcoal starters, paint thinners, lamp oils, mineral spirits, kerosene. Comparison with Forensic Science [Country] reference materials of these products has not identified an exact source for the medium petroleum distillate identified in item 2.</p>
FGETRH	<p>The following methodologies were used in the examination of this case: visual examination, odor assessment, GC-FID and GC-MS. Examination of Items #1 and 2 revealed the presence of a medium petroleum distillate. Medium petroleum distillates include some charcoal starters and some paint thinners. Examination of Item #3 failed to reveal the presence of ignitable liquids.</p>
FJ8CNW	<p>A dearomatized medium petroleum distillate was identified in items 1 and 2. Medium petroleum distillates may include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. Dearomatized products may be labeled as odorless. No ignitable liquid residue was detected in item 3.</p>
FJL9ZA	<p>Item 1.1: An ignitable liquid was identified. The ignitable liquid is a Medium Petroleum Distillate. Examples of such products include Charcoal Lighter Fluids, Paint Thinners, and some Torch Fuels. Item 1.2: An ignitable liquid was identified. The ignitable liquid is a Medium Petroleum Distillate. Examples of such products include Charcoal Lighter Fluids, Paint Thinners, and some Torch Fuels.</p>
FKF2VT	<p>Item 1: The piece of cardboard contains a medium petroleum distillate ignitable liquid residue. Item 2: The piece of cardboard contains a medium petroleum distillate ignitable liquid residue. Item 3: The piece of cardboard contains no detectable ignitable liquid residue.</p>
FPTACK	<p>Item 1 and 2: the ignitable liquids present on the cardboard were classified as belonging to medium petroleum destillate (de-aromatized) using the ASTM-1618 classification scheme. Item 3: No ignitable liquids were identified in the control bag containing cardboard substrate.</p>
FQLXXZ	<p>A medium petroleum distillate (MPD) in the range of C11 to C12 was detected in Item #1. Examples of commercial products that contain MPDs include some charcoal lighters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp Oils, deck sealers, varnishes, kerosene and insecticides. A medium petroleum distillate (MPD) in the range of C9 to C11 was detected in Item #2. Examples of commercial products that contain MPDs include some charcoal lighters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp Oils, deck sealers, varnishes, kerosene and insecticides.</p>
FVC6ZM	<p>Item 1 - Medium petroleum distillate was detected on Item 1, similar to Citronella Torch Fuel. Item 2 - Medium petroleum distillate was detected on Item 2, similar to mineral spirits, paint thinner, fuel injector cleaner and charcoal lighter. Item 3 - No flammable liquid was detected on Item 3, control sample.</p>
FVWLFP	<p>Items #1 and #2 contained residues consistent with the medium petroleum distillate class of ignitable liquids. Examples of this class of ignitable liquids include: mineral spirits, some paint thinners, some charcoal starters, dry cleaning solvents, some torch fuels, some solvents for insecticides and polishes, and some lamp oils. No ignitable liquid residues were detected in Item #3.</p>

TABLE 4

WebCode	Conclusions
G4PD2N	Analysis of Item 1 revealed the presence of a medium petroleum distillate (MPD). Examples of this class are charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. Analysis of Item 2 revealed the presence of a medium petroleum distillate (MPD). Examples of this class are charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides.
G6YQYC	ITEMS: 1: one sealed box identified as "2023 CTS Forensic Testing Program TEST NO. 23-5436: IGNITABLE LIQUID IDENTIFICATION" containing: 1-1: a heat-sealed nylon bag containing an unburned piece of cardboard identified as "Test No. 23-5436 Item 1" 1-2: a heat-sealed nylon bag containing an unburned piece of cardboard identified as "Test No. 23-5436 Item 2" 1-3: a heat-sealed nylon bag containing an unburned piece of cardboard identified as "Test No. 23-5436 Item 3" RESULTS: Gas chromatography and mass spectrometry were used to analyze the samples in items #1-1, #1-2, and #1-3. A mid-range petroleum distillate was present in items #1-1 and #1-2. Common products containing a mid-range petroleum distillate are: charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. No ignitable liquids were identified in item #1-3.
G8QPCB	Item 1, C-10 to C-13 Range, Naphthenic-Paraffinic Product consistent with Lamp Oil. Item 2 C-8 to C-13 Range, De-aromatized Medium Petroleum Distillate
GDBKZD	Items 1 and 2: These items each consist of a piece of cardboard. These items were each found to contain a medium petroleum distillate.
GF3FP8	ITEM #: FINDINGS: 1: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents. 2: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents.
GFH8QJ	In items 1 and 2 we have detected branched alkanes, cycloalkanes, n-alkanes and naphthenic products. It can be seen that in item 1 the lighter part is evaporated compared to the composition detected in item 2.
GJ2UAB	Exhibits 1 and 2 each contained a medium petroleum distillate (MPD), which is an ignitable liquid. Examples of MPDs include some paint thinners, cleaning solvents, and charcoal starters. No ignitable liquids were identified in Exhibit 3.
GLTQY6	Item 1, item 2 and item 3 were examined for the presence of hydrocarbon fire accelerants e.g. petrol, white spirit, paraffin oil, diesel oil. Item 1 was found to contain medium petroleum distillate, examples of which include lamp oil and torch fuel. Item 2 was found to contain medium petroleum distillate, examples of which include paint thinners, charcoal starters and automotive part cleaners. No such hydrocarbon accelerants were found in item 3.
GQYJT2	A medium-range petroleum distillate in the carbon range of C11-C12 was identified in item 1. A medium-range petroleum distillate in the carbon range of C9-C12 was identified in item 2. Item 3 was evaluated as a comparison sample. Examples of medium-range petroleum distillates include, but are not limited to, mineral spirits, paint thinners, and charcoal starters.
H3TPFQ	Item # 1 - Questioned piece of cardboard sealed in a nylon evidence bag. A de-aromatized medium petroleum distillate was detected in item #1. Examples of products that contain MPDs are some charcoal lighters, some paint thinners, and some dry cleaning solvents. Item # 2 - Questioned piece of cardboard sealed in a nylon evidence bag. A de-aromatized medium petroleum distillate was detected in item #2. Examples of products that contain MPDs are some charcoal lighters, some paint thinners, and some dry cleaning solvents. Item # 3 - Cardboard substrate intended as a comparison blank sealed in a nylon evidence bag. No ignitable liquid was detected in item #3.
H9YFHW	The tests of Items 1 & 2 revealed the presence of a medium petroleum distillate which include but not limited to some charcoal starters, some paint thinners and some lamp oils. Item 3 revealed no ignitable liquids were detected in the comparison sample.

TABLE 4

WebCode	Conclusions
HDA4ZL	The following results were obtained; Item 1 - Medium petroleum distillate identified Item 2 - Medium petroleum distillate identified Item 3 - Nil ignitable liquids identified Medium petroleum distillates can include, but are not limited to, some charcoal starters.
HFW9QQ	A Medium Petroleum Distillate was identified in Item #1 and #2. Examples of Medium Petroleum Distillates include paint thinners, some charcoal starters, and some torch fuels. The items were extracted by Passive Headspace Concentration extraction with activated charcoal and analyzed by Gas Chromatography/ Mass Spectrometry. No ignitable liquids were detected in Item #3. The item was extracted by Passive Headspace Concentration extraction with activated charcoal and analyzed by Gas Chromatography/ Mass Spectrometry. Disclaimer: The absence of an ignitable liquid does not rule out the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that may have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background material.
HGBFC9	GC/MS (gas chromatography/mass spectrometry) analysis of concentrated headspace vapors from item #1 - 23-5436-1 - revealed the presence of compounds having retention times and mass ions characteristic of components of a medium petroleum distillate. Medium petroleum distillate products include some paint thinners, some charcoal starters and some dry cleaning products. GC/MS (gas chromatography/mass spectrometry) analysis of concentrated headspace vapors from item #2 - 23-5436-2 - revealed the presence of compounds having retention times and mass ions characteristic of components of a medium petroleum distillate. Medium petroleum distillate products include some paint thinners, some charcoal starters and some dry cleaning products. GC/MS (gas chromatography/mass spectrometry) analysis of concentrated headspace vapors from item #3 - 23-5436-3 - revealed the presence of compounds having retention times and mass ions characteristic of pyrolysis products and/or matrix components.
HKCGEQ	Item 1 and item 2 were extracted by passive Solid phase micro-extraction (SPME) method with heating. The headspace above the sample adsorbed on the polymer-coated fused fiber was then analyzed by gas chromatography-mass spectrometry. A Medium Petroleum Distillates (including de-aromatized) was detected in item 1 and item2. We had also used other technique, the static or direct headspace, this method consists of extracting a quantity 2 ml of the vapor phase directly with a gas syringe, and analyzed by GC-MS.
HMDPJZ	Ignitable liquids were detected on both Item 1 and Item2. Item 1 and Item2 contain medium range Petroleum Distillates.
HQX7JD	Exhibits 1 and 2 contained a medium petroleum distillate (MPD), which is an ignitable liquid. Examples of MPDs include some charcoal lighter fluids, some torch fuels, and some mineral spirits. No ignitable liquids were identified in Exhibit 3.
HUED8D	GCMS analysis of Item 001-01 (Item 1) disclosed the presence of a Medium Petroleum Distillate. Examples of a medium petroleum distillate include, but are not limited to, some charcoal starters, some paint thinners, and some torch fuels. GCMS analysis of Item 001-02 (Item 2) disclosed the presence of a Medium Petroleum Distillate. Examples of a medium petroleum distillate include, but are not limited to, some charcoal starters and some paint thinners. GCMS analysis of Item 001-03 (Item 3) COMPARISON SAMPLE, failed to disclose the presence of an ignitable liquid.
J8GUJE	Item #1-1 (Item 1): Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item #1-2 (Item 2): Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item #1-3 (Item 3): No ignitable liquids were found
J8YFZP	An ignitable liquid classified as a medium petroleum distillate was identified in Item 1. Examples of a medium petroleum distillate include, but are not limited to, some specialty solvents and torch fuels. An ignitable liquid classified as a medium petroleum distillate was identified in Item 2. Examples of a medium petroleum distillate include, but are not limited to, some charcoal lighter fluids. No recognizable ignitable liquids were identified in item 3.

TABLE 4

WebCode	Conclusions
J98KFY	RESULTS OF ANALYSIS: Item 1.1 was extracted by passive adsorption/elution and analyzed by gas chromatography-mass spectrometry. Item 1.2 was extracted by passive adsorption/elution and analyzed by gas chromatography-mass spectrometry. Item 1.3 was extracted by passive adsorption/elution and analyzed by gas chromatography-mass spectrometry. Item 1.1. A medium petroleum distillate was identified in the heat-sealed fire debris bag containing a 1.5"x1.5" piece of brown corrugated cardboard. Examples of medium petroleum distillates are some paint thinners, charcoal starters, and mineral spirits. Item 1.2. A medium petroleum distillate was identified in the heat-sealed fire debris bag containing a 1.5"x1.5" piece of brown corrugated cardboard. Examples of medium petroleum distillates are some paint thinners, charcoal starters, and mineral spirits. Item 1.3. No ignitable liquids were identified in the heat-sealed fire debris bag containing a 1.5"x1.5" piece of brown corrugated cardboard.
JA7XGT	Item 1 and 2: Analysis identified residues of a petroleum distillate (medium range). Item 3: No ignitable liquid residues were identified.
JGM4XC	Exhibits 1 and 2 contained a medium petroleum distillate (MPD), which is an ignitable liquid. Examples of MPDs include some paint thinners, some charcoal starters, and some mineral spirits.
JJCZEY	[No Conclusions Reported.]
JRMUGY	METHODS: Items 1, 2, and 3 were extracted using a passive adsorption-elution technique. The Item 1, 2, and 3 extracts were examined using Gas Chromatography-Mass Spectrometry (GC-MS). RESULTS AND INTERPRETATIONS: The Item 1 extract contained a medium petroleum distillate which can be found in, but is not limited to, some torch fuels and heater fuels. The Item 2 extract contained a medium petroleum distillate which can be found in, but is not limited to, some mineral spirits, paint thinners, and charcoal starter fluids. No ignitable liquids were identified in the Item 3 extract. Items 1, 2, and 3 were transferred to a laboratory provided airtight can for analysis. One can from the same lot/batch of laboratory provided cans was previously analyzed, served as a control can, and was found to contain no ignitable liquids. Therefore, the re-packaging of Items 1 and 2 was excluded as the source of the medium petroleum distillate identified in Items 1 and 2. Date(s) of testing: 08/14/2023 - 09/06/2023.
JUVEFF	1. Laboratory Item #3 (comparison sample for Laboratory Items #1 and #2): No ignitable liquids were identified. 2. Laboratory Items #1 and #2: A medium petroleum distillate was identified. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners and some torch fuels.
K8FNQ6	Items 1 and 2 were analyzed for the presence of ignitable liquid residues. A Medium Petroleum Distillate was detected in each Item. Examples include charcoal starters and paint thinners. Item 3 was a sample submitted for comparison. No ignitable liquid residues were detected.
KBXD4A	General description of exhibits: 1. "Item 1": A piece of unburnt cardboard. 2. "Item 2": A piece of unburnt cardboard. 3. "Item 3": A piece of unburnt cardboard, submitted for comparison with "Item 1" and "Item 2". Findings: "Item 1" and "Item 2" 4. The exhibits were analysed for the presence of ignitable liquid residues and de-aromatised medium petroleum distillate was detected. 5. Note: Some examples of de-aromatised medium petroleum distillates include charcoal starters and specialty/industrial solvents. "Item 3" 6. The exhibit was analysed for the presence of ignitable liquid residues and none were detected.
KG2KJC	Item 1 is a MPD. Item 2 is a MPD. Item 1 can be the evaporated version of item 2 OR a different product.
KGK4Q6	1. A medium petroleum distillate was detected in Exhibits 1 and 2, uses of which include, but are not limited to, some charcoal starters, some paint thinners, some mineral spirits and some lamp oils. Medium petroleum distillates are ignitable liquids and could act as a fire accelerant. 2. No ignitable liquid, or its residue, was detected in Exhibit 3.

TABLE 4

WebCode	Conclusions
KJQPPF	Ignitable liquids were detected on both Item 1 and Item 2. ITEM (1) contains medium range Petroleum Distillates ITEM (2) contains medium range Petroleum Distillates
KNJLPU	Item 1: Medium petroleum distillate was detected. Item 2: Medium petroleum distillate was detected. Item 3: Negative: No ignitable liquids were detected. Medium Petroleum Distillate: Examples of a medium petroleum distillate include mineral spirits, some charcoal starters, some torch fuels, some lamp oils, some paint thinners, some solvents for insecticides and polishes, and some dry cleaning solvents. Negative: The absence of detectable levels of ignitable liquid residues can be due to several factors, including destruction by the inherent nature of fire, evaporation prior to collection and analysis, fire suppression activities, improper packaging of sample, or lack of use of ignitable liquids.
KPCEKD	The following methodologies were used in the examination of this case: visual examination, odor assessment, GC-FID, and GC-MS. Examination of Items 1 and 2 revealed the presence of a medium petroleum distillate. Medium petroleum distillates include some charcoal starters and some paint thinners. Examination of Item 3 failed to reveal the presence of ignitable liquids.
L2KEUB	Item 1 A questioned piece of cardboard. Examination revealed the presence of an ignitable liquid residue in the Medium Range Petroleum Distillate Class. Refer to the attached Ignitable Liquid Classification System. Item 2 A questioned piece of cardboard. Examination revealed the presence of an ignitable liquid residue in the Medium Range Petroleum Distillate Class. Refer to the attached Ignitable Liquid Classification System. Item 3 Cardboard substrate (comparison sample). No ignitable liquid residue as defined by the attached Ignitable Liquid Classification System was detected. Exhibits 1 – 3 were analyzed using passive adsorption on a piece of activated charcoal. The charcoal was extracted with a solvent and the recovered volatile material was analyzed by gas chromatography/mass spectrometry. An additional charcoal strip was collected for preservation purposes and will be retained with the evidence.
L7HXXV	Item 1 contained an ignitable liquid residue identified as a medium-range petroleum distillate (MPD) with a carbon range of C11 to C12. Item 2 contained an ignitable liquid residue identified as a medium-range petroleum distillate (MPD) with a carbon range of C8 to C12. Item 3 was evaluated as a comparison sample. No ignitable liquid residues were identified in this exhibit. Due to the difference in the carbon range, the ignitable liquid residues may represent two different products. Examples of commercially available products of MPDs include, but are not limited to, charcoal lighter fluids, lamp and torch fuels, and paint thinners.
LAW4MW	According to ASTM E1618-06, Ignitable Liquid Classification Scheme (Table 1), Item 1, 2 and 3 were analyzed by gas chromatograph/mass spectrometer with using solid-phase microextraction and solvent extraction recovery techniques for cross-validation. A Medium Petroleum Distillates was identified in both Item 1 and 2 with different pattern.
LER8LN	CTS Items # 1 and 2 contain medium petroleum distillate products. Examples of medium petroleum distillate products include, but are not limited to, some charcoal starters, some paint thinners, and some mineral spirits. No ignitable liquids were detected in CTS Item #3.
LHQJGN	Item 1: The square piece of cardboard contains a medium petroleum distillate ignitable liquid residue. Examples of this type of liquid can include, but are not limited to, some charcoal starters, paint thinners, and dry-cleaning solvents. Item 2: The square piece of cardboard contains a medium petroleum distillate ignitable liquid residue. Examples of this type of liquid can include, but are not limited to, some charcoal starters, paint thinners, and dry-cleaning solvents. Item 3: An ignitable liquid residue was not detected on the square piece of cardboard.
LLTGRF	A medium petroleum distillate (MPD) was detected on the piece of cardboard (Item 1) described as coming from near two suspected ignition sites. A medium petroleum distillate (MPD) was detected on the piece of cardboard (Item 2) described as coming from near two suspected ignition sites. Examples of MPDs include some charcoal starters, some paint thinners, some torch fuels and some dry cleaning products. No ignitable liquids were detected on the cardboard substrate (item 3) intended as a comparison.

TABLE 4

WebCode	Conclusions
LNZYQC	The following methodologies were used in the examination of this case: visual examination, odor assessment, GC-FID and GC-MS. Examination of Items #1 and #2 revealed the presence of a medium petroleum distillate. Medium petroleum distillates include some charcoal starters and some paint thinners. Examination of Item #3 failed to reveal the presence of ignitable liquids.
LUMCKR	Samples 1 and 2 contained a medium petroleum distillate (MPD). This class of ignitable liquid can include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene or other related products. Sample 3 did not contain measurable levels of ignitable liquids. Please note: negative results do not preclude the presence of ignitable liquids at the time of the loss.
LYEJ4Z	Item 1 was found to contain a medium petroleum distillate. Examples of a medium petroleum distillate include but is not limited to some torch fuels and lamp oils. Item 2 was found to contain a medium petroleum distillate. Examples of a medium petroleum distillate include but is not limited to some charcoal starters. No ignitable liquids were detected in Item 3.
M8RUWR	Residues of medium petroleum distillates (MPD) were identified on Items 1 and 2. Medium petroleum distillates are classified as ignitable liquids. Examples of MPD's include, but are not limited to, some kerosenes, some charcoal starters, some paint thinners, and some lamp oils. No ignitable liquids were identified on Item 3. Items 1 through 3 were examined using a passive adsorption/elution technique followed by analysis with gas chromatography/mass spectrometry.
MEMWX4	In the samples analyzed are detected flammables liquids. They are similar samples. Number 1 may be somewhat evaporated.
ML932H	Item 1 - An ignitable liquid consistent with a medium (C10-C13) petroleum distillate was identified. Examples of the medium petroleum distillate class of ignitable liquids include mineral spirits, some paint thinners, some charcoal lighter fluids, some torch fuels, and some spray lubricants. Item 2 - An ignitable liquid consistent with a medium (C8-C12) petroleum distillate was identified. Examples of the medium petroleum distillate class of ignitable liquids include mineral spirits, some paint thinners, some charcoal lighter fluids, some torch fuels, and some spray lubricants. Item 3 - This comparison sample was analyzed and the results were used in evaluating possible matrix influences on other submitted sample(s).
MTA38K	The sample was analyzed by gas chromatography - mass spectrometry for presence of ignitable liquids. Item #1: Instrumental analysis detected presence of cycloalkanes and normal alkanes. The ignitable liquid is identified as medium, naphthenic-paraffinic products. Item 2: Instrumental analysis detected the presence of normal alkanes, isoalkanes and cycloalkanes. The ignitable liquid is identified as medium, dearomatized petroleum distillates products. Item 3: No ignitable liquids were detected in the sample.
MW8VCU	Items 1 and 2 were found to contain a medium petroleum distillate (MPD). Examples of products that contain MPDs include (but are not limited to) torch fuels and charcoal starters. No ignitable liquid residue was detected in Item 3.
N7CVC3	Item 1 was found to contain a medium petroleum distillate fraction of carbon range C10 to C13. Item 2 was found to contain a medium petroleum distillate fraction of carbon range C8 to C13. No ignitable liquids were detected in Item 3.
N9ETLA	Item 1-1 Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 1-2 Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 1-3 No ignitable liquids were found
NB7PA4	A medium petroleum distillate in the range of C11 to C13 was detected in Item 1. A medium petroleum distillate in the range of C9 to C12 was detected in Item 2. Medium petroleum distillates include, but are not limited to, some charcoal starters and lamp oils, mineral spirits, wood treatments and preservatives, dry cleaning solvents, fabric water repellents and protectors, automotive parts

TABLE 4

WebCode	Conclusions
	cleaners, spray lubricants, varnishes, kerosene substitutes, insecticide solvents and numerous other specialty application solvents and thinners. No ignitable liquids were detected in Item 3.
NGQKX7	Item 1 was determined to contain the following: Medium Petroleum Distillate, an ignitable liquid, examples of which include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, lamp oils, and insecticides. Item 2 was determined to contain the following: Medium Petroleum Distillate, an ignitable liquid, examples of which include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, lamp oils, and insecticides. Item 3 was submitted as a comparative sample. This sample was analyzed and the results were used in evaluating possible matrix influences on Items 1 & 2. For comparison purposes only. No ignitable liquids were identified.
NH7GP7	A de-aromatized medium petroleum distillate (MPD) with an n-alkane range of C11-C12 was identified in Items 001. Examples of de-aromatized MPDs include, but are not limited to, odorless kerosene alternatives and odorless charcoal starters. A de-aromatized medium petroleum distillate (MPD) with an n-alkane range of C9-C12 was identified in Items 002. Examples of de-aromatized MPDs include, but are not limited to, odorless mineral spirits and odorless paint thinners. No ignitable liquid residues were detected in Item 3. Items 1, 2, and 3 were examined visually and using gas chromatography/mass spectroscopy (GC/MS). Passive adsorption/elution extraction was performed on Items 1, 2, and 3. The activated charcoal strips used to collect volatile organic compounds with an adsorption/elution technique are contained in separate plastic vials, placed in separate, heat-sealed fire debris bags, and were repackaged inside the original items.
NHHFLZ	The volatile contents of Items 1, 2 and 3 were extracted using a passive carbon adsorption/elution technique and analyzed by gas chromatography - mass spectrometry (GC-MS). A medium petroleum distillate was identified in Items 1 and 2 (Identification). Medium petroleum distillates include, but are not limited to, some paint thinners, mineral spirits, and charcoal starters. No ignitable liquid residues were detected in Item 3 (Not Detected).
NMZ9NA	On analysis: i) A medium petroleum distillates (including de-aromatized) product was detected on Item 1 and Item 2. ii) No ignitable liquid was detected on Item 3.
NQVZW7	Item 1: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 2: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 3: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). Ignitable liquids were not identified in the sample.
NVB8K7	It was determined utilizing activated charcoal strip extraction and gas chromatography/mass spectrometry analysis that item 1 exhibited the presence of a Naphthenic Paraffinic product in the medium range. It was determined utilizing activated charcoal strip extraction and gas chromatography/mass spectrometry analysis item 2 exhibited the presence of a Petroleum Distillate product in the medium range. NOTE: Item 3 comparison sample did not exhibit the presence of any ignitable liquid.
NW3VPY	The volatile contents of Items 1 and 2 were extracted using a passive carbon adsorption/elution technique and analyzed by gas chromatography - mass spectrometry (GC-MS). A medium petroleum distillate (MPD) was identified in Item 1 and Item 2 (Identification). MPDs include but are not limited to charcoal starters, paint thinners, and mineral spirits. The volatile contents of Item 3 were extracted using a passive carbon adsorption/elution technique and analyzed by GC-MS. No ignitable liquid residues were detected in Item 3 (Not Detected).
NXBBW6	The above items were examined in accordance with laboratory methods and procedures based upon ASTM International standard test methods and practices. The samples were extracted using passive

TABLE 4

WebCode	Conclusions
	headspace sampling and analyzed via gas chromatography - mass spectrometry. An extract generated from each item will be returned with the evidence (Items 1A, 2A, and 3A). Item 1 and Item 2: An ignitable liquid residue was detected- a medium petroleum distillate. Medium petroleum distillates (MPDs) may originate from some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 3: No ignitable liquid residues were detected. Item 3 was submitted as a comparison sample for Items 1 and 2.
NZJQJX	Instrumental analysis revealed medium petroleum distillate in exhibits #1 and 2. No ignitable liquid was detected in exhibit #3.
P3LLME	Item 001 contained a piece of cardboard, a medium distillate was detected from the item. Item 002 contained a piece of cardboard, a medium distillate was detected from the item. Item 003 contained a piece of cardboard, no ignitable liquid residues were detected from the item.
PK6EBH	A medium petroleum distillate (MPD) was identified in Item 1 and Item 2. Examples of MPDs include some charcoal starters, some paint thinners and some automotive parts cleaners. No ignitable liquids were identified in Item 3 (comparison sample).
PLXX9W	Sample 1 and Sample 2 both tested positive for an ignitable liquid. Based on the comparison to reference materials, this analysis satisfied the requirement to indicate the presence of a Medium Petroleum Distillate (MPD) for both Sample 1 and Sample 2.
PMVFJR	Item 1: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 2: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 3: No ignitable liquids found.
PQBFPD	Item 01 was analyzed by gas chromatography/mass spectrometry and determined to contain a medium naphthenic-paraffinic product ASTM class ignitable liquid. Examples of this ASTM class are some charcoal starters, insecticides, and lamp oils. Item 02 was analyzed by gas chromatography/mass spectrometry and determined to contain a medium petroleum distillate ASTM class ignitable liquid. Examples of this ASTM class are some charcoal starters, paint thinners, and lamp oils. Item 03 was analyzed by gas chromatography/mass spectrometry; however, ignitable liquids could not be detected.
PUU397	Exhibits 1 and 2 each contained a medium petroleum distillate (MPD). Examples of MPDs include some charcoal starters, some lamp oils and some paint thinners. MPDs are ignitable liquids. Exhibit 3 was negative for the presence of ignitable liquids.
PVML6K	Items 1.1 and 1.2: Passive Headspace Concentration/Gas Chromatography-Mass Spectrometry disclosed the following: Medium (C8-C13) Petroleum Distillate. Examples of a Medium (C8-C13) Petroleum Distillate include some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 1.3: Passive Headspace Concentration/Gas Chromatography-Mass Spectrometry disclosed the following: No ignitable liquids/ignitable liquid residues identified. The identification of an ignitable liquid / ignitable liquid residue does not necessarily lead to the conclusion that a fire was incendiary in nature. The absence of an ignitable liquid / ignitable liquid residue does not preclude the possibility that ignitable liquids were present.
PXVBDF	Item 1: Result: Medium petroleum distillate identified. Item 2: Result: Medium petroleum distillate identified. Item 3: Result: No ignitable liquids identified.
PZKFAU	The Item 1 extract contained a medium petroleum distillate which can be found in, but is not limited to, some torch fuels and lamp oils. The Item 2 extract contained a medium petroleum distillate which can be found in, but is not limited to, some mineral spirits, paint thinners, and charcoal starter fluids. No ignitable liquids were identified in the Item 3 extract.

TABLE 4

WebCode	Conclusions
PZZ8C7	The analysis done on Item-1 and Item-2 revealed the presence of a medium petroleum distillate in those samples. The analysis done on Item-3 did not revealed the presence of an ignitable liquid on this sample.
Q7GRJV	Item 1: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 2: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents.
Q99QWU	A naphthenic-paraffinic product in the medium range was identified in Item #1, examples of which include some insecticides, charcoal starters, and automotive parts cleaners. A petroleum distillate in the medium range was identified in Item #2, examples of which include some automotive parts cleaners, charcoal starters, and paint thinners. No ignitable liquids were identified in Item #3.
Q9PEA2	The [Laboratory] has received three samples from the Collaborative Testing Services (CTS), Inc (Test 22-5436) on 09/08/2023. The description of the samples is included within the package. The objective is to identify the class or classes for any flammable substances detected in the received items according to the Material testing branch's procedures. Analysis of ignitable liquids residues by dynamic headspace followed by Gas Chromatography/Mass Spectrometry discloses the following - Both Exhibit A (Item 1) and Exhibit B (Item 2) contain heavy, Petroleum distillates, as per ASTM E1618-19. - Exhibit C (Item 3, labeled as control bag), ignitable liquids/ ignitable liquid residues were not detected in the scheme proposed by ASTM E1618-19.
QJNKB9	The following methodologies were used in the examination of this case: visual examination, odor assessment, GC-FID, and GC-MS. Examination of Items 1 and 2 revealed the presence of a medium petroleum distillate. Medium petroleum distillates include some charcoal starters and some paint thinners. Examination of Item 3 failed to reveal the presence of ignitable liquids.
QK7YUY	[No Conclusions Reported.]
QLDGRU	Petroleum distillates(Medium range of alkane) were identified in item 1 and 2.
QTWKXB	A medium petroleum distillate was identified in Lab Items 1 and 2. No ignitable liquids were identified in Lab Item 3. Negative results do not preclude the possibility that ignitable liquids were present at the fire scene. Samples of recovered materials from this case have been preserved with the evidence. Analysis method: Carbon trap followed by Gas Chromatography/Mass Spectrometry.
QWG4RY	Item 1 contained a medium petroleum distillate. Examples of which include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. Item 2 contained a medium petroleum distillate. Examples of which include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. No ignitable liquids were detected in Item 3.
R3JXEM	[No Conclusions Reported.]
R4BWTk	An ignitable liquid classified as a medium petroleum distillate was identified in item 1. An ignitable liquid classified as a medium petroleum distillate was identified in item 2. Examples of products that may contain a medium petroleum distillate include, but are not limited to charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. No ignitable liquid(s) were detected in item 3.
R6QT6X	Item 1: A medium naphthenic-paraffinic product was identified in Item 1. Examples of medium naphthenic-paraffinic products include, but are not limited to charcoal starters, insecticides, lamp oils,

TABLE 4

WebCode	Conclusions
	mineral spirits and automotive parts cleaners. Item 2: A medium petroleum distillate product was identified in Item 2. Examples of medium petroleum distillate products include, but are not limited to charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides.
REAUDY	Item 1 and 2: Analysis identified the presence of a Medium Petroleum Distillate (MPD). Some examples of commercial products that may contain a Medium Petroleum Distillate include some torch fuels, some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 3 (Control Sample): No ignitable liquids detected.
RKEQYK	A de-aromatized medium petroleum distillate was detected in the nylon bag containing a piece cardboard (Item 1). Another de-aromatized medium petroleum distillate was detected in the nylon bag containing a piece cardboard (Item 2). Both items were classified as medium petroleum distillate (MPD); however, item 1 could be a different product from item 2 or a weathered product of item 2. Examples of ignitable liquids in the medium petroleum distillates class include some charcoal starters, some paint thinners, some lamp oils, some torch fuels, and some dry cleaning solvents. De-aromatized products may be labeled as "odorless." No ignitable liquids were detected in the nylon bag containing a piece of cardboard sample intended as a comparison blank (item 3).
RRYT62	A naphthenic-paraffinic product (medium range) was detected in the ACS sample extract (item 2-1-1-1-1) from the questioned piece of cardboard sealed inside a nylon evidence bag (item 2-1-1-1). Examples of medium range naphthenic-paraffinic products are some charcoal starters, insecticides, lamp oils, mineral spirits and automotive parts cleaners. A naphthenic-paraffinic product (medium range) was detected in the ACS sample extract (item 2-2-1-1-1) from the questioned piece of cardboard sealed inside a nylon evidence bag (item 2-2-1-1). Examples of medium range naphthenic-paraffinic products are some charcoal starters, insecticides, lamp oils, mineral spirits and automotive parts cleaners. No ignitable liquid residues were detected in the ACS sample extract (item 2-3-1-1-1) from the cardboard substrate intended as a comparison blank sealed inside a nylon evidence bag (item 2-3-1-1).
RRZW4Y	Analysis by Gas Chromatography/Mass Spectrometry of the cardboard sample (Item 1) detects the presence of a medium petroleum distillate (MPD). Examples of MPD's include: some torch fuels, mineral spirits, some paint thinners, some charcoal starters, some lamp oils, some dry cleaning solvents and some solvents for insecticides and polishes. Analysis by Gas Chromatography/Mass Spectrometry of the cardboard sample (Item 2) detects the presence of a medium petroleum distillate (MPD). Examples of MPD's include: some paint thinners, mineral spirits, some charcoal starters, some torch fuels, some lamp oils, some dry cleaning solvents and some solvents for insecticides and polishes. Analysis by Gas Chromatography/Mass Spectrometry of the cardboard sample (Item 3) fails to detect the presence of any ignitable liquids. The procedure employed does not detect the presence of light volatiles such as certain alcohols and acetone.
RTQPTV	Items 1-2 extracts: positive for a Medium Petroleum Distillate. Item 3 extract: no ignitable liquids were identified.
RWUKCY	item 1 contains medium de-aromatised distillate item 2 contains medium de-aromatised distillate note: de aromatised distillate is included in the petroleum distillate class category
T6JZQL	Item 1: Medium Petroleum Distillate was detected. Item 2: Medium Petroleum Distillate was detected. Item 3: Negative: No ignitable liquids were detected. Medium Petroleum Distillate: Examples of a medium petroleum distillate include mineral spirits, some charcoal starters, some torch fuels, some lamp oils, some paint thinners, some solvents for insecticides and polishes, and some dry cleaning solvents. Negative: The absence of detectable levels of ignitable liquid residues can be due to several factors, including destruction by the inherent nature of fire, evaporation prior to collection and analysis, fire suppression activities, improper packaging of sample, or lack of use of ignitable liquids.
T9JCLL	Items 1 and 2: Medium Petroleum Distillate. Examples of medium petroleum distillates include mineral spirits, some charcoal starters, some torch fuels, some lamp oils, some paint thinners, some solvents

TABLE 4

WebCode	Conclusions
	for insecticides and polishes, and some dry cleaning solvents. Item 3: Negative. The absence of detectable levels of ignitable liquid residues can be due to several factors, including destruction by the inherent nature of fire, evaporation prior to collection and analysis, fire suppression activities, improper packaging of sample, or no ignitable liquids used to start the fire.
TAULPZ	[No Conclusions Reported.]
TB992M	[No Conclusions Reported.]
TE8LMQ	From the Item1, we have found petroleum distillate in medium class according to the peaks for alkanes on C11 and C12, branched alkanes, and aromatics. Petroleum distillate in medium class was also confirmed on the Item 2 based on the obtained peaks of alkanes with the Gaussian distribution pattern in a carbon range of 9 to 12, branched alkanes, and aromatic compounds.
TJMUBQ	Item 1 - Analysis identified the presence of a medium petroleum distillate. Item 2 - Analysis identified the presence of a medium petroleum distillate. Item 3 - No ignitable liquids were identified. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticide solvents/propellants. A medium petroleum distillate was identified in items 1 and 2. No ignitable liquids were identified in item 3.
TM4UEP	METHODS: Items 1, 2, and 3 were extracted using a passive adsorption-elution technique. The Item 1, 2, and 3 extracts were examined using Gas Chromatography-Mass Spectrometry (GC-MS). RESULTS AND INTERPRETATIONS: The Item 1 extract contained a medium petroleum distillate which can be found in, but is not limited to, some mineral spirits, paint thinners, charcoal starter fluids, and lamp oils. The Item 2 extract contained a medium petroleum distillate which can be found in, but is not limited to, some mineral spirits, paint thinners, and charcoal starter fluids. No ignitable liquids were identified in the Item 3 extract.
TNE2TY	A medium petroleum distillate in the range of C11 to C13 was detected in Item 1. A medium petroleum distillate in the range of C9 to C12 was detected in Item 2. Medium petroleum distillates include, but are not limited to, some charcoal starters and lamp oils, mineral spirits, wood treatments and preservatives, dry cleaning solvents, fabric water repellents and protectors, automotive parts cleaners, spray lubricants, varnishes, kerosene substitutes, insecticide solvents and numerous other specialty application solvents and thinners. No ignitable liquids were detected in Item 3.
TPLGZ6	Item 1-1: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 1-2: Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents Item 1-3: No ignitable liquids were found
TZ6V38	Item 1 Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 2 Medium petroleum distillate, examples of which are some charcoal starters, some paint thinners, and some dry cleaning solvents. Item 3 Used as a comparison blank.
U2D3QD	Item 001-001: Medium Petroleum Distillate (MPD) residues were identified. Item 001-002: Medium Petroleum Distillate (MPD) residues were identified. Item 001-003: No ignitable liquid residues were identified.
U434XM	1. A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. 2. A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. 3. No ignitable liquids found.

TABLE 4

WebCode	Conclusions
U6WK2Q	Item1 contains medium de-aromatized petroleum distillates (including C11-C12). Item2 contains medium de-aromatized petroleum distillates (including C9-C12).
UJXTPD	A Medium Petroleum Distillate, an ignitable liquid, was identified in Items 1 and 2. Medium petroleum distillates are ignitable liquids which include some charcoal starters, paint thinners and dry-cleaning solvents. No ignitable liquid residues were identified in Item 3 (comparison blank).
UUFWP4	Laboratory Items #1 and 2: A medium petroleum distillate was identified. Examples of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners and some dry cleaning solvents.
UZ8CPP	The analysis completed in this case utilized the gas chromatograph/mass spectrometer. The results apply only to the sample(s) received. The evidence, including the sample used in analysis, will be returned to the submitting agency. Items 1A and 1B contains an ignitable liquid in the medium petroleum distillate class. Examples of products in the medium petroleum distillate class include some lamp oils, charcoal starters, paint thinners, torch fuels and dry-cleaning solvents. Item 1C was analyzed and no ignitable liquids were identified. It should be noted that ignitable liquids may evaporate or can be totally consumed during a fire. A negative finding of ignitable liquids does not preclude its presence during a fire.
V3RN2Z	Exhibits 1 and 2 each contained a medium petroleum distillate, which is an ignitable liquid. Examples of medium petroleum distillates include charcoal starters, paint thinners, and mineral spirits. No ignitable liquids were identified in Exhibit 3.
V7LHY2	Evidence addressed in this report was received into the laboratory on August 3, 2023. Analysis for diffusive ignitable liquid residues using Adsorption Trapping with Activated Charcoal, followed by Gas Chromatography/Mass Selective Detection: Item #1: Medium Petroleum Distillate, examples of which include (but are not limited to) lamp oils/torch fuel, paint thinners, dry cleaning solvents, mineral spirits and some brands of charcoal starter fluids. Item #2: Medium Petroleum Distillate, examples of which include (but are not limited to) paint thinners, dry cleaning solvents, mineral spirits and some brands of charcoal starter fluids. Item #3: No Ignitable Liquid Residues Identified. All Evidence will be returned to the submitter. Ignitable liquid residue does not necessarily lead to the conclusion that a fire was incendiary in nature. In addition, negative results do not preclude the possibility that ignitable liquids were present.
VAAG9D	A medium petroleum distillate was present in Items 1 and 2. Products in this range include, but are not limited to, some types of paint thinners, charcoal starters, lighter fluids and lamp oils.
VDLRYL	A naphthenic-paraffinic product was identified in Item 1. An example of this would include lamp oils such as Tiki Citronella and Cedar Torch Fuel" A medium petroleum distillate was identified in Item 2. An example of this would include examples such as Kingsford Odorless Charcoal Lighter Fluid, paint thinners and some mineral spirits. No ignitable liquids were detected in Item 3.
VEGK2D	An ignitable liquid classified as a medium petroleum distillate (MPD) was identified in Item 1. Examples of a medium petroleum distillate include, but are not limited to, some specialty solvents and insecticides. An ignitable liquid classified as a medium petroleum distillate (MPD) was identified in Item 2. Examples of a medium petroleum distillate include, but are not limited to, some charcoal lighter fluids. No recognizable ignitable liquids were identified in Item 3.
VFRMPX	A dearomatized medium petroleum distillate (MPD) with a carbon range of C11 – C12 was identified in Item 1. Examples of dearomatized MPDs include but are not limited to some kerosene alternatives and some odorless charcoal starters. A dearomatized medium petroleum distillate (MPD) with a carbon range of C9 – C12 was identified in Item 2. Examples of dearomatized MPDs include but are not limited to some odorless mineral spirits, odorless charcoal starters, and odorless paint thinners. No ignitable liquids were detected in Item 3. Items 1 – 3 were examined visually and using gas chromatography/mass spectroscopy (GC/MS). Passive adsorption/elution extraction was performed on Items 1 – 3. The activated charcoal strips used to collect volatile organic compounds with an

TABLE 4

WebCode	Conclusions
	adsorption/elution technique are contained in separate plastic vials, placed in separate, heat-sealed fire debris bags, and each was repackaged inside the original item.
VQDE6G	Item 1 was found to contain compounds classified as De-Aromatized Petroleum distillates according to ASTM E-1618-19. Item 2 was found to contain compounds classified as De-Aromatized Petroleum distillates according to ASTM E-1618-19. Item 3 no ignitable liquid residue were identified (not identified).
W24ZVP	Item 1: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 2: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). A Medium Petroleum Distillate was identified. Examples of this type ignitable liquid include: some charcoal starters, some paint thinners and some dry cleaning solvents. Item 3: The submitted sample was analyzed using a passive headspace technique and gas chromatography-mass spectrometry (GC-MS). Ignitable liquids were not identified in the sample.
W4ZNP2	Item #1- The presence of a Medium Petroleum Distillate was detected in this sample. Item #2- The presence of a Medium Petroleum Distillate was detected in this sample.
W6BZDB	Medium petroleum distillate residues were detected in Item 001-01. Medium petroleum distillate residues were detected in Item 001-02. No common ignitable liquid residues were detected in Item 001-03.
W8ZYK2	Item 1 was subjected to adsorption – elution extraction followed by gas chromatographic/mass spectrometric (GC/MS) analysis. GC/MS analysis shows the presence of a medium petroleum distillate ignitable liquid. Examples of this class of ignitable liquid could include (but are not limited to): charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. Item 2 was subjected to adsorption – elution extraction followed by gas chromatographic/mass spectrometric (GC/MS) analysis. GC/MS analysis shows the presence of a medium petroleum distillate ignitable liquid. Examples of this class of ignitable liquid could include (but are not limited to): charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticides. Item 3 was subjected to adsorption – elution extraction followed by gas chromatographic/mass spectrometric (GC/MS) analysis. GC/MS analysis shows no evidence of ignitable liquids.
WAM7UH	Instrumental analysis of Items 1 & 2 revealed the presence of a medium petroleum distillate. Products in this range include, but are not limited to: mineral spirits, some paint thinners, some charcoal starters, "dry cleaning" solvents, some torch fuels, some solvents for insecticides and polishes, and some lamp oils. Instrumental analysis of Item 3 did not reveal the presence of any ignitable liquid residue. It should be noted that ignitable liquids are volatile products that may be lost through evaporation, totally consumed during a fire, or indistinguishable from background materials. A negative result for the detection of an ignitable liquid can indicate that one was never used, but it does not preclude its presence or use in a fire. Results were confirmed by the following instrumentation: Gas Chromatograph/Mass Spectrometer
WC9EUP	Item 1 The item was examined when the presence of an unidentified hydrocarbon mixture was detected. Item 2 The item was examined when the presence of white spirit was detected.
WCTVAT	1. A medium petroleum distillate was detected in Exhibits Item 1 and Item 2. Uses of medium petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners, and some mineral spirits. Medium petroleum distillates are ignitable liquids and could act as a fire accelerant. 2. No ignitable liquid, or its residue, was detected in Exhibit Item 3.
WGPMPH	[No Conclusions Reported.]

TABLE 4

WebCode	Conclusions
WKNPK2	Item 1-1: An ignitable liquid in the medium petroleum distillates class was identified. Examples of products in the medium petroleum distillates class include some charcoal starters, some paint thinners and some mineral spirits. Item 2-1: An ignitable liquid in the medium petroleum distillates class was identified. Examples of products in the medium petroleum distillates class include some charcoal starters, some paint thinners and some mineral spirits.
WWV7TL	A medium petroleum distillate was identified in samples 1 and 2. No ignitable liquids were identified in samples 3 and 4.
WYM3HF	A de-aromatized medium petroleum distillate was detected in the nylon evidence bag containing a piece of cardboard (Item 1) and in the nylon evidence bag containing a piece of cardboard (Item 2). The medium petroleum distillate detected in Item 2 is consistent with being a weathered version of the ignitable liquid detected in Item 1, but another medium petroleum distillate cannot be ruled out. Examples of ignitable liquids in the Medium Petroleum Distillate Class include mineral spirits, some paint thinners, some charcoal starters, some dry cleaning solvents, some torch fuels, and some lamp oils. No ignitable liquid was detected in the nylon evidence bag containing a piece of cardboard that was submitted as a substrate reference (Item 3).
X64XYA	1. De-aromatized Medium Petroleum Distillate was identified in item 1 and item 2. Examples of Medium Petroleum Distillate include paint thinner, lamp oils, mineral spirits and others. 2. No ignitable liquid residue was identified in item 3.
XBRLTF	A medium petroleum distillate class of ignitable liquids was detected in Item 1. A medium petroleum distillate class of ignitable liquids was detected in Item 2. No ignitable liquid residue was detected in Item 3.
XE9H7P	Results & Conclusions for Items 1 and 2: A medium petroleum distillate was identified. Medium petroleum distillates are ignitable liquids and examples include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. Results & Conclusions for Item 3: No ignitable liquid was identified.
XEVD9	(i) Traces of an organic mixture containing mainly medium petroleum distillate were recovered from each of the items 1 and 2. (ii) Nothing of significance was found with respect to the recovery of ignitable liquid residues from the item 3.
XJNQUP	Gas Chromatograph - Mass Spectrometer Analysis (Heated Headspace Concentration [Items #01.01 - #01.03] and Passive Headspace Concentration [Items #01.01 - #01.03]) of the submitted material yielded the following results and conclusions: Items #01.01 and #01.02- A Medium Petroleum Distillate was identified within each item. Examples of a Medium Petroleum Distillate of the type identified include, but not limited to, some paint thinners, some mineral spirits, and some lacquer thinners. Item #01.03 - No Ignitable liquid residue was identified.
XMPYXY	Evidence addressed in this report was received into the laboratory on August 3, 2023. Analysis for diffusive ignitable liquid residues using Adsorption Trapping with Activated Charcoal, followed by Gas Chromatography/Mass Selective Detection: Item(s) #1 and #2: Medium Petroleum Distillate, examples of which include (but are not limited to) paint thinners, dry cleaning solvents, mineral spirits and some brands of charcoal starter fluids. Item #3: No ignitable liquid residues identified. All Evidence will be returned to the submitter. Ignitable liquid residue does not necessarily lead to the conclusion that a fire was incendiary in nature. In addition, negative results do not preclude the possibility that ignitable liquids were present.
VXXL3	Normal and branched alkanes and various cycloalkanes make up the bulk of the flammable liquid detected in ITEM 1. Practically no aromatic content can be identified. The boiling range covered by the components is approximately that bounded by the boiling points of normal decane and normal tridecane. Main peaks are normal alkane peaks with an approximate Gaussian distribution. According to the ASTM E1618-19 standard, this component composition corresponds to petroleum distillate. As

TABLE 4

WebCode	Conclusions
	far as the boiling point range is concerned, it is medium. Normal and branched alkanes and various cycloalkanes make up the bulk of the flammable liquid detected in ITEM 2. Only traces of aromatic content can be identified. The boiling range covered by the components is approximately that bounded by the boiling points of normal octane and normal tridecane, however, very small percentage of the IRL detected elutes in the range of boiling point range between the boiling points of normal heptane and normal octane. Main peaks are normal alkane peaks with an approximate Gaussian distribution. According to the ASTM E1618-19 standard, this component composition corresponds to petroleum distillate. As far as the boiling point range is concerned, it is medium.
XZBBA9	A residue of a medium petroleum distillate was detected in Item 1 and Item 2. Examples of a medium petroleum distillate include charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticides. No ignitable liquids were detected in Item 3. The samples were extracted by passive adsorption-elution techniques and analyzed by gas chromatography with mass spectrometry.
Y8QAHT	Methods: Items 1.1, 2.1, and 3.1 were analyzed with a gas chromatograph-flame ionization detector (GC-FID) and a gas chromatograph-mass spectrometer (GC-MS) for the identification of ignitable liquids. Results and Conclusions: Items 1.1 and 2.1 were each found to contain a medium petroleum distillate. Examples include, but are not limited to: some charcoal starters, some paint thinners, and some mineral spirits. Item 3.1 was used as a control.
YCZPQG	Item 1: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 2: A medium petroleum distillate found. Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene, and insecticide vehicles. Item 3: No ignitable liquids of evidentiary value found. The volatile components found are consistent with products produced when natural or synthetic materials are subjected to heating or burning.
YGUJNH	Items 1 and 2 were found to contain a medium-range petroleum distillate (MPD). Examples of medium-range petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners, some mineral spirits, and some lamp oils. No ignitable liquids were detected in item 3.
YJKDEE	A Medium Petroleum Distillate de-aromatized (C11-C12) was detected on item 1. A Medium Petroleum Distillate de-aromatized (C9-C12) was recovered on item 2. Examples of commercial products that contains MPDs include some charcoal lighters, paint thinners, lamp oils and some specialty solvents.
YKU33X	Item #1: The presence of a Medium Petroleum Distillate was identified in this sample. Item #2: The presence of a Medium Petroleum Distillate was identified in this sample.
YMQZJ	1. Analysis identified the presence of a medium petroleum distillate. 2. Analysis identified the presence of a medium petroleum distillate. 3. No ignitable liquids were identified.
YPPLQU	A de-aromatized medium petroleum distillate (C11-C12) was identified in Item 1. Examples of a de-aromatized medium petroleum distillate include but are not limited to some kerosene alternatives and some odorless charcoal starters. A de-aromatized medium petroleum distillate (C9-C12) was identified in Item 2. Examples of a de-aromatized medium petroleum distillate include but are not limited to, some odorless charcoal starters, some odorless paint thinners and some odorless mineral spirits. No ignitable liquids were identified in Item 3.
YT7UEU	A medium petroleum distillate was identified in Item 1-1 ("Test No. 23-5436 Item 1"). Some examples of medium petroleum distillates would include some brands of torch fuels, charcoal lighter fluids, paint thinners, mineral spirits, and specialty products. A medium petroleum distillate was identified in Item 1-2 ("Test No. 23-5436 Item 2"). Some examples of medium petroleum distillates would include some brands of charcoal lighter fluids, paint thinners, mineral spirits, and specialty products. No ignitable

TABLE 4

WebCode	Conclusions
	liquids were identified in Item 1-3 ("Test No. 23-5436 Item 3").
YWKNT7	An ignitable liquid classified as a medium petroleum distillate (MPD) was identified in Item 1. Examples of MPDs include, but are not limited to, some specialty solvents and lamp oils. An ignitable liquid classified as a medium petroleum distillate (MPD) was identified in Item 2. Examples of MPDs include, but are not limited to, some charcoal lighter fluids. No recognizable ignitable liquids were identified in Item 3.
Z84TTW	Item 1: A medium petroleum distillate was detected. Examples include: Mineral spirits, paint thinners, charcoal starters, dry cleaning solvents, spray lubricants, insecticides, deck sealers, varnishes, automotive parts cleaners, and lamp oils. Item 2: A medium petroleum distillate was detected. Examples include: Mineral spirits, paint thinners, charcoal starters, dry cleaning solvents, spray lubricants, insecticides, deck sealers, varnishes, automotive parts cleaners, and lamp oils. Item 3: Comparison Sample.
ZAANJ9	Item 001-001: Residues of a medium petroleum distillate (MPD) were identified. Item 001-002: Residues of a medium petroleum distillate (MPD) were identified. Item 001-003: No ignitable liquid residues were identified.
ZCEBZJ	Items 1, 2, and 3 were extracted using a passive adsorption-elution technique. The Item 1, 2, and 3 extracts were examined using Gas Chromatography-Mass Spectrometry (GC-MS). The Item 1 extract contained a medium petroleum distillate which can be found in, but is not limited to, some lamp oils and charcoal starter fluids. The Item 2 extract contained a medium petroleum distillate which can be found in, but is not limited to, some mineral spirits, paint thinners, and charcoal starter fluids. No ignitable liquids were identified in the Item 3 extract.
ZGBZGQ	Item 1: Contains a medium petroleum distillate, examples of which include mineral spirits, paint thinners, and specialty solvents. Item 2: Contains a medium petroleum distillate, examples of which include charcoal starters, mineral spirits and paint thinners. Item 3: No ignitable liquids were detected/identified.
ZH4JCJ	According to the ASTM E 1618-19 Ignitable Liquid Classification Scheme, Item 1 and 2 were identified as medium petroleum distillates.
ZKNZEH	Item 1. A medium petroleum distillate was identified in the heat-sealed bag containing a piece of cardboard. Item 2. A medium petroleum distillate was identified in the heat-sealed bag containing a piece of cardboard. Item 3. No ignitable liquids were identified in the heat-sealed bag containing a piece of cardboard. (Comparison) Examples of medium petroleum distillates are some charcoal starters, paint thinners, and lamp oils.
ZL4RFU	Analysis of Item 1 disclosed the presence of a medium petroleum distillate. Examples of this class include some charcoal starters, some paint thinners, and some dry cleaning solvents. Analysis of Item 2 disclosed the presence of a medium petroleum distillate. Examples of this class include some charcoal starters, some paint thinners, and some dry cleaning solvents. Analysis conducted on Item 3 did not identify the presence of an ignitable liquid. Item 3 was submitted as a substrate comparison sample. Items 1.1, 2.1, 3.1, and BL1 have been retained in Packet FDB1. This packet is being returned to the submitting agency.
ZNAM86	An ignitable liquid classified as a medium petroleum distillate was identified in Item 1 and Item 2. Examples of medium petroleum distillates include, but are not limited to, some charcoal lighter fluids and some specialty solvents. No recognizable ignitable liquids were identified in Item 3.

Additional Comments

TABLE 5

WebCode	Additional Comments
242A8A	According to our analysis methodology, for the passive adsorption process, items 1, 2 and 3 were placed separately and one at a time, in uncoated metal cans for the stove adsorption process, for this purpose they were used a DVB/CAR/PDMS solid phase microextraction (SPME) fiber.
2MTFEF	A C9 to C12 Petroleum Distillate, dearomatized, was detected. Product may be a carcoal starter, lamp oil oder a special solvent.
2UQ8MA	It should be noted Item 1 was a narrow range distillate (C11-C12) and Item 2 was a broad range distillate (C9-C12). These items could have originated from a similar source with Item 1 being more evaporated than Item 2. Or, these items could have two different sources. A comparison sample would be useful, if available, in this case.
3GZ8DY	This laboratory does not use the ASTM classification scheme and does not have access to US products to enable a direct comparison to reference materials to be undertaken.
49M7KQ	Note: Item 1 was damaged by equipment during the analysis process. It cannot be determined if the results of the analysis were affected by this damage.
4LANMM	item 1A = agency item #1. item 1B = agency item #2. item 1C = agency item #3. The procedure employed does not detect the presence of light volatiles such as certain alcohols and acetone.
6233F9	We are using ASTM E-1618 scheme for the interpretation of the analysis results.
6J2RGP	All items were processed using passive headspace concentration with an activated charcoal strip and analyzed using a gas chromatograph/mass spectrometer. Examples of a medium petroleum distillate may include charcoal starters, paint thinners, and dry cleaning solvents.
6RDEHK	1. Examples of substances with a chemical pattern similar to the substance detected in item 1 are: some lamp oils and torch fuel. 2. Examples of substances with a chemical pattern similar to the substance detected in item 2 are: some mineral spirits or varsol.
72GLHX	The activated charcoal strip extracts were packaged with the original items and stored in the Fire Debris Unit. Upon completion of the proficiency test, after results are released, the items and their activated charcoal strips will be disposed of. Ignitable liquid classification is based on ASTM E1618 Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry and/or the laboratory's internal policy and procedures. All evidentiary items are returned to the [City] Police Department Property and Evidence Section unless otherwise noted above. The [City] Police Department Crime Laboratory is responsible for all information and results provided in the report as they apply to the evidence as received, except for any data and information, to include item descriptions that were provided by the customer, which can affect the validity of results. The relevant supporting data is available for review/inspection. The results relate only to the items tested, analyzed or compared. This report shall not be reproduced, except in full, without approval from the [City] Police Department Crime Laboratory.
79ZENB	Carbon ranges are different for Item1 and Item 2 Item 1 : C8-C12 Item 2 : C10-C12
7NNPBD	Identification of an ignitable liquid residue in a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation could reveal a legitimate reason for the presence of ignitable liquid residues. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that could have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background materials. Items 1, 2, and 3 were extracted using a passive adsorption-elution technique and were analyzed using gas chromatography/mass spectrometry (GC/MS). Both the analyzed and unanalyzed portions of the charcoal strips will be returned to the submitting agency along with the original evidence.
7VAKE3	Conclusions based on ASTM 1618-14 The identification of an ignitable liquid residue in a fire scene

TABLE 5

WebCode	Additional Comments
	does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation could reveal a legitimate reason for the presence of ignitable liquid residues. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that could have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background materials. Chain of Custody and GC-MS analysis details may be provide upon request Test No.: 21-5436 Participant Code: [Number] Web Code: 7VAKE3
8TKFGP	The item 1 was received in a nylon bag, which appear to come deflated compared to the other items
8WXFEF	Ignitable liquids of Item 1 and Item 2 could originate from lamp oils (e.g. torch fuel), specialty solvents, etc. The detected compounds of Item 3 (cardboard substrate) negligible influenced on chromatographic pattern of suspected material and interpretation of results.
9HY4PP	A copy of the Ignitable Liquids Classification System is attached to every report.
9LXHDE	Normal Alkanes are the most predominant compounds present with Gaussian distribution from C8-C13. Isoalkanes are also prominent between the normal alkane distribution. Item compares well with NCF5 ILRC 0293 "Progard Fuel Injector Cleaner" which is classified as a Medium petroleum distillate.
AGG6YR	Samples of recovered materials from this case have been preserved with the evidence. Analysis method: Carbon trap followed by Gas Chromatography/Mass Spectrometry
AZBZCF	The Medium Petroleum Distillates detected on the sample received and labeled as item 1, has a carbon number range between C11 – C13. The Medium Petroleum Distillates detected on the sample received and labeled as item 2, has a carbon number range between C9 – C12.
B3UCNQ	Identification of an ignitable liquid residue in a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation could reveal a legitimate reason for the presence of ignitable liquid residues. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that could have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background materials. Items 1, 2 and 3 were extracted using a passive adsorption-elution technique and were analyzed using gas chromatography/mass spectrometry (GC/MS). Both the analyzed and unanalyzed portions of the charcoal strips will be returned to the submitting agency along with the original evidence.
B7AEJF	Item 1A = item 1. Item 1B = item 2. Item 1C = item 3.
C4ZL48	Sample nr 1 type's commercial products are e.g. torch fuels, lamp oils, some heater fuels, mineral spirits and paint thinners. Sample nr 2 type's commercial products are e.g. solvents, paint products, rust inhibitors, mineral spirits, thinners and car chemicals.
C87G4W	Conclusions and caveats below are based on ASTM 1618-14. The identification of an ignitable liquid residue in a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquids. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that may have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background materials. Chain of Custody records and details of the GC-MS analysis may be provided upon request. Test No. 23-5436 Data Sheet, continued Participant Code: [Number] WebCode: C87G4W
CV8F9K	Exhibits 1-3 were analyzed using passive adsorption on a piece of activated charcoal. The charcoal was extracted with a solvent and the recovered volatile material was analyzed by gas chromatography/mass spectrometry.
CXGT7A	Examples of commercial products that are consistent with these findings include some charcoal starters or paint thinners.

TABLE 5

WebCode	Additional Comments
CYRT34	Ignitable liquid residues were detected on Items #1 and #2.
DDRUF6	Item 1: Example of products: Paint thinners, white spirits. Item 2: Example of products: Charcoal starter fluids, paint thinners, white spirits.
F3H94M	The identification of an ignitable liquid residue on tested evidence does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquid residues.
F6LADD	The products identified are further classified as medium-range products.
FA369W	Conclusions and caveats below are based on ASTM E1618-14. The identification of an ignitable liquid residue in a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquids. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene. Ignitable liquids are volatile compounds that may have evaporated, been totally consumed in a fire, environmentally altered or removed, or otherwise indistinguishable from background materials. Chain of Custody records and details of the GC-MS analysis may be provided upon request. Test No. 23-5436 Data Sheet, continued Participant Code: [Number] WebCode: FA369W
FDWVYL	Although an ignitable liquid type or class has been nominated, it must be noted that some commercial products incorporate similar liquids into their products – either within their specific formulation (e.g. degreasers, carburettor cleaners, etc), or as “carrier” for the key compounds (e.g. some aerosol or liquid products). In trying to identify a source for item 1, item 2 was allowed to weather for 90 minutes and the resulting chromatogram produced a similar pattern of hydrocarbons as item 1.
G6YQYC	NOTE: Although an ignitable liquid was identified in the submitted sample(s), further investigation may reveal a legitimate reason for the presence of an ignitable liquid. NOTE: A finding of no ignitable liquids identified does not preclude the possibility that ignitable liquids were present in the sample(s). Explanations for a finding of no ignitable liquids may be, but are not limited to: not present in the sample, does not meet current ASTM requirements, evaporation of the volatile compounds, complete consumption in a fire, environmental alteration, masked by background material, or a limitation of the reference material available to this laboratory. NOTE: An activated charcoal strip was used to collect a sample from each item submitted for analysis. These charcoal strips are preserved in the laboratory for 5 years for potential additional analysis. Charcoal strips associated with death investigations will be preserved indefinitely. DISPOSITION OF EVIDENCE: The evidence is returned to the submitting/investigating agency upon completion of examination.
GDBKZD	These items were processed using passive headspace concentration with activated charcoal strips and analyzed using a gas chromatograph/mass spectrometer. Examples of a medium petroleum distillate may include but are not limited to some charcoal starters, some paint thinners, and some dry cleaning solvents.
GFH8QJ	In item 1, in addition to the above composition, citronella is also detected. [See Table 4: Conclusions]
GLTQY6	Both medium petroleum distillates in item 1 and item 2 were de-aromatised.
HGBFC9	A medium petroleum distillate was detected in item 1. A medium petroleum distillate was detected in item 2. No ignitable liquid residues were detected in item 3. The presence of an ignitable liquid residue in Items #1 and 2 does not in and of itself indicate an incendiary fire. The results in Item #3 do not eliminate the possibility that an ignitable liquid was present at the incident in question.
HKCGEQ	The identification of an ignitable liquid residue does not necessarily lead to the conclusion that a fire was incendiary in nature. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present.
JA7XGT	Item 1 and 2: Petroleum distillates are products of crude oil refinement via distillation. Examples are included in our interpretive guidance document. Item 3: This sample was used as a comparison

TABLE 5

WebCode	Additional Comments
	sample for Items 1 and 2.
JUVEFF	1. The identification of an ignitable liquid residue on tested evidence does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquid residues.
KNJLPU	Item 1: Criteria met for MPD determination. Best fit to Tiki Torch fuel. Item 2: Criteria met for MPD determination. Best fit to Varsol-1, but differences noted between Aromatics and Indanes EIPs. Fit is sufficient for determination.
MTA38K	Note: The identification of an ignitable residue from the fire debris from a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence liquid residues. Our laboratory is situated in other Continent, and we don't have so standard samples, of which chromatograms could be fit exactly with those chromatograms which resulted the testing of Item 1 and Item 2, so we can not identify the commercial product we have found in the mentioned items.
NHHFLZ	Explanation of Terms: The following descriptions are meant to provide context to the types of opinions reached in fire debris/ignitable liquid examinations. Identification: The sample contained an ignitable liquid or residues of an ignitable liquid. Not Identified: Compounds were detected that may be present in some ignitable liquids. Possible factors that prevented identification of an ignitable liquid may include one or more of the following: The detected compounds may originate from substrate materials and/or pyrolysis of substrate materials Other compounds in the sample impeded data interpretation An unexplained absence of components and/or differences in ratios of compound types compared to a reference liquid was observed No comparable sample in the reference collection was found Not Detected: The data did not indicate the presence of an ignitable liquid.
NZJQJX	We have an information sheet similar to Table I in ASTM E-1618 "Ignitable Liquid Classification Scheme with Examples of Known Products for Each Class" , which we send along with the report.
PUU397	I understand that nylon bags are easier to use and cut down on the price of sending CTS proficiencies; however, the nylon bags tend to leak if not properly sealed. Once again, the inner bag was not sealed properly and upon opening the outer bag, I could smell the ignitable liquid without opening the inner most bag.
PXVBDF	Medium petroleum distillates are ignitable liquids that may be found in commercial products such as mineral spirits (e.g. 'Varsol'), barbeque starter fluids, paint thinners and some products marketed as kerosene. The identification of an ignitable liquid in an item does not necessarily lead to the conclusion that a fire was deliberately set.
Q9PEA2	It is worth mentioning that the current GC-MS in the Material testing branch is set to specify the common known Hydrocarbon compounds (petrol, diesel, etc.). The current practice in which the technicians identify whether samples are either positive or negative is adequate and fit for the purpose of the technical work. Thus, although the results were positive; yet they did not match with the commonly known ignitable liquids standard recorded in our database.
RTQPTV	Examples of Medium Petroleum Distillates may include but are not limited to some charcoal starters, some paint thinners, torch fuels, and some dry cleaning solvents. Item 3 was used as a comparison sample for Items 1-2. The absence of an ignitable liquid residue does not preclude the possibility that ignitable liquids were present at the fire scene.
T6JZQL	Item 1: MPD, Gaussian distribution of n-alkanes in the C11-C12 carbon range. Overlay with known MPD looks good. Item 2: MPD, Gaussian distribution of n-alkanes in the C9-C12 carbon range. Overlay with known MPD looks good. Item 3: Negative for ILR.
T9JCLL	Removed plastic bags from box, cut open inner and outer bag to expose cardboard, and put inner and outer plastic bag and cardboard into quart cans from lab supplies for heating. Item 1: UB cardboard square Gaussian distribution of n-alkanes present in MPD range. Overlay with known MPD also looks good. Positive for MPD. Item 2: UB cardboard square Gaussian distribution of n-alkanes

TABLE 5

WebCode	Additional Comments
	present in MPD range. Overlay with known MPD also looks good. Positive for MPD. Item 3: UB cardboard square No peaks present other than solvent peaks. Negative for ILR.
TJMUBQ	Failure to identify an ignitable liquid in any samples of fire debris should not be interpreted to mean that an ignitable liquid could not have been present. It means only that none could be recovered from the debris and or detected during analysis. These opinions are based upon my knowledge, skills, experience, training, education and personal observations as well as facts and data perceived by or made known to me, which facts and data are of the type reasonably relied upon by experts in my particular field in forming opinions or inferences.
UUFWP4	The identification of an ignitable liquid residue on tested evidence does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquid residues.
VAAG9D	Noted on the fire debris worksheet: Item #1 contained a narrower range MPD. Item 2 contained a broader range MPD. The comparison sample Item 3, did not contain any detectable ignitable liquid residues.
VDLRYL	A suggestion: supplying burned substrates that are more realistic to fire debris samples. Preferably consisting of plastics, styrofoam or construction material with a small quantity of an unknown ignitable liquid.
WC9EUP	Regarding Item 1 - the substance is not a commonly encountered fire accelerant within our laboratory. Our laboratory would not normally report ASTM categories.
WWV7TL	Examples of medium petroleum distillates include, but are not limited to, charcoal starters, paint thinners, dry cleaning solvents, mineral spirits, automotive parts cleaners, spray lubricants, lamp oils, deck sealers, varnishes, kerosene and insecticide solvents/propellants.
XE9H7P	Note: The identification of an ignitable liquid in an item does not necessarily lead to the conclusion that a fire was deliberately set. Methods of Analysis: Items extracted/concentrated using activated charcoal strip, and analyzed by gas chromatography-mass spectrometry (GC-MS), which is a standard instrumental technique.
YPPLQU	Item 1, Item 2 and Item 3 were examined visually and using gas chromatography/mass spectrometry (GC/MS). Passive adsorption/elution extraction was performed on Item 1, Item 2 and Item 3. The activated charcoal strips used to collect volatile organic compounds with an adsorption/elution technique are contained in separate plastic vials placed in separate, heat-sealed fire debris bags and each was repackaged inside the original item.
ZL4RFU	The MPD in Item 1 and 2 were different from each other based on carbon range.

-End of Report-
(Appendix may follow)

Test No. 23-5436: Ignitable Liquid Identification

DATA MUST BE SUBMITTED BY **Oct. 02, 2023, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: VEZQZ4

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Scenario:

Police are investigating a suspected attempted arson case. Investigators collected pieces of cardboard near two suspected ignition sites and immediately sealed the evidence in nylon bags. The police are requesting you to identify any ignitable liquid(s) that may be present on the cardboard pieces.

For laboratories that do not process evidence in nylon bags, please utilize the following method to transfer the items to a sampling container consistent with fire debris submission in your laboratory:

Cut open 3 sides of the inner and outer bags containing the sample and place both opened bags and its contents into your laboratory container. Do not separate the sample (cloth, wood, etc.) from the bags when transferring to the laboratory container.

Items Submitted (Sample Pack IL):

Item 1: Questioned piece of cardboard sealed in a nylon evidence bag.

Item 2: Questioned piece of cardboard sealed in a nylon evidence bag.

Item 3: Cardboard substrate intended as a comparison blank sealed in a nylon evidence bag.

1.) Using the ASTM E 1618-19 Ignitable Liquid Classification Scheme, indicate the class for any ignitable liquid(s) detected in the submitted items.

With the exception of the gasoline class, there are three subclasses for each major class based on n-alkane range: **Light** (C4-C9), **Medium** (C8-C13) and **Heavy** (C9-C20+). When the carbon range does not fit clearly into one of the previous categories (e.g. "light to medium", "medium to heavy"), report the carbon number range. Typical chromatograms for some of the classes/subclasses may be found in the published ASTM standard.

Item 1

Class	<i>Subclass</i>
<input type="text"/>	<input type="text"/>

Item 2

Class	<i>Subclass</i>
<input type="text"/>	<input type="text"/>

2.) Ignitable Liquid Recovery Techniques

Adsorption Headspace

a) Method

Passive

Dynamic

b) Adsorption Temperature

Room Temperature

Heated (Temperature: °C)

c) Adsorption Duration

d) Adsorbent:

Carbon/Charcoal

Other:

e) Desorption:

Solvent:

Thermal

Other Recovery Techniques:

Specify:

3.) Ignitable Liquid Identification Techniques

GC

GC/MS

Other (specify):

Please note: Any additional formatting applied in the free form spaces below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.

4.) What would be the wording of the Conclusions in your report?

5.) Additional Comments

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
- This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps only if your laboratory is accredited in this testing/calibration discipline by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory.

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety.

Authorized Contact Person and Title

Laboratory Name

Location (City/State)