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Page 1 of 1

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ANALYTICAL SERVICES

**45-DAY SAFETY SCREENING
RESULTS FOR TANK 241-C-105, PUSH MODE,
CORES 72 AND 76**

Date Printed: MAY 3, 1995

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TABLE OF CONTENTS

Narrative	1
Sample Data Summaries	6
Undigested Analyses Results - Direct	19
Differential Scanning Calorimetry (DSC)	
Worklist # 937	20
Worklist # 941	28
Worklist # 1015	35
Worklist # 1016	41
Worklist # 1018	51
Worklist # 1031	61
Worklist # 1283	67
Thermogravimetric Analysis (TGA)	
Worklist # 944	75
Worklist # 948	83
Worklist # 1037	93
Worklist # 1039	99
Worklist # 1043	106
Worklist # 1055	112
Worklist # 1056	120

This document consists of pages 1 through 127.

WHC-SD-WM-DP-108, REV. 0

NARRATIVE

SUMMARY

Two three-segment push-mode core samples from tank 241-C-105 and one field blank were received at the 222-S Laboratory. Core 72 was obtained from riser 2 and core 76 was obtained from riser 8. Hydrostatic head fluid, consisting of water with a lithium bromide tracer was used during the sampling of these cores. These samples underwent safety screening analyses - differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha analysis - in accordance with the tank characterization plan (TCP) referenced below; lithium analysis by inductively coupled plasma atomic emission spectroscopy (ICP) was also performed to determine if the sample contained hydrostatic head fluid.

Analytical results for the TGA analysis of the upper half of the solids in core 72, segment 3 (sample number S95T000694); the lower half of the solids in core 76, segment 2 (S95T000661); and the upper half of the solids in core 76, segment 2 (S95T000655) were less than the safety screening notification limit of 17 weight percent water. Verbal and written notification was made on April 28, 1995 and May 3, 1995.

The DSC results for the upper half of the solids in core 72, segment 2 (S95T000681) had one exotherm which exceeded the criterion of 481 J/g (dry weight basis). The sample results exceeded the limit but the duplicate and average were below the limit; a rerun was also below the limit. Written and verbal notification were made on May 3, 1995. Secondary analyses will be performed in accordance with the TCP.

Additionally, the TCP's notification limit for lithium was exceeded for the drainable liquid samples for core 72, segment 2 (S95T000678); core 76, segment 2 (S95T000648); and core 76, segment 3 (S95T000523). The high lithium results require that secondary analyses for bromide be performed. Bromide results, along with any outstanding lithium analyses will be documented in a separate report.

SCOPE

This document serves as the 45-day report deliverable for the tank 241-C-105 core samples collected between March 14 and 22, 1995. Each sample was received, extruded, and analyzed by the 222-S Laboratory in accordance with the referenced TCP. Any exceptions to the plan are discussed in the following sections.

This report includes the primary safety screening results (DSC, TGA, and total alpha) obtained from the analyses and copies of all DSC and TGA raw data scans as requested per the TCP. Photographs of the extruded segments were taken and, although not included in this report, are available. Although not required for the 45-day report, this report also includes all lithium results currently available.

SAMPLE RECEIPT AND EXTRUSION

Information on the receipt and extrusion of the core samples (sampling date, sample receipt date, extrusion date, amount of sample, sample description, and laboratory sample numbers) is provided in Table 1. The amount of solids recovered was lower than expected for almost all of the segments. Only segment 3 of core 72 contained a large amount of solids. Drainable liquid was recovered from all but one segment (core 72, segment 3). One field blank was delivered to the 222-S Laboratory with core 76. No hydrostatic head fluid blank was provided for these core samples.

ANALYTICAL RESULTS

Analytical results appear in the Sample Data Summary. Sample and duplicate results are presented in the tables in the Sample Data Summary while any rerun results are provided in footnotes to the tables. Due to a sample log-in error, none of the five drainable liquid samples (S95T000504, S95T000520, S95T000645, S95T000669, and S95T000677) were filtered prior to DSC and TGA analyses as required by the TCP. However, the amount of solids in these samples would be minimal since the drainable liquid samples were allowed to settle in the hot cell prior to subsampling for analysis.

TGA (Moisture)

The weight percent water by TGA was performed using procedure LA-560-112, Rev. A-2 with a nitrogen purge. Results ranged from 4.435 to 42.20 weight percent water for the solids and 59.64 to 76.75 weight percent water for drainable liquids. RPDs were below 10% for all but one sample; a rerun of this sample resulted in an acceptable RPD. The Laboratory Measurement Control System (LMCS) control standard for all samples was well within the program's specified accuracy control limits of 90 to 110 percent.

Average results for two samples were less than the notification limit of 17 weight percent water (notification is made if the sample is analyzed at less than 17 percent water). These samples were the upper half of the solids from core 72, segment 3 (S95T000694) and the lower half solids from core 76, segment 2 (S95T000661) which had average water contents of 13.48 and 4.435 percent water, respectively. Neither of these samples exhibited exotherms in the DSC analysis. A third sample had one result which exceeded the notification limit. The result for the upper half of the solids for core 76, segment 2 (S95T000655) was 30.71 weight percent and the duplicate result was 12.5 weight percent resulting in an average of 21.61 weight percent; a rerun gave 29.89 weight percent.

DSC

Differential scanning calorimetry analyses were performed using either procedure LA-514-113, Rev. B-1 under a nitrogen purge on a Mettler DSC 20 instrument or procedure LA-514-114, Rev. B-0 under a nitrogen purge on a Perkin Elmer DSC 7 instrument. The DSC scans from these two instruments show

exotherms differently; exotherms on the Perkin Elmer are shown as downward peaks while the Mettler shows them as upward peaks. Using the average percent water by TGA for each sample, dry weight basis results were calculated from the wet weight basis results. Both wet and dry results are given in the Sample Data Summary.

Exotherms were observed in seven of thirteen waste samples. Although the average of the sample and duplicate results did not exceed the notification limit, one result for the upper half of the solids in core 72, segment 2 (S95T000681) exceeded the notification limit of >481 J/g (dry weight basis). The result for this sample was 523.5 J/g and the duplicate was 170.3 J/g giving an average of 346.9 J/g (102% RPD); a rerun gave 109.3 J/g. Secondary analyses will be performed for this sample. The drainable liquid from Core 76, segment 2 (S95T000645) had two exotherms, the first at about 366°C and the second at about 412°C; the Sample Data Summary shows only the first exotherm as the wet sample result, but uses the sum of the first and second exotherms to calculate the dry sample exotherm result.

Total Alpha

The total alpha analyses were performed using procedure LA-508-101, rev. D-2. All total alpha results were below the notification limit; results ranged from 0.142 to 2.00 $\mu\text{Ci/g}$. Five of eight samples exceeded the precision criteria (relative percent differences above 10%). Spike recoveries for five samples were slightly outside the acceptable range of 90 to 110%; recoveries ranged from 82.6 to 114.9%. However, alpha results were less than 5% of the action limit for total alpha and reruns were not requested.

Lithium

Lithium analyses were performed by ICP using procedure LA-505-151, rev. D-2. Results are available for 7 of the 13 tank samples (the remaining analyses are yet to be completed); results ranged from <10.0 to 1110 $\mu\text{g/mL}$. Spike recoveries and LMCS control standards for all samples but one was well within the program's specified accuracy control limits of 90 to 110 percent. The remaining sample had a slightly lower spike recovery of 89.84%. RPDs were well below the required 10%.

Three drainable liquid samples (core 72, segment 2 and core 76, segments 2 and 3) contained lithium concentrations above the 100 $\mu\text{g/mL}$ notification limit. Average concentrations for these samples ranged from 154.4 to 1110 $\mu\text{g/mL}$. Bromide analyses will be performed in accordance with the TCP.

Reference: WHC-SD-WM-TP-259, Rev. 1, "Tank 241-C-105 Tank Characterization Plan," dated March 8, 1995, Westinghouse Hanford Company, Richland, Washington, 99352.

Table 1. Sample Receipt and Extrusion for Tank 241-C-105 Core Samples

Sample	Date Sampled	Date Received at Lab	Date Extruded	Sample Recovered	Sample Description	Sample Numbers
Core 72, Segment 1	3/14/95	3/15/95	3/23/95	Solid: 49.47 g Drainable Liquid: 23.06 g Liner Liquid: 10.75 g	The solids were wet and crumbly and did not maintain the shape of the sampler. The drainable liquid was dark black in color. After collecting the drainable liquid, there appeared to be a yellow/olive colored oily film remaining on the extrusion tray. After collecting the solid material, water was added to the extrusion tray to test the solubility of the film; the oily film appeared to be water soluble.	Solid: S95T000673, S95T000674 Drainable Liquid: S95T000669, S95T000670
Core 72, Segment 2	3/15/95	3/15/95	3/23/95	Solid: 47.92 g Drainable Liquid: 70.33 g Liner Liquid: 7.51 g	This segment was similar in appearance to segment 1 of core 72. The solids were black and crumbly and did not maintain the shape of the sampler. The drainable liquid was black in color and no organic phase was visible.	Solid: S96T000681, S95T000682 Drainable Liquid: S95T000677, S95T000678
Core 72, Segment 3	3/15/95	3/15/95	3/24/95	Solid: 370.99 g Drainable Liquid: none Liner Liquid: none	About 14 inches of solids were extruded. The solids were different in color and texture than the previous two segments (segments 1 and 2 of core 72). Solids ranged in color from light brown to dark brown. The sample was soft and moist and retained the shape of the sampler after extrusion. The lower 5 inches of solids were collected as the lower half of the solids and the upper 9 inches were collected as the upper half of the solids. There was a small amount of unrecoverable drainable liquid on the extrusion tray.	Upper Half Solids: S95T000694, S95T000675, S95T000674 Lower Half Solids: S95T000700, S95T000701
Core 76, Segment 1	3/21/95	3/23/95	3/29/95	Solid: 16.21 g Drainable Liquid: 104.95 g Liner Liquid: 7.60 g	The solids were black/gray in color and appeared crystalline; they were wet and crumbly (did not retain the shape of the sampler). The drainable liquid was dark black in color and had solids in it; no organic phase was visible.	Solid: S95T000500, S95T000501 Drainable Liquid: S95T000504, S95T000505
Core 76, Segment 2	3/22/95	3/23/95	3/29/95	Solid: 55.49 g Drainable Liquid: 164.55 g Liner Liquid: 22.79 g	The solids were black in color and according to the photographs, are similar in appearance to segments 1 and 2 of core 72. The drainable liquid was black; no organic phase was visible.	Upper Half Solids: S95T000655, S95T000656 Lower Half Solids: S95T000661, S95T000663 Drainable Liquid: S95T000645, S95T000648
Core 76, Segment 3	3/22/95	3/23/95	3/29/95	Solid: 14.72 g Drainable Liquid: 51.77 g Liner Liquid: 32.41 g	The solids were black and appeared to be sludge rather than crystalline material collected in segment 1 of core 76. The drainable liquid was black; no organic phase was visible.	Solid: S95T000516, S95T000517 Drainable Liquid: S95T000520, S95T000523
Field Blank	N/A	3/23/95	3/29/95	Drainable Liquid: 279 g	The field blank was a clear liquid.	Drainable Liquid: S95T000666, S95T000667

WHC-SD-WM-DP-108, REV. 0

SAMPLE DATA SUMMARY

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 72
SEGMENT #: 1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
					Lower	Upper										
S95T000673			% Water by TGA using Mettler	%	17.000	200.000	99.26	n/a	33.28	36.59	34.94	9.47	n/a	n/a		n/a
S95T000673			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	424.4	238.9	331.6	55.9	n/a	n/a		n/a
S95T000673			DSC Exotherm using Mettler	Joules/g	0.000	481.000	109.0	n/a	276.1	155.4	215.8	55.9	n/a	n/a		n/a
S95T000674	F		Lithium -ICP-Fusion	ug/g	-1.000	100.000										
S95T000674	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	110.1	<3.45e-01	2.420	1.31e+0	1.86e+00	59.5	114.9	8.24e-01		33.6

=> Limit violated
=> Selected Limit

Note: DSC for sample 3 S95t000673 was rerun. rerun result was 198.5 J/g (305.1 J/g dry).
TGA for Sample 3 S95t000673 was rerun. rerun result was 35.65.

WHC-SD-WM-DP-108, REV.0

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Page: 1

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 72
SEGMENT #: 1

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000669			% Water by TGA on Perkin Elmer	%	17.000	200.000	98.48	n/a	59.88	59.40	59.64	0.80	n/a	n/a	n/a
S95T000669			DSC Exotherm on Perkin Elmer	Joules/g	1.000	481.000	102.2	n/a	9.040	12.34	10.69	30.9	n/a	n/a	n/a
S95T000669			DSC Exotherm Dry Calculated	Joules/g Dry	1.000	481.000	n/a	n/a	22.40	30.57	26.48	30.8	n/a	n/a	n/a
S95T000670	B		Lithium -ICP-Acid Adjust	ug/mL	0.000	100.000	101.1	1.00e-03	< 10.0000	<10.0000	n/a	n/a	97.58	10.00	n/a

=> Limit violated

=> Selected Limit

Note: DSC for Sample #S95T000669 was rerun. Rerun was 9.10J/g (22.55 J/g Dry).

WHC-SD-WM-DP-108, REV. 0

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Page: 2

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 72
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000681			% Water by IGA using Mettler	%	17.000	200.000	99.26	n/a	37.88	36.54	37.21	3.60	n/a	n/a	n/a
S95T000681			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	523.5	170.3	346.9	102	n/a	n/a	n/a
S95T000681			DSC Exotherm using Mettler	Joules/g	0.000	481.000	109.0	n/a	328.7	106.9	217.8	102	n/a	n/a	n/a
S95T000682	F		Lithium -ICP-fusion	ug/g	1.000	100.000	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	1.00e-02	n/a
S95T000682	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	110.1	<3.45e-01	2.010	1.87e+0	1.94e+00	7.22	114.0	1.050	46.3

=> Limit violated

=> Selected Limit

Note: DSC for Sample #S95T000681 was rerun. Rerun result was 68.6 J/g (109.3 J/g Dry)

WHC-SD-WM-DP-108, REV. 0

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 72
SEGMENT #: 2

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000677			% Water by TGA on Perkin Elmer	%	17.000	200.000	98.48	n/a	72.20	72.27	72.23	0.10	n/a	n/a	n/a
S95T000677			DSC Exotherm on Perkin Elmer	Joules/g	1.000	481.000	102.2	n/a	3.510	3.79	3.650	7.67	n/a	n/a	n/a
S95T000677			DSC Exotherm Dry Calculated	Joules/g Dry	1.000	481.000	n/a	n/a	12.64	13.65	13.14	7.68	n/a	n/a	n/a
S95T000678	B		Lithium -ICP-Acid Adjust	ug/mL	0.000	100.000	101.1	1.00e-03	747.6	733.3301	740.4	1.92	99.43	10.00	n/a

=> Limit violated
=> Selected Limit

Note: TGA for Sample #S95T000655 was rerun. Rerun result was 29.89%.

WHC-SD-WM-DP-108, REV. 0

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A-0002-1

Page: 3

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 72
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000694			% Water by TGA using Mettler	%	17.000	200.000	99.61	n/a	12.91	14.05	13.48	8.46	n/a	n/a	n/a
S95T000694			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000694			DSC Exotherm using Mettler	Joules/g	0.000	481.000	109.7	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000695	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	89.53	<7.13e-02	8.61e-01	9.02e-1	8.81e-01	4.65	85.30	1.62e-01	20.9

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000700			% Water by TGA using Mettler	%	17.000	200.000	99.61	n/a	21.04	19.48	20.26	7.70	n/a	n/a	n/a
S95T000700			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000700			DSC Exotherm using Mettler	Joules/g	0.000	481.000	109.7	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000701	F		Lithium -ICP-Fusion	ug/g	-1.000	100.000	103.3	1.30e-02	< 37.2483	<37.2900	n/a	n/a	87.59	37.20	n/a
S95T000701	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	89.53	<2.17e-02	1.200	1.30e+0	1.25e+00	8.00	100.5	4.90e-02	8.9

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-108, REV.0

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 76
SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000500			% Water by TGA using Mettler	%	17.000	200.000	98.31	n/a	42.75	41.64	42.20	2.63	n/a	n/a	n/a
S95T000500			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	473.2	431.3	452.2	9.26	n/a	n/a	n/a
S95T000500			DSC Exotherm using Mettler	Joules/g	0.000	481.000	115.6	n/a	273.5	249.3	261.4	9.26	n/a	n/a	n/a
S95T000501	F		Lithium - ICP-Fusion	ug/g	1.000	100.000									
S95T000501	F		Alpha of Digested Solid	uCi/g	1.000	41.000	99.32	<1.80e-02	1.30e-01	1.53e-1	1.42e-01	16.3	82.60	4.20e-02	30.9

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-108, REV. 0

03-may-1995 13:02:25
A-0002-1

Page: 4

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 76
SEGMENT #: 1

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000504			% Water by TGA on Perkin Elmer	%	17.000	200.000	97.58	n/a	61.84	62.01	61.92	0.27	n/a	n/a	n/a
S95T000504			DSC Exotherm on Perkin Elmer	Joules/g	-1.000	481.000	101.7	n/a	8.490	9.74	9.115	13.7	n/a	n/a	n/a
S95T000504			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	481.000	n/a	n/a	22.30	25.58	23.94	13.7	n/a	n/a	n/a
S95T000505	B		Lithium -ICP-Acid Adjust	ug/mL	0.000	100.000	101.1	1.00e-03	< 10.0000	<10.0000	n/a	n/a	98.50	10.00	n/a

=> Limit violated

=> Selected Limit

13

WHC-SD-WM-DP-108. REV.0

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 76
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000655			% Water by TGA on Perkin Elmer	%	17.000	200.000	97.47	n/a	30.71	12.5	21.61	84.3	n/a	n/a	n/a
S95T000655			DSC Exotherm on Perkin Elmer	Joules/g	0.000	481.000	101.9	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000655			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000656	F		Lithium -ICP-Fusion	ug/g	-1.000	100.000	104.2	8.00e-03	< LDL	<80.2797	n/a	n/a	89.84	79.90	n/a
S95T000656	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	89.53	<2.47e-01	9.94e-01	1.71e+0	1.35e+00	53.0	87.70	5.77e-01	46.9

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000661			% Water by TGA on Perkin Elmer	%	17.000	200.000	98.82	n/a	4.540	4.33	4.435	4.74	n/a	n/a	n/a
S95T000661			DSC Exotherm on Perkin Elmer	Joules/g	0.000	481.000	104.1	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000661			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000663	F		Lithium -ICP-Fusion	ug/g	-1.000	100.000	104.2	8.00e-03	< 82.3442	<82.0197	n/a	n/a	90.95	82.30	n/a
S95T000663	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	89.53	<2.47e-01	1.320	2.67e+0	2.00e+00	67.7	96.10	1.190	62.6

=> Limit violated
=> Selected Limit

Note: TGA for Sample #S95T000655 was rerun. Rerun result was 29.89%.

14

WHC-SD-WM-DP-108, REV. 0

03-may-1995 13:02:30
A-0002-1

Page: 5

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 76
SEGMENT #: 2

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
					Lower	Upper										
S95T000645			% Water by TGA using Mettler	%	17.000	200.000	99.09	n/a	65.11	60.88	63.00	6.71	n/a	n/a		n/a
S95T000645			DSC Exotherm Dry Calculated	Joules/g Dry	1.000	481.000	n/a	n/a	68.92	67.03	67.97	2.78	n/a	n/a		n/a
S95T000645			DSC Exotherm using Mettler	Joules/g	1.000	481.000	108.6	n/a	17.70	17.0	17.35	4.03	n/a	n/a		n/a
S95T000648	B		Lithium -ICP-Acid Adjust	ug/ml	0.000	100.000	101.1	1.00e-03	157.3	151.4538	154.4	3.79	98.18	10.00		n/a

=> Limit violated

=> Selected Limit

Note: Two exotherms were observed in Sample #S95T000645. The first exotherm result is provided as the wet sample result. The second exotherm measured 7.8 J/g for both sample and duplicate. The sum of the first and second exotherm was used to calculate the dry exotherm results.

WHC-SD-WM-DP-108, REV. 0

03-may-1995 12:50:50
A-0002-1

Page: 6

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 76
SEGMENT #: 3

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000516			% Water by TGA using Mettler	%	17.000	200.000	98.31	n/a	21.54	20.56	21.05	4.66	n/a	n/a	n/a
S95T000516			DSC Exotherm Dry Calculated	Joules/g Dry	0.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000516			DSC Exotherm using Mettler	Joules/g	0.000	481.000	115.6	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000517	F		Lithium -ICP-Fusion	ug/g	1.000	100.000									
S95T000517	F		Alpha of Digested Solid	uCi/g	1.000	41.000	99.32	<1.80e-02	1.060	8.66e-1	9.63e-01	20.1	106.3	3.20e-01	30.9

=> Limit violated

=> Selected Limit

16

WHC-SD-WM-DP-108, REV.0

03-may-1995 13:02:35
A-0002-1

Page: 6

45 Day Safety Screen Results for C-105
C-105

CORE NUMBER: 76
SEGMENT #: 3

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000520			% Water by TGA on Perkin Elmer	%	17.000	200.000	97.06	n/a	77.19	76.3	76.75	1.16	n/a	n/a	n/a
S95T000520			DSC Exotherm on Perkin Elmer	Joules/g	-1.000	481.000	101.6	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000520			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000523	B		Lithium -ICP-Acid Adjust	ug/mL	0.000	100.000	101.1	1.00e-03	1.11e+03	1105.226	1110	0.77	101.4	10.00	n/a

=> Limit violated

=> Selected Limit

WHC-SD-WM-DP-108, REV.0

45 Day Safety Screen Results for C-105
C-105

FIELD BLANK

CORE NUMBER: 76

SEGMENT #: n/a

SEGMENT PORTION: n/a

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000666			% Water by TGA using Mettler	%	17.000	200.000	99.09	n/a	100.2	100.1	100.2	0.10	n/a	n/a	n/a
S95T000666			DSC Exotherm Dry Calculated	Joules/g Dry	1.000	481.000	n/a	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000666			DSC Exotherm using Mettler	Joules/g	1.000	481.000	108.6	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000666			Alpha in Liquid Samples	uCi/mL	0.000	41.000	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	1.00e-07	
S95T000667	D		Lithium-ICP-Acid Dil.	ug/mL	0.000	100.000	103.0	1.00e-03	2.37e-01	0.2351	0.236	0.89	97.96	1.00e-02	n/a
S95T000667	D		Alpha in Liquid Samples	uCi/mL	0.000	41.000	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	1.00e-07	

=> Limit violated

=> Selected Limit

18

WHC-SD-WM-DP-108, REV. 0

WHC-SD-WM-DP-108, REV. 0

UNDIGESTED ANALYSES RESULTS - DIRECT

LABCORE Data Entry Template for Worklist# 937

Analyst: BWS Instrument: DSC01 Book # 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>32.6</u>	<u>N/A</u>	Joules/g
95000040	C-105	2 SAMPLE	S95T000500	0	DSC-01	SOLID	<u>N/A</u>	<u>273.5</u>		Joules/g
95000040	C-105	3 DUP	S95T000500	0	DSC-01	SOLID	<u>273.5</u>	<u>249.3</u>	<u>N/A</u>	Joules/g
		4 STD			DSC-01	SOLID	<u>28.45</u>	<u>32.9</u>	<u>N/A</u>	Joules/g
95000040	C-105	5 SAMPLE	S95T000516	0	DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000040	C-105	6 DUP	S95T000516	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

Final page for worklist # 937

See attached for signatures
Analyst Signature _____ Date _____

Data entered + verified by
Blandina Valenzuela 4/27/95
Analyst Signature _____ Date _____

Data Entry Comments: -95T000500 produced one endotherm at 115.3°C with a delta H
of 1009.1 J/g. S95T000516 produced two endotherms one at 109.3°C with a
delta H of 547.1 J/g and the second at 275.9°C with a delta H of 460.4 J/g

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 937

Analyst: DWS Instrument: DSC01 Book # 12014-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
95000040	C-105	2 SAMPLE	S95T000500	0	DSC-01	SOLID	N/A			Joules/g
95000040	C-105	3 DUP	S95T000500	0	DSC-01	SOLID			N/A	Joules/g
95000040	C-105	4 SAMPLE	S95T000516	0	DSC-01	SOLID	N/A			Joules/g
95000040	C-105	5 DUP	S95T000516	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 937

4-24-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 22 TO 27.

dsc std 12n14-a

6.340 mg

Rate: 10.0 °C/min

File: 00001.001

DSC METTLER 21-Apr-95

Ident: 0.0

222-S Laboratory

S95T0005000 N2
 30.444 mg
 Rate: 10.0 °C/min
 File: 00003.001 DSC METTLER 21-Apr-95
 Ident: 0.0 222-S Laboratory

S95T000500 (DUP) N2

43.547 mg

File: 00005.001 DSC METTLER 21-Apr-95

Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

EXO

Integration
Delta H33010 mJ
Peak 111.3°C
-81.9 mW

Integration
Delta H10882 mJ
Peak 249.3 J/g
412.3°C
17.4 mW

DSCSTD 12N14-A

6.340 mg

Rate: 10.0 °C/min

File: 00010.001

DSC METTLER

23-Apr-95

Ident: 0.0

222-S Laboratory

exo>

10. mW

Integration

Delta H 209 mJ

32.9 J/g

Peak 158.2 °C

-15.1 mW

David W. Smith

4-24-95

120.

140.

160.

180. °C

WHC-SD-WM-DP-108 REV. 0

S95T000516 N2

34.679 mg

Rate: 10.0 °C/min

File: 00012.001

DSC METTLER

23-Apr-95

Ident: 0.0

222-S Laboratory

exo >

50. mW

Integration
Delta H18974 mJ
547.1 J/g
Peak 109.3°C
-84.9 mW

Integration
Delta H15965 mJ
460.4 J/g
Peak 275.9°C
-51.4 mW

100.

200.

300.

400.

°C

S95T000516 (DUP) N2
31.161 mg
Rate: 10.0 °C/min
File: 00014.001 DSC METTLER 23-Apr-95
Ident: 0.0 222-S Laboratory

LABCORE Data Entry Template for Worklist# 941

Analyst: SME Instrument: DSC01 Book # 12N14-4

Method: LA-514-114 Rev/Mod P-0

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	LIQUID	28.45	28.918	N/A	Joules/g
95000040	C-105	2 SAMPLE	S95T000504	0	DSC-03	LIQUID	N/A	8.491		Joules/g
95000040	C-105	3 DUP	S95T000504	0	DSC-03	LIQUID	8.491	9.743	N/A	Joules/g
		4 STD			DSC-03	LIQUID	28.45	28.896	N/A	Joules/g
95000040	C-105	5 SAMPLE	S95T000520	0	DSC-03	LIQUID	N/A	Ø		Joules/g
95000040	C-105	6 DUP	S95T000520	0	DSC-03	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 941

Janet Lye for Susie Fulton 4/12/95
Analyst Signature Date
see original attached
for signature on 5-3-95

Analyst Signature Date

Entered & posted 4/18/95 J.M. Lye

Data Entry Comments:

*S95T000504 has two endotherms, 1353.29 J/g at 122°C,
7.5 J/g at 253°C; duplicate has 1371.6 J/g at 121°C, 20.0 J/g at 252°C;
S95T000520 has two endotherms, 1767.79 J/g at 115°C, 10.29 J/g at 149°C;
duplicate has 1751.0 J/g at 115°C, 120.6 J/g at 142°C. J.M. Lye
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code. 4/18/95*

Curve 1: DSC

File info: IND040701 Fri Apr 7 09:16:29 1995

Sample Weight: 6.687 mg

Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 51 TO 56 *7/08/95*

24.0 -	X1	156.633 °C
	X2	163.566 °C
22.0 -	Peak	159.455 °C
20.0 -	Area	193.374 mJ
	ΔH	28.918 J/g
18.0 -	Height	15.908 mW
	Onset	157.131 °C

62
51
4/08/95

Heat Flow (mW)

WHC-SD-WM-DP-108, REV.0

N2 exotherm down

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

SM FULTON
Westinghouse Hanford Co.
222-S Lab
Fri Apr 7 09:28:25 1995

SM Fulton 4/7/95

Curve 1: DSC

File info: SAM040701 Fri Apr 7 11:56:10 1995

Sample Weight: 10.940 mg

S95T000504, 10 C/min

exotherm down, nitrogen purge gas

TEMP1: 25.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 500.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Fri Apr 7 13:25:39 1995

WHC-SD-WM-DP-108, REV.0

BEST AVAILABLE COPY

Curve 1: DSC

File info: SAM040702 Fri Apr 7 14:29:15 1995

Sample Weight: 12.160 mg

S95T000504 (DUP), 10C/min

WHC-SD-WM-DP-108, REV.0

BEST AVAILABLE COPY

exotherm down, nitrogen purge gas

TEMP1: 35.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 500.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Fri Apr 7 14:37:36 1995

Curve 1: DSC

File info: IND041001 Mon Apr 10 09:17:56 1995

Sample Weight: 6.687 mg

Indium at 10C/min

	X1	156.800 °C
22.0 -	X2	163.966 °C
	Peak	159.608 °C
20.0 -	Area	193.231 mJ
18.0 -	ΔH	28.896 J/g
	Height	15.835 mW
16.0 -	Onset	157.442 °C

Heat Flow (mW)

14.0 -
12.0 -
10.0 -
8.0 -
6.0 -
4.0 -

140.0 145.0 150.0 155.0 160.0 165.0 170.0 175.0

Temperature (°C)

N2 exotherm down

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP: 175.0 °C

SM FULTON
Westinghouse Hanford Co.
222-S Lab
Mon Apr 10 09:23:34 1995

WHC-SD-WM-DP-108, REV.0

Lusie M. Fulton 4-10-95

Curve 1: DSC

File info: SAM041001 Mon Apr 10 12:26:56 1995

Sample Weight: 13.020 mg

S95T000520, 10C/min

WHC-SD-WM-DP-108, REV.0

BEST AVAILABLE COPY

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Mon Apr 10 13:57:03 1995

Curve 1: DSC

File info: SAM041002 Mon Apr 10 14:47:13 1995

Sample Weight: 12.010 mg

S95T000520 (DUP), 10C/min

exotherm down, nitrogen purge gas

TEMP: 25.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP: 500.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Mon Apr 10 14:49:28 1995

BEST AVAILABLE COPY
WHC-SD-WM-DP-108, REV.0

WHC-SD-WM-DP-108, REV. 0
LABCORE Data Entry Template for Worklist# 1015

Analyst: SLF Instrument: DSC01 Book # 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	28.45	31.2	N/A	Joules/g
95000028	C-105	2 SAMPLE	S95T000694	0	DSC-01	SOLID	N/A	Ø		Joules/g
95000028	C-105	3 DUP	S95T000694	0	DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000028	C-105	4 SAMPLE	S95T000700	0	DSC-01	SOLID	N/A	Ø		Joules/g
95000028	C-105	5 DUP	S95T000700	0	DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 1015

Luis M. Pulton 4-27-95
Analyst Signature Date

SLF 4-27-95
Analyst Signature Date

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 32 TO 33 ⁴⁰ ₃₆ ¹⁴¹ _{8/27/95}

DSC STD 12N14-A File: 00058.001 DSC METTLER 26-Apr-95
6.654 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory

120. 140. 160. 180. °C
Lucie M. Fulton 4-27-95

28 ¹⁴¹ _{8/27/95}

BEST AVAILABLE COPY

S95T000694 N2

17.001 mg

File: 00061.001 DSC METTLER 27-Apr-95

Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

BEST AVAILABLE COPY

S95T000694 (DUP) N2

22.947 mg

Rate: 10.0 °C/min

File: 00063.001 DSC METTLER 27-Apr-95

Ident: 0.0 222-S Laboratory

BEST AVAILABLE COPY

32
150845

BEST AVAILABLE COPY

S95T000700 (DUP) N2

21.111 mg

Rate: 10.0 °C/min

File: 00067.001

DSC METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

LABCORE Data Entry Template for Worklist# 1016

Analyst: StF Instrument: DSC01 Book # 12N14-A

Method: LA-514-114 Rev/Mod BD ^{5/1/95} _{BDV}

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	28.45	29.00	N/A	Joules/g
95000040	C-105	2 SAMPLE	S95T000655	0	DSC-03	SOLID	N/A	0		Joules/g
95000040	C-105	3 DUP	S95T000655	0	DSC-03	SOLID	0	74.42 ^{5/1/95} _{BDV}	N/A	Joules/g
95000040	C-105	4 TRIPL	S95T000655	0	DSC-03	SOLID	0	0	N/A	Joules/g
		5 STD			DSC-03	SOLID	28.45	29.09	N/A	Joules/g
95000040	C-105	6 SAMPLE	S95T000661	0	DSC-03	SOLID	N/A	0		Joules/g
95000040	C-105	7 DUP	S95T000661	0	DSC-03	SOLID	0	75.99 ^{5/1/95} _{BDV}	N/A	Joules/g
		8 STD			DSC-03	SOLID	28.45	29.61	N/A	Joules/g
95000040	C-105	9 TRIPL	S95T000661	0	DSC-03	SOLID	0	0	N/A	Joules/g

Final page for worklist # 1016

Lurie M. Dutton 4-28-95
Analyst Signature Date

Randy D. Smith 4-29-95
Analyst Signature Date

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

S95T000655 has two endotherms 721.94 J/g at 121°C, 290.9 J/g at 282°C; dup has 656 J/g at 119°C, 344 J/g at 287°C, the exotherm is at 166°C; triple has 735 J/g at 122°C, 3019 J/g at 282°C. gmf

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,

R = Replicate Number, A = Aliquot Code.

S95T000661 has two endotherms 1350 J/g at 120°C, 269 J/g at 282°C; dup has 605 J/g at 103°C, 247 J/g at 283°C, exotherm at 389°C; triple has 700 J/g at 124°C, 289 J/g at 283°C. gmf

REPORT NO. 100
 PLAN NO. 100
 DATE: APR 27 08:51:42 1995
 ANALYST: J. J. J. J.
 DIVISION: 100

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 42 TO 43

1	100.000 °C
2	101.000 °C
3	102.000 °C
4	103.000 °C
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437	5

Thu Apr 27 17:11:29 1995

Handwritten: HWC 5/28/95

Thu Apr 27 18:27:54 1995

DATE: 4/27/95
 FILE: 108
 SAMPLE: 108
 CONTAINER: 108

100
 9000

Thu Apr 27 19:57:39 1995

Handwritten signature/initials

Susie M. Jeltor

Thu Apr 27 20:09:21 1995

5/20/95 11:00 AM
File: 1000000001 Thu Apr 27 21:58:31 1995
Sample: 1000000001
Endothermic: 1000000001

5/20/95 11:00 AM
File: 1000000001 Thu Apr 27 21:58:31 1995
Sample: 1000000001
Endothermic: 1000000001
Thu Apr 27 21:58:26 1995

73
5/20/95

Thu Apr 27 23:00:37 1995

See Mr. Jullon 4-28-95

Fri Apr 28 08:34:59 1995

WHC-SD-WM-DP-108, REV. 0
 150.100 °C
 350.700 °C
 350.800 °C
 350.714 MJ
 350.808 J/g
 350.800 MW
 350.100 °C

*Slack
 JWC*

Fri Apr 28 13:36:54 1995

LABCORE Data Entry Template for Worklist# 1018

Analyst: SIMF Instrument: DSC01 Book # 12N147

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>30.8</u>	<u>N/A</u>	Joules/g
95000028	C-105	2 SAMPLE	S95T000673	0	DSC-01	SOLID	<u>N/A</u>	<u>276.1</u>		Joules/g
95000028	C-105	3 DUP	S95T000673	0	DSC-01	SOLID	<u>276.1</u>	<u>155.4</u>	<u>N/A</u>	Joules/g
95000028	C-105	4 TRIPL	S95T000673	0	DSC-01	SOLID	<u>276.1</u>	<u>148.5</u>	<u>N/A</u>	Joules/g
95000028	C-105	5 SAMPLE	S95T000681	0	DSC-01	SOLID	<u>N/A</u>	<u>328.7</u>		Joules/g
95000028	C-105	6 DUP	S95T000681	0	DSC-01	SOLID	<u>328.7</u>	<u>106.9</u>	<u>N/A</u>	Joules/g
		7 STD			DSC-01	SOLID	<u>28.45</u>	<u>31.0</u>	<u>N/A</u>	Joules/g
95000028	C-105	8 TRIPL	S95T000681	0	DSC-01	SOLID	<u>328.7</u>	<u>68.6</u>	<u>N/A</u>	Joules/g

Final page for worklist # 1018

See attached for signature 5/1/95
Analyst Signature Date

[Signature] 5/1/95
Analyst Signature Date

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

S95T000673 has two endotherms 849.7 J/g at 111°C, 78.6 J/g at 252°C; dup has 847.7 J/g at 125°C, 82.3 J/g at 252°C, tripl has 949.2 J/g at 108°C, 176.8 J/g at 283°C. S95T000681 has no endotherm
864.2 J/g at 117.3°C, dup has two endotherms 780.9 J/g at 109°C, 182.0 J/g at 285°C, tripl has two endotherms 724.7 J/g at 115°C, 248.4 J/g at 246°C. SIMF
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1018

Analyst: SF Instrument: DSC01 Book # 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
95000028	C-105	2 SAMPLE	S95T000673	0	DSC-01	SOLID	N/A			Joules/g
95000028	C-105	3 DUP	S95T000673	0	DSC-01	SOLID			N/A	Joules/g
95000028	C-105	4 SAMPLE	S95T000681	0	DSC-01	SOLID	N/A			Joules/g
95000028	C-105	5 DUP	S95T000681	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1018

Susie M. Oulton 4-27-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

52

35

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 53/6 TO 43. ^{60 MW 4/28/95}

DSC STD 12N14-A

6.654 mg

Rate: 10.0 °C/min

File: 00069.001

DSC METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

exo>

10. mW

Integration
Delta H 205 mJ
30.8 J/g
Peak 159.0 °C
-13.2 mW

120.

140.

160.

180.

°C

WHC-SD-WM-DP-108, REV. 0

S95T000673 N2
8.735 mg
File: 00071.001 DSC METTLER 27-Apr-95
Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory

S95T000673 (DUP) N2
 20.710 mg
 File: 00073.001 DSC METTLER 27-Apr-95
 Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory

S95T000673 (DUP2) N2
 8.849 mg
 Rate: 10.0 °C/min
 File: 00075.001 DSC METTLER 27-Apr-95
 Ident: 0.0 222-S Laboratory

S95T000681 N2
24.255 mg

File: 00077.001 DSC METTLER 27-Apr-95
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

exo >

50. mW

Integration
Delta H 7973 mJ
328.7 J/g
Peak 320.2 °C
11.6 mW

Integration
Delta H 20961 mJ
864.2 J/g
Peak 117.3 °C
-84.5 mW

°C

400.

300.

200.

100.

S95T000681 (DUP) N2
 36.524 mg
 Rate: 10.0 °C/min
 File: 00079.001 DSC METTLER 27-Apr-95
 Ident: 0.0 222-S Laboratory

DSC STD 12N14-A

6.340 mg

Rate: 10.0 °C/min

File: 00081.001

DSC METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

exo>

10. mW

Integration

Delta H 197 mJ

31.0 J/g

Peak 159.0°C

-13.1 mW

120.

140.

160.

180. °C

WJG-SD-WM-DP-108, REV.0

S95T000681 (TRIPL) N2
 18.912 mg
 Rate: 10.0 °C/min
 File: 00085.001 DSC METTLER 28-Apr-95
 Ident: 0.0 222-S Laboratory

WHC-SD-WM-DP-108, REV. 0
LABCORE Data Entry Template for Worklist# 1031

Analyst: KRM Instrument: DSC01 B-1 Book # 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-105
U-202 DSC under N2. bdv
4/28/95 BDV

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	LIQUID	<u>28.45</u>	<u>30.9</u>	<u>N/A</u>	Joules/g
95000040	C-105	2 SAMPLE	S95T000645	0	DSC-01	LIQUID	<u>N/A</u>	<u>17.7</u>		Joules/g
95000040	C-105	3 DUP	S95T000645	0	DSC-01	LIQUID	<u>17.7</u>	<u>17.0</u>	<u>N/A</u>	Joules/g
95000040	C-105	4 SAMPLE	S95T000666	0	DSC-01	LIQUID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000040	C-105	5 DUP	S95T000666	0	DSC-01	LIQUID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

Final page for worklist # 1031

[Signature] 4-29-95
Analyst Signature Date

[Signature] 3/4 5/95
Analyst Signature Date

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

S95T000645 produced one other exotherm at 411.7°C with
a delta H of 7.8 J/g. It also produced two endotherms, one at 113.3°C with a
delta H of 1437.4 J/g and the second at 253.2°C with a delta H of 26.7 J/g.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

S95T000666 produced only one endotherm at 99.3°C with a delta H of 1566.6
J/g.
61 144 5/1/95

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 45 TO 49.

66 JAW
5/08/95

DSC STD 12N14-A

6.340 mg

Rate: 10.0 °C/min

File: 00091.001

DSC METTLER

28-Apr-95

Ident: 0.0

222-S Laboratory

exo>

10. mW

Integration

Delta H 196 mJ

30.9 J/g

Peak 158.6 °C

-13.0 mW

120.

140.

160.

180. °C

BEST AVAILABLE COPY

[Signature]

4-29-95

WHC-SD-WM-DP-108, REV. 0

BEST AVAILABLE COPY

S95T000645 N2
13.728 mg

File: 00093.001 DSC METTLER 28-Apr-95
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

46
5/04/95

BEST AVAILABLE COPY

S95T000645 (DUP) N2
13.313 mg
Rate: 10.0 °C/min
File: 00095.001 DSC METTLER 29-Apr-95
Ident: 0.0 222-S Laboratory

BEST AVAILABLE COPY

S95T000666 N2

9.983 mg

File: 00097.001 DSC METTLER 29-Apr-95

Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

<exo>

50. mW

°C

400.

300.

200.

100.

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S95T000666 (DUP) N2

10.308 mg

Rate: 10.0 °C/min

File: 00099.001 DSC METTLER 29-Apr-95

Ident: 0.0 222-S Laboratory

1495.9 J/g

LABCORE Data Entry Template for Worklist# 1283

Analyst: SMF Instrument: DSC01 Book # 12N14-A

Method: LA-514-114 Rev/Mod B-0

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	LIQUID	<u>28.45</u>	<u>29.08</u>	<u>N/A</u>	Joules/g
95000028	C-105	2 SAMPLE	S95T000669	0	DSC-03	LIQUID	<u>N/A</u>	<u>9.04</u>		Joules/g
95000028	C-105	3 DUP	S95T000669	0	DSC-03	LIQUID	<u>9.04</u>	<u>12.34</u>	<u>N/A</u>	Joules/g
95000028	C-105	4 TRIPL	S95T000669	0	DSC-03	LIQUID	<u>9.04</u>	<u>9.10</u>	<u>N/A</u>	Joules/g
95000028	C-105	5 SAMPLE	S95T000677	0	DSC-03	LIQUID	<u>N/A</u>	<u>3.51</u>		Joules/g
95000028	C-105	6 DUP	S95T000677	0	DSC-03	LIQUID	<u>3.51</u>	<u>3.79</u>	<u>N/A</u>	Joules/g

Final page for worklist # 1283

See attached for signatures
Analyst Signature Date

Analyst Signature Date

Data Entry Comments: S95T000669 produced two endotherms one at 112.0°C with a
delta H of 1290.15 J/g second at 256.0°C with a delta H of 25.07 J/g
S95T000677 produced one endotherm at 113.5°C with a delta H of 1612.4 J/g

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1283

Analyst: SMF Instrument: DSC01 Book # 12N14-A

Method: LA-514-¹¹⁴113 Rev/Mod B-0
SMF

Worklist Comment: Please run C-105 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	LIQUID			N/A	Joules/g
95000028	C-105	2 SAMPLE	S95T000669	0	DSC-01	LIQUID	N/A			Joules/g
95000028	C-105	3 DUP	S95T000669	0	DSC-01	LIQUID			N/A	Joules/g
95000028	C-105	4 SAMPLE	S95T000677	0	DSC-01	LIQUID	N/A			Joules/g
95000028	C-105	5 DUP	S95T000677	0	DSC-01	LIQUID			N/A	Joules/g

Final page for worklist # 1283

Susie M. Jilton 5-2-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

S95T000669 Bright yellow liquid

S95T000677- Bright yellow liquid

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Curve 1: DSC

File info: IND050201 Tue May 2 08:24:52 1995

Sample Weight: 6.687 mg

Indium at 10c/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 694 TO 97 ^{74 JUV} _{5/2/95}

WHC-SD-WM-DP-108, REV.0

N2 exotherm down

TEMP1: 150.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 170.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Tue May 2 08:26:39 1995

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WHC-SD-WM-DP-108, REV. 0

Curve 1: DSC
File info: SAM050201 Tue May 2 11:05:27 1995
Sample Weight: 10.970 mg
S95T000669, 10C/min

exotherm down, nitrogen purge gas
TEMP1: 35.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 500.0 °C
SM Fulton
Westinghouse Hanford Co.
222-S Lab
Tue May 2 11:31:56 1995

Curve 1: DSC

File info: SAM050202 Tue May 2 12:23:20 1995

Sample Weight: 12.680 mg

S95T000669 (DUP), 10C/min

exotherm down, nitrogen purge gas

TEMP1: 35.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 500.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Tue May 2 12:51:19 1995

WHC-SD-WM-DP-108, REV.0

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Curve 1: DSC

File info: SAM050203 Tue May 2 13:45:25 1995

Sample Weight: 11.350 mg

S95T000669 (TRIPL), 10C/min

BEST AVAILABLE COPY
WHC-SD-WM-DP-108, REV. 0

exotherm down, nitrogen purge gas

TEMP1: 35.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 500.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Tue May 2 13:53:22 1995

Curve 1: DSC

File info: SAM050204 Tue May 2 14: 45: 06 1995

Sample Weight: 10.040 mg

S95T000677, 10C/min

WHC-SD-WM-DP-108, REV.0

exotherm down, nitrogen purge gas

TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Tue May 2 14: 47: 30 1995

Curve 1: DSC
 File info: SAM050205 Tue May 2 15: 39: 14 1995
 Sample Weight: 9.180 mg
 S95T000677 (DUP), 10C/min

SM Fulton
 Westinghouse Hanford Co.
 222-S Lab
 Tue May 2 15: 46: 45 1995

exotherm down, nitrogen purge gas
 TEMP1: 35.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
 TEMP2: 500.0 °C

LABCORE Data Entry Template for Worklist# 944

Analyst: DOS Instrument: TGA01 Book # 42N8-A

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.13</u>	N/A	%
95000040	C-105	2 SAMPLE	S95T000500	0	TGA-01	SOLID	<u>N/A</u>	<u>42.75</u>		%
95000040	C-105	3 DUP	S95T000500	0	TGA-01	SOLID	<u>42.75</u>	<u>41.64</u>	N/A	%
		4 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.19</u>	N/A	%
95000040	C-105	5 SAMPLE	S95T000516	0	TGA-01	SOLID	<u>N/A</u>	<u>21.54</u>		%
95000040	C-105	6 DUP	S95T000516	0	TGA-01	SOLID	<u>21.54</u>	<u>20.56</u>	N/A	%

Final page for worklist # 944

See attached for signatures
Analyst Signature Date

R. J. ... 4-25-95
Analyst Signature Date

Verified by Blandina Valenzuela 4/25/95

Data Entry Comments: Sample S95T000500 produced a second weight loss step
of 8.55% at 300°C. Sample S95T000516 produced a second weight loss step
at approximately 225°C with a weight loss of 18.86%. Sample S95T000516

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.
was analyzed the day next day from S95T000500 4/24/95 Q standard was run
with S95T000516. 4/24/95 BDV 75

LABCORE Data Entry Template for Worklist# 944

Analyst: DW Instrument: TGA01 Book # 42N8-17

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.13</u>	N/A	%
95000040	C-105	2 SAMPLE	S95T000500	0	TGA-01	SOLID	N/A	<u>42.75</u>		%
95000040	C-105	3 DUP	S95T000500	0	TGA-01	SOLID	<u>42.75</u>	<u>41.64</u>	N/A	%
95000040	C-105	4 SAMPLE	S95T000516	0	TGA-01	SOLID	N/A			%
95000040	C-105	5 DUP	S95T000516	0	TGA-01	SOLID			N/A	%

Final page for worklist # 944

[Signature] 4-24-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 77 TO 82.

TGA STD 42N8-A

14.839 mg

Rate: 10.0 °C/min

File: 00002.001

TG

METTLER

21-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -8.63 mg

-58.13 %

ResidC. 6.21 mg

41.87 %

Dpeak 85.0 °C

5. mg

David W Smith

4-22-95

50.

100.

150.

200.

°C

WHC-SD-WM-DP-108, REV. 0

S95T000500 (DUP) N2

24.844 mg

Rate: 10.0 °C/min

File: 00006.001

Ident: 0.0

TG

METTLER

21-Apr-95

222-S Laboratory

File: 00011.001 TG METTLER 23-Apr-95
 Ident: 0.0 222-S Laboratory

TGA STD 42NB-A
 14.670 mg
 Rate: 10.0 °C/min

Step Analysis
 Height -8.54 mg
 -58.19 %
 Resid. 6.13 mg
 41.81 %
 Dpeak 84.2°C

David W. Smith
 6/24/95

S95T000516 (DUP) N2

40.323 mg

Rate: 10.0 °C/min

File: 00015.001

Ident: 0.0

TG

METTLER

23-Apr-95

222-S Laboratory

Step Analysis

Height -8.29 mg

-20.56 %

Resid. 32.03 mg

79.44 %

Step Analysis

Height -7.30 mg

-18.10 %

Resid. 24.74 mg

61.35 %

Dpeak 285.0 °C

LABCORE Data Entry Template for Worklist# 948

Analyst: SMF Instrument: TGA01 5/3/95 Book # 42N8A
Bdv

Method: LA-514-114 Rev/Mod 4-2 B-0

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	LIQUID	<u>59.19</u>	<u>57.76</u>	<u>N/A</u>	%
95000040	C-105	2 SAMPLE	S95T000504	0	TGA-03	LIQUID	<u>N/A</u>	<u>61.84</u>		%
95000040	C-105	3 DUP	S95T000504	0	TGA-03	LIQUID	<u>61.84</u>	<u>62.01</u>	<u>N/A</u>	%
		4 STD			TGA-03	LIQUID	<u>59.19</u>	<u>57.45</u>	<u>N/A</u>	%
95000040	C-105	5 SAMPLE	S95T000520	0	TGA-03	LIQUID	<u>N/A</u>	<u>77.19</u>		%
95000040	C-105	6 DUP	S95T000520	0	TGA-03	LIQUID	<u>77.19</u>	<u>76.3</u>	<u>N/A</u>	%
		7 STD			TGA-03	LIQUID	<u>59.19</u>	<u>52.34</u>	<u>N/A</u>	%
95000040	C-105	8 DUP2	S95T000520	0	TGA-03	LIQUID	<u>77.19</u>	<u>77.96</u>	<u>N/A</u>	%

Final page for worklist # 948

Jan W. Fuge for Lucie Fulton 4/14/95
Analyst Signature Date
see attached original for signature

Analyst Signature Date

Entered & verified 4/14/95.
J. M. Fuge

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 948

Analyst:

SME

Instrument: TGA01

Book #

42N8-FT

Method: LA-560-112 Rev/Mod

LA-514-114 B-0

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	LIQUID			N/A	%
95000040	C-105	2 SAMPLE	S95T000504	0	TGA-01	LIQUID	N/A			%
95000040	C-105	3 DUP STD	S95T000504	0	TGA-01	LIQUID			N/A	%
95000040	C-105	4 SAMPLE	S95T000520	0	TGA-01	LIQUID	N/A			%
95000040	C-105	5 DUP STD	S95T000520	0	TGA-01	LIQUID			N/A	%

Dup 2

Final page for worklist # 948

Luis M. Dutton 4-10-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Curve 1: TGA

File Info: TER040703 Fri Apr 7 11:44:36 1995

Sample Weight: 13.124 mg

42N8A Terliq

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 859 TO 866.

92
4/8/95

WHC-SD-WM-DP-108, REV.0

N2

TEMP1: 35.0 °C
TEMP2: 250.0 °C
TIME1: 0.0 min
RATE1: 10.0 °C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Apr 7 14:10:05 1995

SM Fulton 4/7/95

Curve 1: TGA

File info: SAM040702 Fri Apr 7 14:21:29 1995

Sample Weight: 10.576 mg

S95T000504, 10C/min

WHC-SD-WM-DP-108, REV.0

N2
TEMP1: 35.0 C
TEMP2: 500.0 C
TIME1: 0.0 min
RATE1: 10.0 C/min

Temperature (°C)

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Apr 7 14:22:41 1995

Curve 1: TGA

File info: SAM040703 Fri Apr 7 15:37:16 1995

Sample Weight: 11.750 mg

S95T000504 (DUP). 10C/min

WHC-SD-WM-DP-108, REV.0

N2

TEMP: 25.0 C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Apr 7 15:42:34 1995

Curve 1: TGA

File info: TER041001 Mon Apr 10 09:29:36 1995

Sample Weight: 15.531 mg

42N8A Terliq

WHC-SD-WM-DP-108, REV.0

N2
TEMP: 25.0 C
TIME: 0.0 min RATE: 10.0 C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Apr 10 09:32:09 1995

SM Fulton 4-10-95

Curve 1: TGA

File info: SAM041002 Mon Apr 10 12:38:08 1995

Sample Weight: 11.745 mg

S95T000520, 10C/min

WHC-SD-WM-DP-108, REV.0

N2
TEMP1: 35.0 C
TEMP2: 500.0 C
TIME1: 0.0 min
RATE1: 10.0 C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Apr 10 13:43:13 1995

Curve 1: TGA

File info: SAM041003 Mon Apr 10 14:37:58 1995

Sample Weight: 6.653 mg

S95T000520 (DUP), 10C/min

WHC-SD-WM-DP-108, REV.0

N2
TEMP1: 35.0 C
TEMP2: 500.0 C
TIME1: 0.0 min
RATE1: 10.0 C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Apr 10 14:40:07 1995

Curve 1: TGA
 File info: TER041101 Tue Apr 11 09:38:07 1995
 Sample Weight: 16.350 mg
 42N8A Ter11q

SM Fulton
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Tue Apr 11 09:48:21 1995

Temperature (°C)

10.0 C/min

0.0 min RATE

TIME

250.0 C

N2

250.0 C

Lucie M. Fulton 4-11-95

Curve 1: TGA

File info: SAM041101 Tue Apr 11 14:15:45 1995

Sample Weight: 11.907 mg

S95T000520 (DUP2), 10C/min

WHC-SD-WM-DP-108, REV. 0

N2

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min
TEMP: 500.0 C

Temperature (°C)

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Apr 12 09:03:08 1995

WHC-SD-WM-DP-108, REV. 0
LABCORE Data Entry Template for Worklist# 1037

Analyst: SWF Instrument: TGA01 Book # 42N8-17

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	LIQUID	<u>59.19</u>	<u>58.65</u>	N/A	%
95000040	C-105	2 SAMPLE	S95T000645	0	TGA-01	LIQUID	N/A	<u>65.11</u>		%
95000040	C-105	3 DUP	S95T000645	0	TGA-01	LIQUID	<u>65.11</u>	<u>60.88</u>	N/A	%
95000040	C-105	4 SAMPLE	S95T000666	0	TGA-01	LIQUID	N/A	<u>100.18</u>		%
95000040	C-105	5 DUP	S95T000666	0	TGA-01	LIQUID	<u>100.18</u>	<u>100.09</u>	N/A	%

Final page for worklist # 1037

Lusie M. Fulford 4-28-95
Analyst Signature Date

Dany D. Hernandez 4/28/95
Analyst Signature Date

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 94 TO 98.

TGA STD 42N8-A

20.812 mg

Rate: 10.0 °C/min

File: 00082.001

Ident: 0.0

TG METTLER 27-Apr-95

222-S Laboratory

Step Analysis

Height-12.21 mg

-58.65 %

ResiC. 8.61 mg

41.35 %

Dpeak 84.2 °C

S95T000645 N2

12.856 mg

Rate: 10.0 °C/min

File: 00083.001

TG

METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -8.37 mg

-65.11 %

ResiC. 4.49 mg

34.89 %

Dpeak 77.0 °C

File: 00084.001 TG METTLER 28-Apr-95
 Ident: 0.0 222-S Laboratory

S95T000645 (DUP) N2
 Rate: 10.0 °C/min
 13.254 mg

Step Analysis
 Height -8.07 mg
 -60.88 %
 Resid. 5.19 mg
 39.12 %
 Dpeak 75.0 °C

S95T000666 N2
10.311 mg

Rate: 10.0 °C/min

File: 00086.001 TG METTLER 28-Apr-95

Ident: 0.0 222-S Laboratory

Step Analysis
Height-10.33 mg
-100.18 %
ResidC. -0.02 mg
-0.18 %

S95T000666 (DUP) N2
 10.325 mg
 Rate: 10.0 °C/min
 File: 00087.001 TG METTLER 28-Apr-95
 Ident: 0.0 222-S Laboratory

Step Analysis
 Height-10.33 mg
 -100.09 %
 ResidC. -0.01 mg
 -0.09 %

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worklistrpt Version 2.0 02/21/95
04/28/95 15:25

Page: 1

LABCORE Data Entry Template for Worklist# 1039

Analyst: SHIF Instrument: TGA01 Book # 48237

Method: LA-514-114 Rev/Mod B-C

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	LIQUID	<u>59.19</u>	<u>58.29</u>	N/A	%
								<u>59.88</u>	<u>GINF</u>	<u>4/28/95</u>
95000028	C-105	2 SAMPLE	S95T000669	0	TGA-03	LIQUID	N/A	<u>72.20</u>		%
							<u>GINF 4/28/95</u>	<u>59.88</u>	<u>59.40</u>	<u>GINF 4/28/95</u>
95000028	C-105	3 DUP	S95T000669	0	TGA-03	LIQUID	<u>72.20</u>	<u>72.27</u>	N/A	%
95000028	C-105	4 SAMPLE	S95T000677	0	TGA-03	LIQUID	N/A	<u>72.20</u>		%
95000028	C-105	5 DUP	S95T000677	0	TGA-03	LIQUID	<u>72.20</u>	<u>72.27</u>	N/A	%

Final page for worklist # 1039

Jan Luge for
Analyst Signature Date
Lucie Fulton 4/28/95
See attached sheet for
original signature

[Signature] 4/29/95
Analyst Signature Date

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1039

Analyst: Silva Instrument: TGA01 Book # 4228-A

Method: LA-560-112 Rev/Mod LA-514-114/130

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	LIQUID			N/A	%
95000028	C-105	2 SAMPLE	S95T000669	0	TGA-01	LIQUID	N/A			%
95000028	C-105	3 DUP	S95T000669	0	TGA-01	LIQUID			N/A	%
95000028	C-105	4 SAMPLE	S95T000677	0	TGA-01	LIQUID	N/A			%
95000028	C-105	5 DUP	S95T000677	0	TGA-01	LIQUID			N/A	%

Final page for worklist # 1039

Susie M. Dulfon 4-28-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

100

78 *gcs*

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES ~~79~~ TO

83.9

Lessie M. Jefferson 5/1/95 BIV

Fri Apr 28 09:07:25 1995

101

179 *5/18/95*

Fri Apr 28 13:09:13 1995

182
8/8/95

Fri Apr 28 14:22:02 1995

Fri Apr 28 10:26:57 1995

180
4/28/95

Fri Apr 28 11:30:26 1995

WHC-SD-WM-DP-108 REV.0
LABCORE Data Entry Template for Worklist# 1043

Analyst: SMF Instrument: TGA01 Book # 42N8-A

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	59.19	58.46	N/A	%
95000028	C-105	2 SAMPLE	S95T000694	0	TGA-01	SOLID	N/A	13.91 54.04	42T/45 BDV	%
95000028	C-105	3 DUP	S95T000694	0	TGA-01	SOLID	13.91 21.04	14.05 17.48	42T/45 BDV	%
95000028	C-105	4 SAMPLE	S95T000700	0	TGA-01	SOLID	N/A	31.04 14.05	42T/45 BDV	%
95000028	C-105	5 DUP	S95T000700	0	TGA-01	SOLID	31.04 14.05	42T/45 BDV	19.48 N/A	%

Final page for worklist # 1043

Susie M. Fulton 4-27-95
Analyst Signature Date

Steve Peter 4-27-95
Analyst Signature Date

Verified by Blandina Valenzuela 5-1-95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 107 TO 111.

TGA STD 42N8-A

17.302 mg

Rate: 10.0 °C/min

File: 00059.001

TG

METTLER

26-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height-10.20 mg

-58.96 %

ResiC. 7.10 mg

41.04 %

Dpeak 83.0 °C

Luisa McIntosh 4-27-95

BEST AVAILABLE COPY

S95T000694 N2

8.445 mg

Rate: 10.0 °C/min

File: 00062.001

TG

METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -1.09 mg

-12.91 %

ResidC. 7.35 mg

87.09 %

Dpeak 47.0 °C

Step Analysis

Height -1.96 mg

-23.16 %

ResidC. 5.27 mg

62.39 %

Dpeak 285.0 °C

2. mg

100

100.

200.

300.

400.

°C

WHC-SD-WM-DE-108, REV. 0

BEST AVAILABLE COPY

S95T000694 (DUP) N2

File: 00064.001

TG

METTLER

27-Apr-95

13.435 mg

Rate: 10.0 °C/min

Ident: 0.0

222-S Laboratory

Step Analysis

Height -1.89 mg

-14.05 %

ResiC: 11.55 mg

85.95 %

Step Analysis

Height -3.08 mg

-22.91 %

ResiC: 8.36 mg

62.21 %

Dpeak 291.0 °C

WHC-SD-WM-DP-108, REV. 0

BEST AVAILABLE COPY

S95T000700 N2
28.064 mg

File: 00066.001 TG METTLER 27-Apr-95
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

Step Analysis
Height -5.90 mg
-21.04 %
Resid. 22.16 mg
78.96 %

Step Analysis
Height -5.27 mg
-18.79 %
Resid. 16.66 mg
59.38 %
Dpeak 287.0 °C

BEST AVAILABLE COPY

S95T000700 (DUP) N2

32.451 mg

Rate: 10.0 °C/min

File: 00068.001

TG

METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -6.32 mg

-19.48 %

ResiC. 26.13 mg

80.52 %

Step Analysis

Height -6.41 mg

-19.77 %

ResiC. 19.45 mg

59.93 %

Dpeak 291.0 °C

5. mg

100.

200.

300.

400.

°C

WHC-SD-MM-DP-108, REV. 0

LABCORE Data Entry Template for Worklist# 1055

Analyst: SMT Instrument: TGA01 Book # 4218-A

Method: LA-514-114 Rev/Mod 12-0 ^{50K15} _{BDV}

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.19</u>	<u>57.71</u>	N/A	%
95000040	C-105	2 SAMPLE	S95T000655	0	TGA-03	SOLID	N/A	<u>30.71</u>		%
95000040	C-105	3 DUP	S95T000655	0	TGA-03	SOLID	<u>30.71</u>	<u>12.5</u>	N/A	%
95000040	C-105	4 TRIPL	S95T000655	0	TGA-03	SOLID	<u>30.71</u>	<u>29.89</u>	N/A	%
		5 STD			TGA-03	SOLID	<u>59.19</u>	<u>58.48</u>	N/A	%
95000040	C-105	6 SAMPLE	S95T000661	0	TGA-03	SOLID	N/A	<u>4.54</u>		%
95000040	C-105	7 DUP	S95T000661	0	TGA-03	SOLID	<u>4.54</u>	<u>4.33</u>	N/A	%

Final page for worklist # 1055

Lucy M. Fulton 4-27-95
Analyst Signature Date
[Signature] 4-28-95

Verified by
Blandina Valenzuela 5/1/95
Analyst Signature Date

Data Entry Comments:

S95T000655 has a second weight loss region of 10.27% at 300°C, dup has 12.2% at 300°C, tripl has 11.3% at 300°C. S95T000661 has a second weight loss of 16.43% at 300°C, duplicate has 19.85% at 300°C. JMF 4/28/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 85 TO 119
[Signature]

Luis M. Dulles 4-27-95

Thu Apr 27 19:03:57 1995

APR 27 1995
 Thu Apr 27 17:13 1995
 114 186

[illegible]

Thu Apr 27 20:03:34 1995

26.127 °C
26.050 °C
38.942 wt. %
41.304 wt. %
48.481 wt. %

Thu Apr 27 20:36:11 1995

183
5/8/95

Thu Apr 27 22: 10: 46 1995

188 *[Handwritten signature]*

Thu Apr 27 23:14:27 1995

LABCORE Data Entry Template for Worklist# 1056

Analyst: SJIF Instrument: TGA01 Book # 48, WSA

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.75</u>	<u>N/A</u>	%
95000028	C-105	2 SAMPLE	S95T000673	0	TGA-01	SOLID	<u>N/A</u>	<u>33.28</u>		%
95000028	C-105	3 DUP	S95T000673	0	TGA-01	SOLID	<u>33.28</u>	<u>36.59</u>	<u>N/A</u>	%
95000028	C-105	4 TRIPL	S95T000673	0	TGA-01	SOLID	<u>33.28</u>	<u>34.65</u>	<u>N/A</u>	%
95000028	C-105	5 SAMPLE	S95T000681	0	TGA-01	SOLID	<u>N/A</u>	<u>37.88</u>		%
95000028	C-105	6 DUP	S95T000681	0	TGA-01	SOLID	<u>37.88</u>	<u>36.54</u>	<u>N/A</u>	%

Final page for worklist # 1056

David Lyle for Susie Fulton 4/28/95
Analyst Signature Date

[Signature] 4/28/95
Analyst Signature Date

see attached sheet for
original signature

Verified by Blandina Valenzuela 5/1/95

Data Entry Comments:

S95T000673 has second weight loss region of 16.12% at 255°C, dup has 13.2% at 255°C, tripl has 10.35% at 290°C. S95T000681 has a second step of 7.12% at 185°C, dup has 8.23% at 290°C. SJIF

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1056

Analyst: SWT Instrument: TGA01 Book # 42 NS-A

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-105 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID			N/A	%
95000028	C-105	2 SAMPLE	S95T000673	0	TGA-01	SOLID	N/A			%
95000028	C-105	3 DUP	S95T000673	0	TGA-01	SOLID			N/A	%
95000028	C-105	4 SAMPLE	S95T000681	0	TGA-01	SOLID	N/A			%
95000028	C-105	5 DUP	S95T000681	0	TGA-01	SOLID			N/A	%

Final page for worklist # 1056

Susie M. Dul-ton 4-27-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

122

15.238 mg

5. mg

TG

27-Apr-95

222-S Laboratory

Height --8.95 mg

-58.75 %

ResiC. 6.29 mg

41.25 %

Dpeak 76.7°C

50.

100.

150.

200

10

Lucie M. 200. Ritter 4-27-95 °C

~~WHC-SD-WM-DP-108, REV. 0~~

S95T000673 N2

17.684 mg

Rate: 10.0 °C/min

File: 00072.001

TG

METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -5.88 mg

-33.28 %

ResiC. 11.80 mg

66.72 %

Dpeak 99.0 °C

Step Analysis

Height -1.89 mg

-10.72 %

ResiC. 9.51 mg

53.78 %

Dpeak 255.0 °C

WHC-SD-WM-DP-108, REV.0

S95T000673 (DUP) N2
 28.464 mg
 File: 00074.001 TG METTLER 27-Apr-95
 Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory

S95T000673 (DUP2) N2

18.549 mg

Rate: 10.0 °C/min

File: 00076.001

TG

METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -6.43 mg

-34.65 %

ResiC. 12.12 mg

65.35 %

Dpeak 105.0 °C

Step Analysis

Height -1.92 mg

-10.35 %

ResiC. 9.76 mg

52.60 %

125

WHC-SD-WM-DP-108, REV.0

S95T000681 N2

20.099 mg

Rate: 10.0 °C/min

File: 00078.001 TG METTLER 27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -7.61 mg

-37.88 %

ResiC. 12.49 mg

62.12 %

Dpeak 69.0 °C

Step Analysis

Height -1.43 mg

-7.12 %

ResiC. 11.05 mg

55.00 %

Dpeak 285.0 °C

S95T000681 (DUP) N2

32.433 mg

Rate: 10.0 °C/min

File: 00080.001

TG

METTLER

27-Apr-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height-11.85 mg

-36.54 %

ResiC. 20.58 mg

63.46 %

Step Analysis

Height -2.67 mg

-8.23 %

ResiC. 17.91 mg

55.23 %