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"45-DAY SAFETY SCREENING RESULTS FOR TANK 241-U-102, PUSH MODE CORES 143 AND 144."

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ANALYTICAL SERVICES

45-DAY SAFETY SCREENING RESULTS FOR TANK 241-U-102, PUSH MODE CORES 143 AND 144

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Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

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NARRATIVE

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222-S ANALYTICAL SERVICES

45-DAY SAFETY SCREENING RESULTS FOR TANK 241-U-102 CORES 143 AND 144

This document is the 45-day report deliverable for tank 241-U-102 push mode core segments collected between April 16, 1996 and May 6, 1996 and received by the 222-S Laboratory between April 17, 1996 and May 8, 1996. The segments were subsampled and analyzed in accordance with the *Tank 241-U-102 Push Mode Core Sampling and Analysis Plan* (TSAP) (Hu, 1996) and the *Safety Screening Data Quality Objective* (DQO) (Dukelow, et al., 1995). The analytical results are included in Table 1.

Attachment 1 is a cross reference to relate the tank farm identification numbers to the 222-S Laboratory LabCore sample numbers. The subsamples generated in the laboratory for analysis are identified in these diagrams with their sources shown. The diagram identifying the hydrostatic head fluid (HHF) blank is also included. Primary safety screening results and the raw data from Differential Scanning Calorimetry (DSC) and thermogravimetric analysis (TGA) analyses are included in this report.

Two of the samples submitted for DSC analysis exceeded notification limits as stated in the Safety Screening DQO (Dukelow, et al., 1995). Cyanide analysis was requested on these samples and a Reactive System Screening Tool analysis was requested for the sample exhibiting the highest exotherm in accordance with the TSAP (Hu, 1996). The results for these analyses will be reported in a revision to this document.

Appearance and Sample Handling

Core 143

Nine push mode core segments were removed from tank 241-U-102 riser 19 between April 16, 1996 and May 6, 1996. It should be noted that Segment 6A was sampled on May 6, 1996 following the collection of Core 144 segments; the sampler was empty. Segments were received by the 222-S Laboratory between April 17, 1996 and May 8, 1996. Three casks were received for segment 5: 5, 5A and 5B. Table 2 summarizes the extrusion information.

Core 144

Seven push mode core segments were removed from tank 241-U-102 riser 9 between April 26, 1996 and April 30, 1996. The segments were received by the 222-S Laboratory between April 30, 1996 and May 8, 1996. The results for DSC, TGA and total alpha analyses on segment 6A will be reported in an addendum to this report. This segment did not provide enough material to perform a bulk density analysis. Table 3 summarizes the extrusion information.

Field Blank
A field blank was provided to the 222-S laboratory with core 144. It underwent the same analysis as the drainable liquid as instructed by the TSAP (Hu, 1996).

Hydrostatic Head Fluid
Lithium bromide solution was provided to the 222-S laboratory with core 144. It underwent Inductively Coupled Plasma Spectroscopy (ICP) and Ion Chromatography (IC) analyses as instructed by the TSAP (Hu, 1996). The results for these analyses will be reported in a revision to this document.

Liner Liquid
109.4 grams of liner liquid was recovered from Core 144 Segment 5. The TSAP does not address analyses for liner liquid. As per agreement with the TWRS representative, no analyses were performed and the sample was archived for possible future analyses.

Table 2. Sample Receipt and Extrusion Information for 241-U-102, Core 143.

Container Id	Segment	Date Sampled	Date Received	Date Extruded	Inches Extruded*	Liquid Recovered (g)	Solids Recovered (g)	Sample Description
96-182	1	4/16/96	4/23/96	4/24/96	6.0	105.7-Drainable	171.5-upper half 49.0-lower half	The solids were dark gray in color and resembled a wet mixture of sludge and saltcake. The liquid was yellow in color and clear.
96-183	2	4/16/96	4/17/96	4/24/96	19.0	0.0	228.9-upper half 172.2-lower half	The solids were medium gray in color and resembled a wet mixture of sludge and saltcake.
96-184	3	4/16/96	4/17/96	4/24/96	19.0	0.0	202.3-upper half 198.6-lower half	The solids were medium gray in color and resembled a wet mixture of sludge and saltcake.
96-185	4	4/16/96	4/23/96	4/24/96	19.0	0.0	210.2-upper half 206.2-lower half	The solids were medium gray in color and resembled a damp sludge.
96-186	5	4/16/96	4/23/96	4/29/96	5.0	109.4-Liner	80.6-whole segment	The solids were medium gray in color and resembled a damp crystalline saltcake. The liner liquid was clear and colorless.
96-186A	5A	4/16/96	4/17/96	4/29/96	8.0	0.0	186.9-upper half	The solids were medium gray in color and resembled a damp crystalline saltcake.
96-186B	5B	4/22/96	4/30/96	5/07/96	12.0	0.0	108.4-upper half 170.4-lower half	The solids were light to medium gray in color and resembled a wet crystalline saltcake.
96-187	6	4/22/96	5/08/96	5/13/96	9.0	0.0	245.9-upper half	The solids were medium gray in color and resembled a moist salt.
96-187A	6A	5/06/96	5/08/96	5/13/96	0.0	0.0	0.0	Sampler empty.

*Approximate Inches Extruded

Table 3. Sample Receipt and Extrusion Information for 241-U-102, Core 144.

Customer Id	Segment	Date Sampled	Date Received	Date Extruded	Inches Extruded*	Liquid Recovered (g)	Solids Recovered (g)	Sample Description
Field Blank	FB	4/29/96	5/08/96	5/13/96	0.0	212.6-drainable	0.0	The drainable liquid was colorless and clear.
96-189	1	4/26/96	4/30/96	5/06/96	3.0	303.3--drainable	63.5	The drainable liquid was grayish brown in color and opaque. The solids were grayish brown in color and resembled a wet crystalline saltcake.
96-190	2	4/26/96	4/30/96	5/06/96	16.0	0.0	169.7-upper half 205.1-lower half	The solids were medium gray in color and resembled a damp crystalline saltcake.
96-191	3	4/29/96	4/30/96	5/06/96	14.0	0.0	167.3-upper half 149.5-lower half	The solids were medium gray in color and resembled a damp crystalline saltcake.
96-192	4	4/29/96	5/08/96	5/13/96	19.0	0.0	234.6-upper half 224.4-lower half	The solids were medium gray in color and resembled a wet salt.
96-193	5	4/29/96	5/08/96	5/13/96	18.0	0.0	182.8-upper half 237.3-lower half	The solids were medium gray in color and resembled a moist salt.
96-194	6	4/30/96	5/08/96	5/13/96	13.0	0.0	134.6-upper half 161.2-lower half	The solids were light gray to medium gray in color and resembled a moist salt.
96-194A	6A	4/30/96	5/03/96	5/14/96	1.0	0.0	31.2-upper half	The solids were medium brown in color and resembled wet salt.

*Approximate Inches

Extruded Results Summary

The data summary table (Table 1) included in this report compiles the safety screening analytical results and applicable action limits associated with each subsample submitted.

Differential Scanning Calorimetry (DSC)

Two of the samples submitted for DSC analysis exceeded notification limits as stated in the Safety Screening DQO (Dukelow, et al., 1995). Cyanide analysis was requested on these samples and a Reactive System Screening Tool analysis was requested for the sample exhibiting the highest exotherm in accordance with the TSAP (Hu, 1996). The results for these analyses will be reported in a revision to this document.

The DSC analyses were performed in duplicate on direct subsamples. The exothermic energy based on dry weight of subsample was calculated for all subsamples. The average of the TGA results for each subsample was used in the dry weight correction for that subsample. The standard recovery for this analysis was within the required limits.

The results for six of the twenty-four subsamples were the sum of two or more exotherms. More information may be obtained by examining the raw data. The field blank result was 0.00 Joules/g.

Relative percent differences (RPD) greater than 20% were reported for twelve of the twenty-four subsamples. The high RPDs can be attributed to the small exotherms and the heterogenous nature of the samples. Selected samples had triplicate or rerun analyses performed because of the high RPDs and differences in the appearance between the thermograms of the sample and duplicate. The results of the triplicate wet weight DSCs are presented in Table 4. The results of the triplicate dry weight corrected DSCs are presented in Table 5. The results of the reruns can be found in the analytical results summary (Table 1).

Review of the data by the TWRS representative resulted in a request for DSC reruns on the following samples: S96T002646 and S96T002778. These results will be reported in a revision to this document.

Table 4. Triplicate Results for Wet Weight DSC Analysis

Customer ID	LabCore ID	Sample Result (Joules/g)	Duplicate Result (Joules/g)	Triplicate Result (Joules/g)	Mean (Joules/g)
96-185	S96T002344	0.0	11.7	16.3	9.3

Table 5. Triplicate Results for Dry Weight DSC Analysis

Customer ID	LabCore ID	Sample Result (Joules/g)	Duplicate Result (Joules/g)	Triplicate Result (Joules/g)	Mean (Joules/g)
96-185	S96T002344	0	15.45	16.3	10.6

Thermogravimetric Analysis (TGA)

The TGA analyses were performed in duplicate on direct subsamples. Typically results were determined by summing the weight loss steps which occurred below 200°C; weight loss steps above this were not used to determine the result with the following exceptions: the sample and duplicate results for S96T002776 and S96T002777 were the result of weight loss steps up to 420°C. The chemist noted that the data could not be retrieved from the data disk to reintegrate the results. The chemist also noted that had the sample results been integrated to 200°C, the results would have differed from the existing results by less than 2%. More information may be obtained by examining the raw data.

The field blank resulted in a mean of 99.45% moisture. Relative percent differences (RPD) greater than 20% were reported for five of the twenty-four subsamples. The high RPDs suggest a wide variance in sample matrix. Selected samples had reruns performed because of the high RPDs and differences in the appearance between the thermograms of the sample and duplicate. The results of the reruns can be found in the analytical results summary (Table 1). The standard recovery for this analysis was within the required limits.

Review of the data by the TWRS representative resulted in a request for TGA reruns on the following samples: S96T002344, S96T002646, S96T002647 and S96T002636. These results will be reported in a revision to this document.

Density

Bulk density was performed on all of the twenty-four solid subsamples as required by the TSAP (Hu, 1996). The results of the bulk density test ranged from 1.55 g/mL to 1.88 g/mL. The higher bulk density of 1.88 g/mL was used to calculate the solid total alpha activity action limit for the tank.

Total alpha results for liquids do not require correction for density. The specific gravity results for the liquid samples will be reported in a revision to this document.

Total Alpha (AT)

The total alpha (AT) analyses were performed in duplicate on direct subsamples for the liquids. Solid subsamples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the aliquot class (A#) column in Table 1.

All liquid AT results were below the total alpha activity action limit of 61.5 μCi/mL. All solid AT results were below the total alpha activity limit of 32.7 μCi/g (based on a bulk density of 1.88 g/mL). The field blank result was less than 4.62e-6 μCi/mL. A high spike recovery was reported for sample S96T002549 and a low spike recovery was reported for sample S96T002662. This is attributable to low alpha activity and signifies no compromise in data quality. The standard recovery and RPDs for this analysis were within the required limits.

Procedures

Table 6 lists the analytical procedures used for performing the sample analyses. Abbreviations for analyses are defined in the table notes.

Table 6. Analytical Procedures

Analysis	Sample Portion	Preparation Procedure +	Analysis Procedure
DSC	Solid/Liquid	N/A	LA-514-113, Rev. C-1 LA-514-114, Rev. C-1
TGA	Solid/Liquid	N/A	LA-514-114, Rev. C-1 LA-560-112, Rev. B-1
AT	Solid Liquid	LA-549-141, Rev. F-0 N/A	LA-508-101, Rev. D-2
Bulk Density	Solid	N/A	LO-160-103, Rev. B-0

Notes:
+ = preparation procedure is for fusion digest on solid
Abbreviations:
N/A = not applicable (these are direct samples)
DSC = differential scanning calorimetry
TGA = thermogravimetric analysis
AT = total alpha activity

References

Hu, T. A., 1996, *Tank 241-U-102 Push Mode Core Sampling and Analysis Plan*, WHC-SD-WM-TSAP-082, Rev. 0-A, Westinghouse Hanford Company, Richland, WA 99352.

Dukelow, G. T., J. W. Hunt, H. Babad, and J. E. Meacham, 1995, *Tank Safety Screening Data Quality Objective*, WHC-SD-WM-SP-004, Rev. 2, Westinghouse Hanford Company, Richland, WA 99352

SAMPLE DATA SUMMARY

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45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002325			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.610	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002326			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.18e+02	112.7	115.4	4.68	n/a	n/a	n/a
S96T002326			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	97.36	n/a	69.80	66.60	68.20	4.69	n/a	n/a	n/a
S96T002326			% Water by TGA using Mettler	%	None	None	98.89	n/a	41.50	40.30	40.90	2.93	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002328			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.810	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002329			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.10e+02	106.8	108.2	2.59	n/a	n/a	n/a
S96T002329			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	97.36	n/a	53.10	51.70	52.40	2.67	n/a	n/a	n/a
S96T002329			% Water by TGA on Perkin Elmer	%	None	None	99.31	n/a	51.79	51.35	51.57	0.85	n/a	n/a	n/a
S96T002443	F		Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	101.6	<8.69e-03	5.56e-02	5.91e-02	5.73e-02	6.10	90.25	1.10e-02	2.70E+01

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002323			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	111.4	n/a	1.22e+02	124.1	123.0	1.79	n/a	n/a	n/a
S96T002323			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	2.47e+02	251.3	249.1	1.81	n/a	n/a	n/a
S96T002323			% Water by TGA using Mettler	%	None	None	98.07	n/a	50.93	50.28	50.61	1.28	n/a	n/a	n/a
S96T002323			Alpha in Liquid Samples	uCi/mL	-1.0e+03	61.50	111.7	<1.24e-02	2.72e-02	2.60e-02	2.66e-02	4.51	100.6	1.80e-02	5.74E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002331			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.690	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002332			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	111.8	n/a	2.36e+02	288.9	262.6	20.0	n/a	n/a	n/a
S96T002332			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	4.81e+02	587.9	534.4	20.0	n/a	n/a	n/a
S96T002332			% Water by TGA using Mettler	%	None	None	97.94	n/a	50.30	51.41	50.85	2.18	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002334			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.640	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002335			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	111.8	n/a	3.07e+02	313.8	310.6	2.09	n/a	n/a	n/a
S96T002335			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	6.11e+02	624.1	617.7	2.09	n/a	n/a	n/a
S96T002335			% Water by TGA using Mettler	%	None	None	97.94	n/a	50.52	48.92	49.72	3.22	n/a	n/a	n/a
S96T002445	F		Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	115.6	<9.50e-03	1.33e-01	1.48e-01	1.41e-01	10.7	99.72	2.30e-02	2.39E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002337			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.650	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002338			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	114.6	n/a	61.00	64.80	62.90	6.04	n/a	n/a	n/a
S96T002338			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.08e+02	114.2	110.8	6.04	n/a	n/a	n/a
S96T002338			% Water by TGA using Mettler	%	None	None	98.92	n/a	42.94	43.60	43.27	1.53	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002340			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.640	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002341			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	114.6	n/a	65.70	86.50	76.10	27.3	n/a	n/a	n/a
S96T002341			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	97.17	127.9	112.5	27.3	n/a	n/a	n/a
S96T002341			% Water by TGA using Mettler	%	None	None	98.92	n/a	31.61	33.17	32.39	4.82	n/a	n/a	n/a
S96T002447	F		Alpha of Digested Solid	uCi/g	-1.0e+03	32.70	115.6	<9.50e-03	1.47e-01	1.54e-01	1.50e-01	4.65	n/a	2.30e-02	2.28E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002343			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.620	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002344			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	0.00e+00	15.45	7.725	200	n/a	n/a	n/a
S96T002344			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	98.84	n/a	0.00e+00	11.70	5.850	200	n/a	n/a	n/a
S96T002344			% Water by TGA on Perkin Elmer	%	None	None	98.46	n/a	22.44	14.78	18.61	41.2	n/a	n/a	n/a
S96T002344 1			% Water by TGA on Perkin Elmer	%	None	None	100.4	n/a	28.10	31.81	29.95	12.4	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002346			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.610	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002347			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	0.00e+00	104.0	52.00	200	n/a	n/a	n/a
S96T002347			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	98.84	n/a	0.00e+00	57.20	28.60	200	n/a	n/a	n/a
S96T002347			% Water by TGA on Perkin Elmer	%	None	None	98.46	n/a	46.82	43.20	45.01	8.04	n/a	n/a	n/a
S96T002449	F		Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	109.4	<5.25e-03	2.13e-01	2.36e-01	2.24e-01	10.2	n/a	7.00e-03	1.20E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 5

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002498			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.880	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002500			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	101.9	n/a	16.60	15.50	16.05	6.85	n/a	n/a	n/a
S96T002500			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	19.79	18.47	19.13	6.90	n/a	n/a	n/a
S96T002500			% Water by TGA using Mettler	%	None	None	98.89	n/a	15.72	16.48	16.10	4.72	n/a	n/a	n/a
S96T002518	F		Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	109.4	<5.25e-03	8.31e-02	6.54e-02	7.42e-02	23.8	93.31	7.00e-03	1.90E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 5A

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002499			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.710	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002501			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	101.9	n/a	19.00	15.50	17.25	20.3	n/a	n/a	n/a
S96T002501			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	22.93	18.71	20.82	20.3	n/a	n/a	n/a
S96T002501			% Water by TGA using Mettler	%	None	None	98.89	n/a	17.19	17.11	17.15	0.41	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 5B

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002663			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.650	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002665			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	111.1	n/a	1.94e+02	98.10	145.9	65.6	n/a	n/a	n/a
S96T002665			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	3.05e+02	154.4	229.7	65.6	n/a	n/a	n/a
S96T002665	1		DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	2.58e+02	222.7	240.6	14.9	n/a	n/a	n/a
S96T002665	1		DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	94.94	n/a	1.64e+02	141.5	152.9	14.9	n/a	n/a	n/a
S96T002665			% Water by TGA using Mettler	%	None	None	98.89	n/a	40.24	32.66	36.45	20.8	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002664			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.550	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002666			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	111.1	n/a	97.40	111.8	104.6	13.8	n/a	n/a	n/a
S96T002666			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.76e+02	201.8	188.8	13.8	n/a	n/a	n/a
S96T002666			% Water by TGA using Mettler	%	None	None	98.89	n/a	46.26	42.96	44.61	7.40	n/a	n/a	n/a
S96T002672	F		Alpha of Digested Solid	uCi/g	-1.0e+03	13.70	113.3	<2.74e-03	1.06e-01	1.21e-01	1.13e-01	13.2	103.3	7.00e-03	1.72E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 143
SEGMENT #: 6

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002754			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.610	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002755			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	112.1	n/a	70.20	62.20	66.20	12.1	n/a	n/a	n/a
S96T002755			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.19e+02	105.8	112.6	12.1	n/a	n/a	n/a
S96T002755			% Water by TGA using Mettler	%	None	None	98.68	n/a	41.68	40.70	41.19	2.38	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: FB

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002762			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	110.4	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T002762			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T002762			% Water by TGA using Mettler	%	None	None	98.38	n/a	99.03	99.87	99.45	0.84	n/a	n/a	n/a
S96T002762			Alpha in Liquid Samples	uCi/mL	-1.0e+03	61.50	103.9	<4.67e-04	<4.62e-06	<5.41E-6	n/a	n/a	91.64	1.10e-05	5.00E+02

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002551			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002632			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	112.5	n/a	48.50	41.90	45.20	14.6	n/a	n/a	n/a
S96T002632			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	80.15	69.24	74.69	14.6	n/a	n/a	n/a
S96T002632			% Water by TGA using Mettler	%	None	None	98.36	n/a	40.77	38.20	39.48	6.51	n/a	n/a	n/a
S96T002648	F		Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	105.5	n/a	6.24e-01	6.44e-01	6.34e-01	3.15	89.69	1.80e-02	1.03E+01

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002549			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	110.4	n/a	1.12e+02	146.6	129.1	27.2	n/a	n/a	n/a
S96T002549			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	2.08e+02	272.8	240.2	27.2	n/a	n/a	n/a
S96T002549			% Water by TGA using Mettler	%	None	None	98.38	n/a	52.29	40.23	46.26	26.1	n/a	n/a	n/a
S96T002549			Alpha in Liquid Samples	uCi/mL	-1.0e+03	61.50	112.5	<7.43e-03	2.93e-02	4.24e-02	3.58e-02	36.5	128.1	1.70e-02	6.51E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002554			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002646			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	53.04	2.180	27.61	184	n/a	n/a	n/a
S96T002646			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	92.97	n/a	39.40	1.620	20.51	184	n/a	n/a	n/a
S96T002646			% Water by TGA on Perkin Elmer	%	None	None	99.32	n/a	38.93	12.51	25.72	103	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002552			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.810	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002633			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	112.5	n/a	69.20	68.10	68.65	1.60	n/a	n/a	n/a
S96T002633			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.04e+02	102.8	103.6	1.54	n/a	n/a	n/a
S96T002633			% Water by TGA using Mettler	%	None	None	98.36	n/a	33.61	33.85	33.73	0.71	n/a	n/a	n/a
S96T002649		F	Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	111.7	n/a	1.63e-01	1.58e-01	1.61e-01	3.12	87.19	6.00e-03	1.29E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002555			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.710	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002647			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	112.1	n/a	18.30	29.60	23.95	47.2	n/a	n/a	n/a
S96T002647			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	20.13	32.55	26.34	47.2	n/a	n/a	n/a
S96T002647			% Water by TGA using Mettler	%	None	None	98.36	n/a	7.680	10.46	9.070	30.7	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002553			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.700	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002636			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	24.07	29.36	26.71	19.8	n/a	n/a	n/a
S96T002636			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	480.0	92.97	n/a	18.20	22.20	20.20	19.8	n/a	n/a	n/a
S96T002636			% Water by TGA on Perkin Elmer	%	None	None	99.32	n/a	11.72	37.05	24.38	104	n/a	n/a	n/a
S96T002662	F		Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	102.3	n/a	1.21e-01	1.29e-01	1.25e-01	6.40	77.44	5.00e-03	1.06E+01

=> Limit violated
=> Selected Limit

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A-0002-3

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002775			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	112.1	n/a	35.10	36.00	35.55	2.53	n/a	n/a	n/a
S96T002775			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	45.17	46.32	45.75	2.51	n/a	n/a	n/a
S96T002775			% Water by TGA using Mettler	%	None	None	98.36	n/a	24.47	20.10	22.29	19.6	n/a	n/a	n/a
S96T002781			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.700	n/a	n/a	n/a	n/a	5.00e-01	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002776			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	114.9	n/a	29.80	41.70	35.75	33.3	n/a	n/a	n/a
S96T002776			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	42.57	59.57	51.07	33.3	n/a	n/a	n/a
S96T002776			% Water by TGA using Mettler	%	None	None	99.09	n/a	30.10	29.90	30.00	0.67	n/a	n/a	n/a
S96T002782			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.610	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002796		F	Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	114.8	n/a	3.45e-01	3.47e-01	3.46e-01	0.58	99.44	1.30e-02	1.19E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: 5

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002777			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	114.9	n/a	87.60	99.00	93.30	12.2	n/a	n/a	n/a
S96T002777			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.34e+02	151.8	143.1	12.2	n/a	n/a	n/a
S96T002777			% Water by TGA using Mettler	%	None	None	99.09	n/a	35.90	33.70	34.80	6.32	n/a	n/a	n/a
S96T002783			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.630	n/a	n/a	n/a	n/a	5.00e-01	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002778			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	113.2	n/a	1.39e+02	59.50	99.25	80.1	n/a	n/a	n/a
S96T002778			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	2.26e+02	96.81	161.5	80.1	n/a	n/a	n/a
S96T002778			% Water by TGA using Mettler	%	None	None	99.39	n/a	40.04	37.04	38.54	7.78	n/a	n/a	n/a
S96T002784			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.770	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002797		F	Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	114.8	n/a	1.66e-01	1.67e-01	1.67e-01	0.60	n/a	1.30e-02	1.72E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Safety Screening Report Table 1
U-102

CORE NUMBER: 144
SEGMENT #: 6

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002779			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	113.2	n/a	63.20	76.60	69.90	19.2	n/a	n/a	n/a
S96T002779			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	1.34e+02	162.2	148.0	19.2	n/a	n/a	n/a
S96T002779			% Water by TGA using Mettler	%	None	None	99.39	n/a	50.10	55.46	52.78	10.2	n/a	n/a	n/a
S96T002785			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.610	n/a	n/a	n/a	n/a	5.00e-01	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T002780			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	110.7	n/a	14.40	19.80	17.10	31.6	n/a	n/a	n/a
S96T002780			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	480.0	n/a	n/a	25.94	35.67	30.80	31.6	n/a	n/a	n/a
S96T002780			% Water by TGA using Mettler	%	None	None	99.49	n/a	44.90	44.08	44.49	1.84	n/a	n/a	n/a
S96T002786			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T002798		F	Alpha of Digested Solid	uCi/g	-1.0e+03	33.70	109.4	n/a	8.49e-02	8.18e-02	8.34e-02	3.72	92.76	1.00e-02	2.07E+01

=> Limit violated
=> Selected Limit

ATTACHMENT 1

U-102 PUSH MODE CORE SAMPLE BREAKDOWNS

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U-102
Core:143
Seg: 1
S96T002186

Attachment 1
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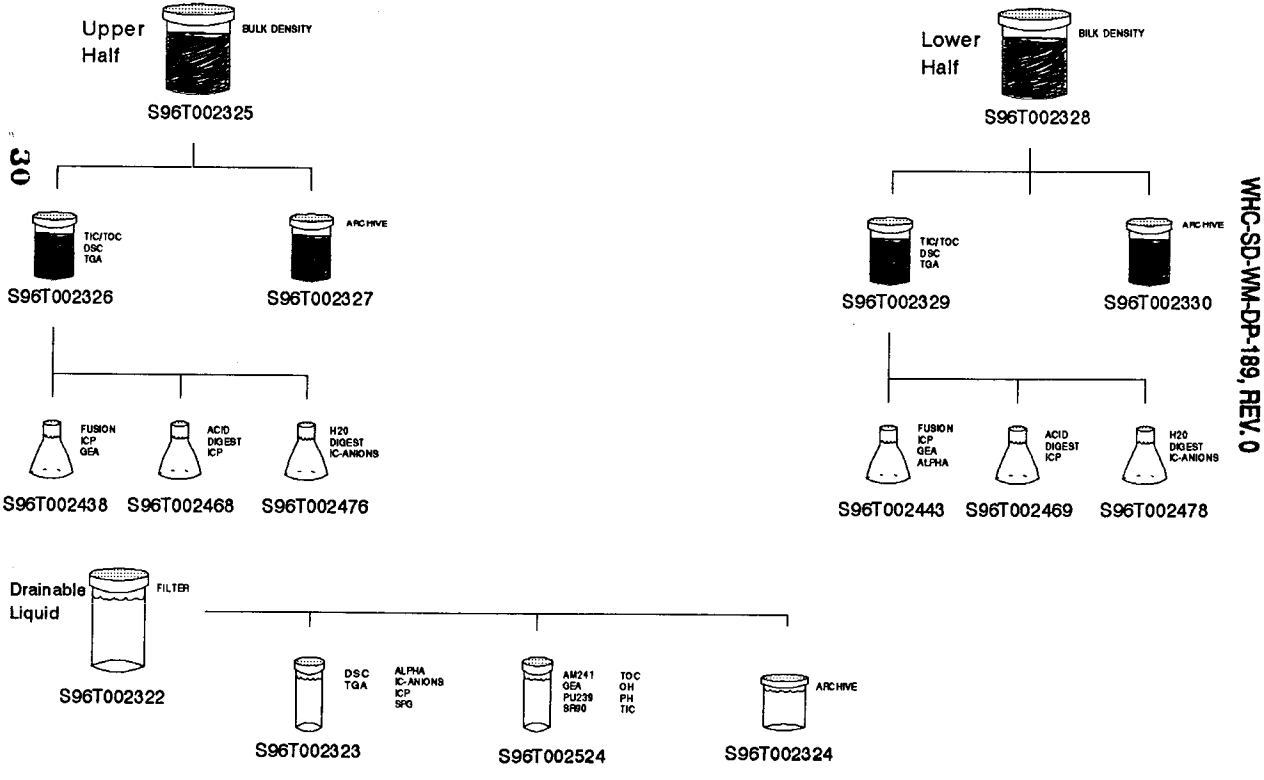
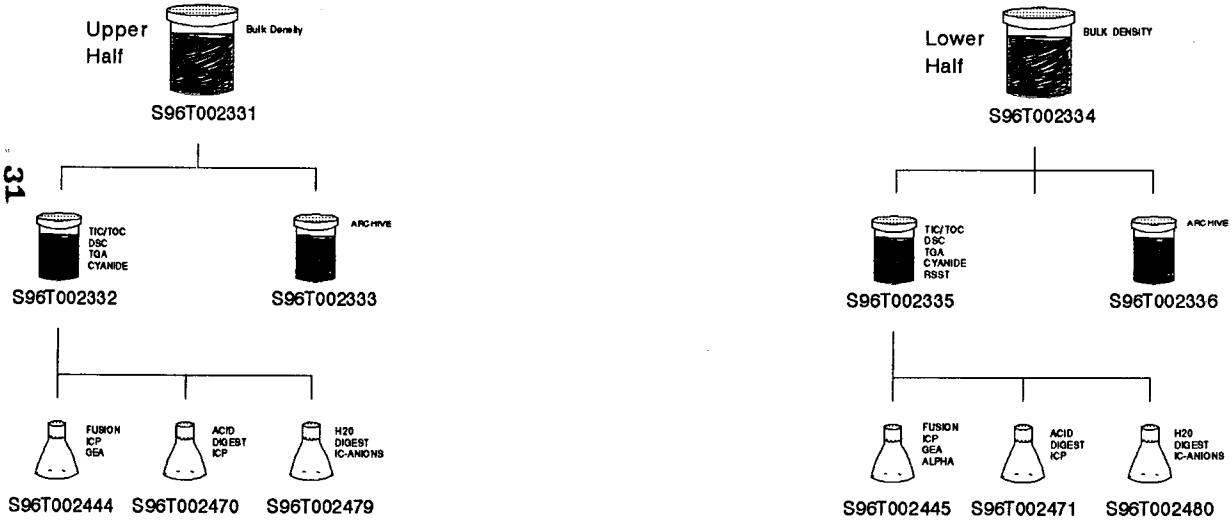
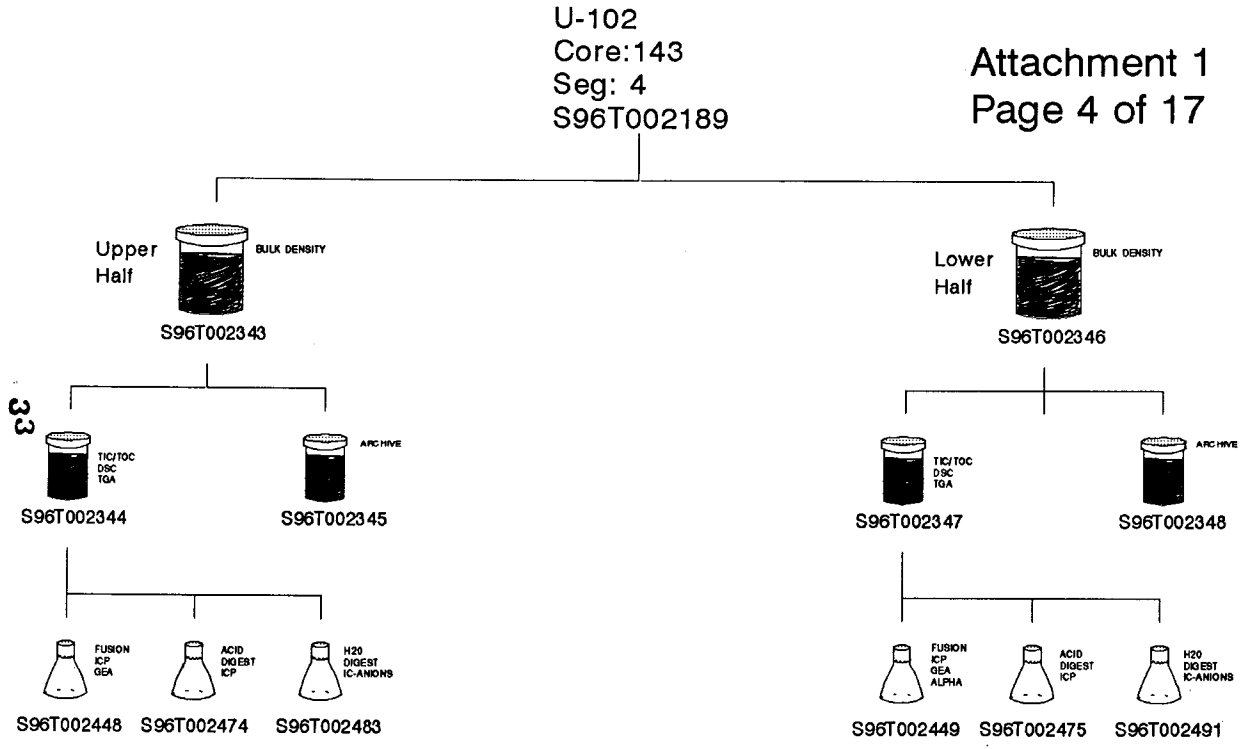


U-102
Core:143
Seg: 2
S96T002187



U-102
Core:143
Seg: 3
S96T002188


U-102
Core:143
Seg: 4
S96T002189
Upper Half
BULK DENSITY
S96T002343
Lower Half
BULK DENSITY
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TIC/TOC DSC TGA
ARCHIVE
S96T002344
S96T002345
TIC/TOC DSC TGA
ARCHIVE
S96T002347
S96T002348
FUSION ICP GEA
ACID DIGEST ICP
H20 DIGEST IC-ANIONS
S96T002448
S96T002474
S96T002483
FUSION ICP GEA ALPHA
ACID DIGEST ICP
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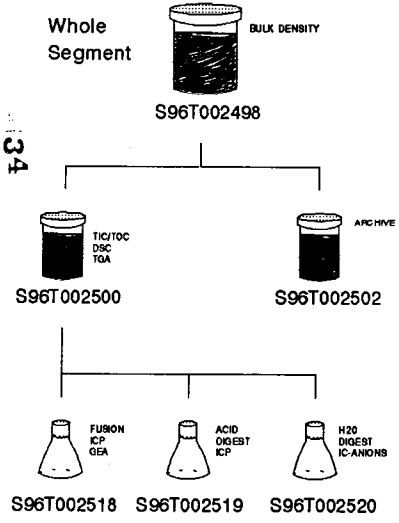
S96T002449
S96T002475
S96T002491

U-102
Core:143
Seg: 5
S96T002190



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Core:143
Seg: 5A
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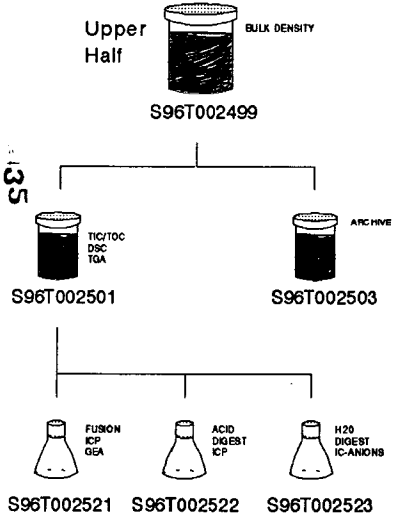

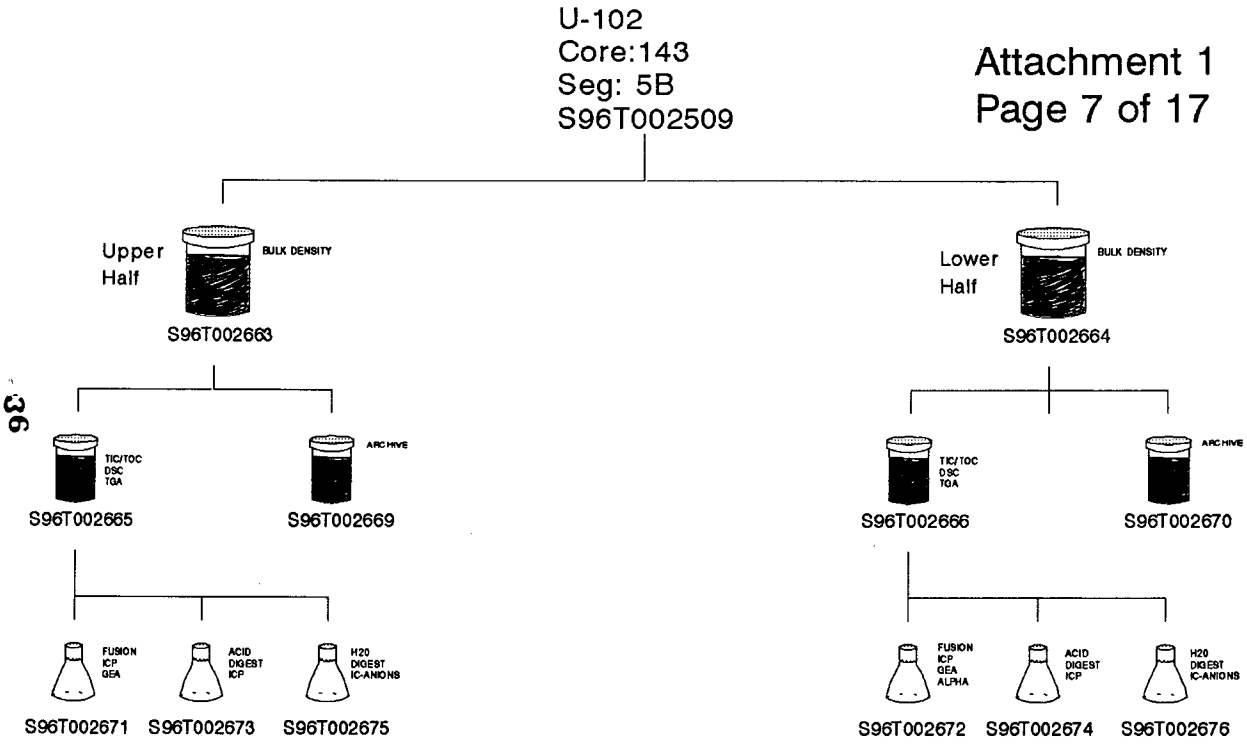
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Lower Half
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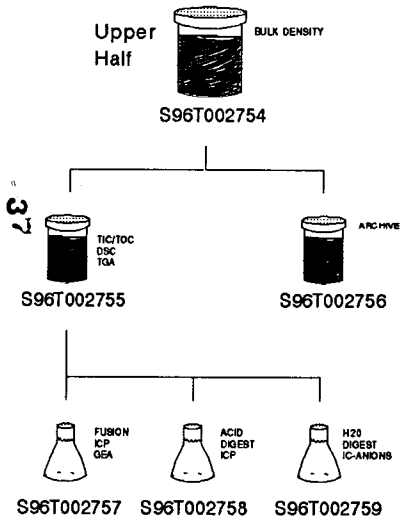
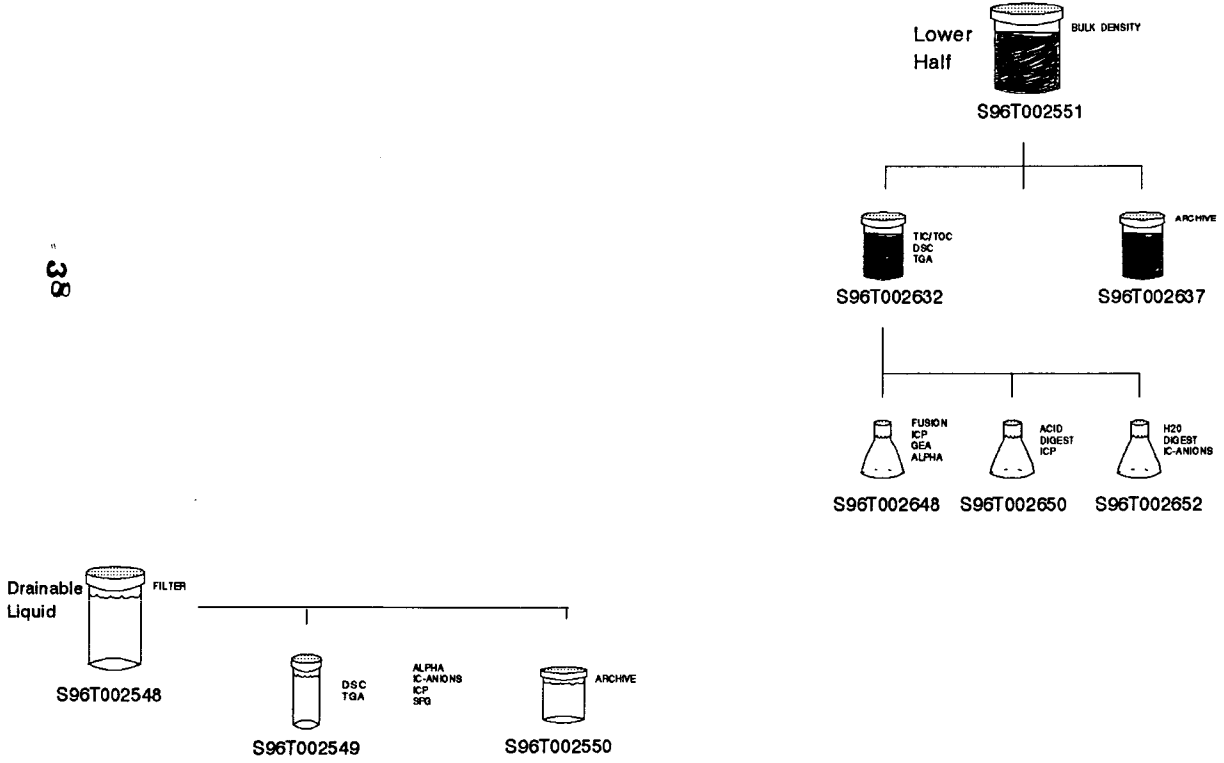
S96T002664
TIC/TOC DSC TGA
ARCHIVE
S96T002665
S96T002669
TIC/TOC DSC TGA
ARCHIVE
S96T002666
S96T002670
FUSION ICP GEA
ACID DIGEST ICP
H20 DIGEST IC-ANIONS
S96T002671
S96T002673
S96T002675
FUSION ICP GEA ALPHA
ACID DIGEST ICP
H20 DIGEST IC-ANIONS
S96T002672
S96T002674
S96T002676

U-102
Core:143
Seg: 6
S96T002626

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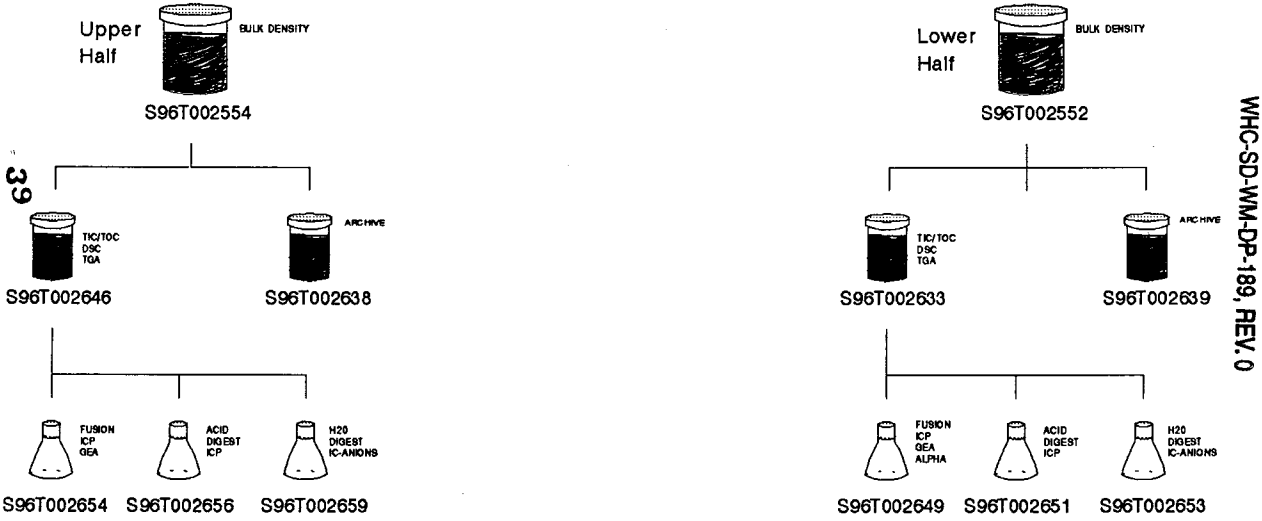
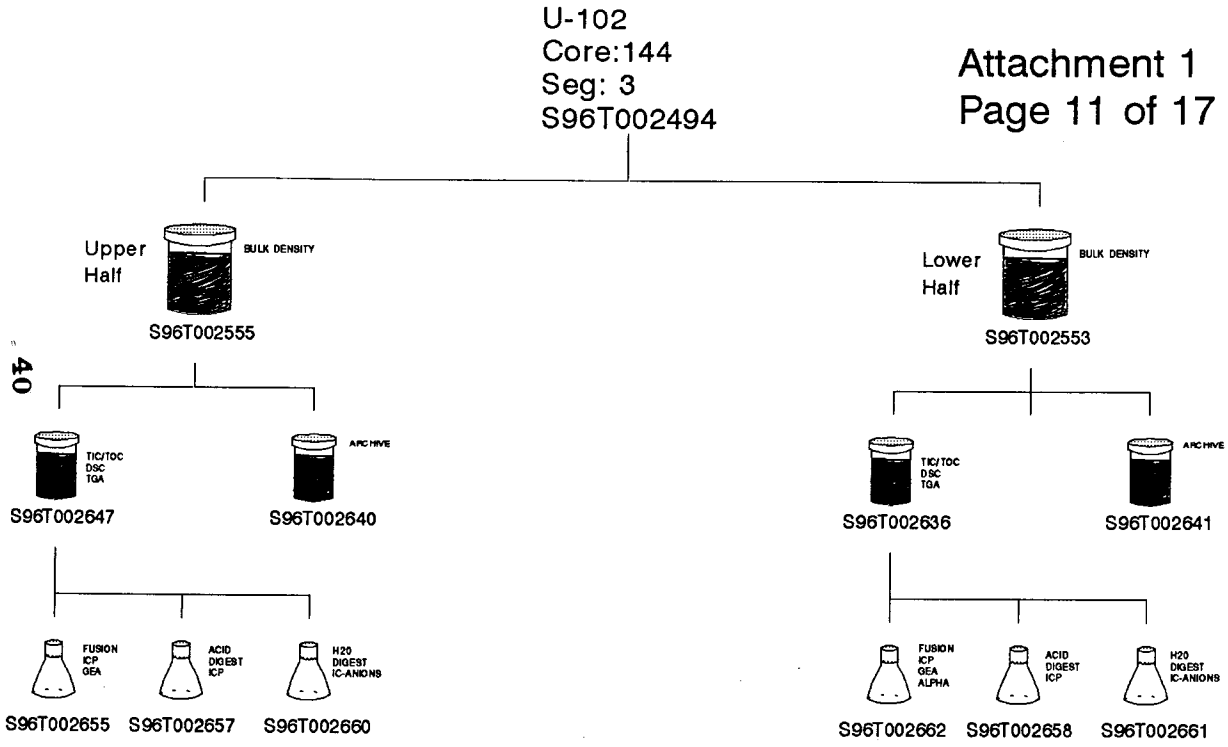
DSC
TGA
S96T002632
ARCHIVE
S96T002637
FUSION
ICP
GEA
ALPHA
S96T002648
ACID
DIGEST
ICP
S96T002650
H20
DIGEST
IC-ANIONS
S96T002652
Drainable
Liquid
FILTER
S96T002548
DSC
TGA
ALPHA
IC-ANIONS
ICP
SPG
S96T002549
ARCHIVE
S96T002550

U-102
Core:144
Seg: 2
S96T002493

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Core:144
Seg: 3
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Upper Half
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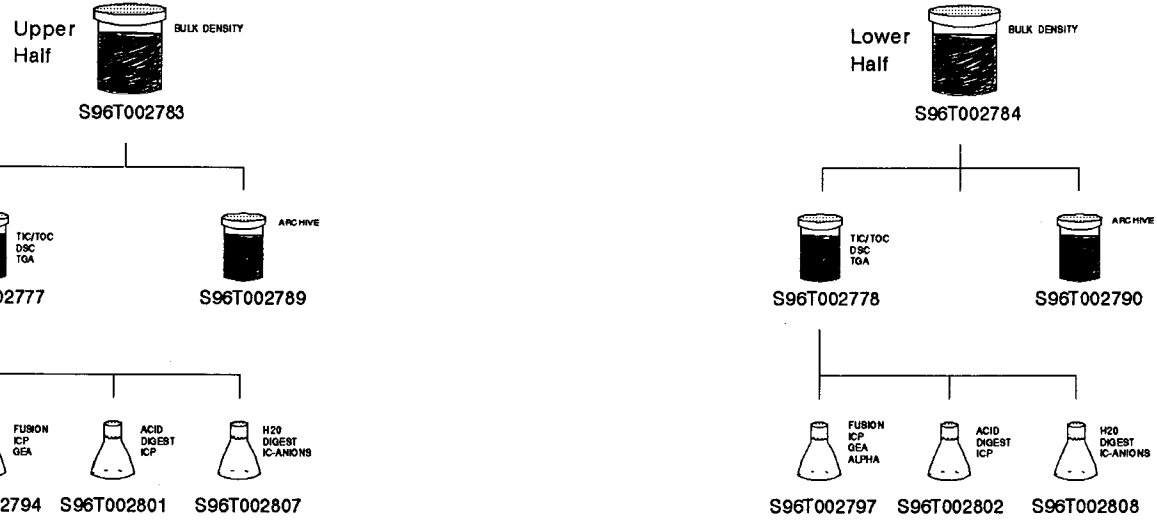
S96T002555
Lower Half
BULK DENSITY
S96T002553
TIC/TOC DSC TGA
ARCHIVE
S96T002647
S96T002640
TIC/TOC DSC TGA
ARCHIVE
S96T002636
S96T002641
FUSION ICP GEA
ACID DIGEST ICP
H20 DIGEST IC-ANIONS
S96T002655
S96T002657
S96T002660
FUSION ICP GEA ALPHA
ACID DIGEST ICP
H20 DIGEST IC-ANIONS
S96T002662
S96T002658
S96T002661

U-102
Core:144
Seg: 4
S96T002628

U-102
Core:144
Seg: 5
S96T002629



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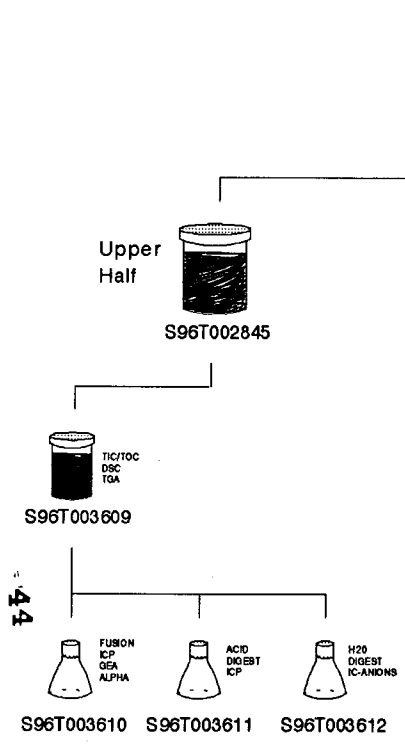
Core:144
Seg: 6
S96T002630


U-102
Core:144
Seg: 6A
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Upper
Half
S96T002845
TIC/TOC
DSC
TGA
S96T003609
FUSION
ICP
GEA
ALPHA
ACID
DIGEST
ICP
H20
DIGEST
IC-ANIONS
S96T003610
S96T003611
S96T003612

U-102
Core:144
Seg: FB
S96T002631

U-102
Core:144
Seg: LiBr
S96T002511

CHAIN OF CUSTODY FORMS

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 96-182 (3) Supervisor Dawn DeLaPierre

(4) Tank U-102 (5) Riser 19 (6) Segment 1 (7) Core 143 (8) Cask Serial Number C-1040 1055

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	4.5 mR/hr	1 mr/hr
Side Dose Rate	1 mR/hr	22 mr/hr
Bottom Dose Rate	15 mR/hr	8 mr/hr
Smearable Contamination	<720 dpm/100 cm² (Alpha)	<720 DPM (Alpha)
	<1000 dpm/100 cm² (Beta-Gamma)	<1000 DPM (Beta-Gamma)
	RCT* (HPT) (Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00058/0
B. Cask Seal Number	11426
C. Sampler Serial Number	95-3105
D. Date and Time Sampler Unseated	4-16-96 0137
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.2 R/hr
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

46

(12) Field Comments

(34) Laboratory Comments

COPY

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	2225	RJ Pearsall for D. LaPierre	4-23-96 0920	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
RJ Pearsall			0515 4-23-96	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
		N LAPIER	0950 4-25-96	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

WHC-SD-WM-DP-189, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-01-TF (2) Sample Number 96-183 (3) Supervisor Daren DeFriem

(4) Tank U-102 (5) Riser 19 (6) Segment 2 (7) Core 143 (8) Cask Serial Number C 1040

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	20.5 mr/hr	< 0.5 mR/HR
Side Dose Rate	24 mr/hr	22 mR/HR
Bottom Dose Rate	10 mr/hr	< 10 mR/HR
Smearable Contamination	< 20 (Alpha)	< 20 (Alpha)
	< 1K (Beta-Gamma)	< 11K (Beta-Gamma)
	RCT* (HPT) (Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00058/0
B. Cask Seal Number	10396
C. Sampler Serial Number	95-1355
D. Date and Time Sampler Unseated	4-16-96 0456
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.2R/hr
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

50

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin U-102	(14) Destination 222S	(15) Sender Name (Sign and PRINT) R.J. Pedrzik for D. DeFriem	(16) Date/Time 4-17-96/1035	(17) Sender Comments	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT) J L Hensley	(21) Date/Time 4-17-96/1052	(22) Receiver Comments	
(23) Relinquished By (Sign and PRINT) J L Hensley JL HENSLEY		(24) Received By (Sign and PRINT) N LAPIERS	(25) Date/Time 4-17-96/105	(26) Receiver Comments	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☐ Yes ☐ No	☑ Yes ☐ No

WHC-SD-WM-DP-189, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 96-184 (3) Supervisor Darrell Peterson

(4) Tank U-102 (5) Riser 19 (6) Segment 3 (7) Core 143 (8) Cask Serial Number C 1038

Radiation Survey Data:	(9) FIELD	(13) LABORATORY
Lower Top Dose Rate	<0.5 mr/hr	<0.5 mR/HR
Side Dose Rate	25 mr/hr	25 mR/HR
Bottom Dose Rate	8 mr/hr	<10 mR/HR
Smearable Contamination	<70 (Alpha)	<20 (Alpha)
	<1K (Beta-Gamma)	<1K (Beta-Gamma)
	RCT* (HPT) D Crockett (Signature)	RCT* (HPT) J. Valdez (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00058/0
B. Cask Seal Number	11419
C. Sampler Serial Number	95-1075
D. Date and Time Sampler Unseated	4-16-96 05:50
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.5 R/HR
H. Expected Sample Length	19'

(11) INFORMATION (Include statement of laboratory tests to be performed.)

51

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin: U-102	(14) Destination: 222S	(15) Sender Name (Sign and PRINT): R J Peaznik for D L Peterson	(16) Date/Time: 4-17-96 / 0935	(17) Sender Comments
(19) Relinquished By (Sign and PRINT): R J Peaznik		(20) Received By (Sign and PRINT): J L HENSLEY	(21) Date/Time: 4-17-96 / 0958	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT): J L HENSLEY		(24) Received By (Sign and PRINT): N MAPIERS	(25) Date/Time: 4-17-96 / 1105	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 56-85 Goldenrod - Tank Farm Operations, S4-43

WHC-6000-309 (02/94)

WHC-SD-WM-DP-189, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-98-TF (2) Sample Number C6-185 (3) Supervisor M.C. Jones

(4) Tank U-102 (5) Riser 19 (6) Segment 4 (7) Core 143 (8) Cask Serial Number G1042

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5 mR/hr	< 0.5 mR/hr
Side Dose Rate	15 mR/hr	15 m-/hr
Bottom Dose Rate	15 mR/hr	10 mR/hr
Smearable Contamination (Alpha)	< 200 dpm/100cm²	< 20 DPM (Alpha)
(Beta-Gamma)	1 K dpm/100cm²	< 1000 DPM (Beta-Gamma)
RCT* (HPT) (Signature)	RCT* (HPT) (Signature)	

(10) Shipment Description

A. Work Package Number	WS-96-0058
B. Cask Seal Number	10498
C. Sampler Serial Number	94-070S
D. Date and Time Sampler Unseated	4-16-96 0950
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.5 R/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

52

(12) Field Comments

NO X-RAY WAS DONE.

(34) Laboratory Comments

COPY

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	R J Pearzik for M. Jones	4-23-96 0920	
(19) Relinquished By (Sign and PRINT) R J Pearzik		(20) Received By (Sign and PRINT)	(21) Date/Time 0915 4-24-96	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT) N. LAPIERS	(25) Date/Time 4-25-96 0950	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☒ Yes ☐ No	☒ Yes ☐ No	Shipment No. ☐ Cask Seal No. ☐ Sample No.

WHC-SD-WM-DP-189, REV.0

04/25/96 13:41 509 373 1432 004

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W 96-TP (2) Sample Number 96-186 (3) Supervisor M. C. JONES

(4) Tank U-102 (5) Riser 19 (6) Segment 5 (7) Core 143 (8) Cask Serial Number 2004

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	2.5 mR/hr	.5 mr/hr
Side Dose Rate	1 mR/hr	5 mr/hr
Bottom Dose Rate	5 mR/hr	4 mr/hr
Smearable Contamination (Alpha)	<20 dpm/100cm²	<20 DPM (Alpha)
(Beta-Gamma)	<1K dpm/100cm²	<1000 DPM (Beta-Gamma)
RCT* (HPT) (Signature)	RC Chin	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-0058
B. Cask Seal Number	10497
C. Sampler Serial Number	195-0685
D. Date and Time Sampler Unseated	4-16-96 1245
E. Expected Liquid Content	5%
F. Expected Solid Content	95%
G. Dose Rate Through Drill String	300 MR/HR
H. Expected Sample Length	5"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

53

(12) Field Comments

SAMPLE WAS only pushed 5" DUE TO high DOWN Force.

(34) Laboratory Comments

COPY

(13) Point of Origin: U-102	(14) Destination: 222-S	(15) Sender Name (Sign and PRINT): K L Wagoner for M. Jones	(16) Date/Time: 4-23-96 0976	(17) Sender Comments
(19) Relinquished By (Sign and PRINT): K L Wagoner		(20) Received By (Sign and PRINT):	(21) Date/Time: 09:15 4-23-96	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT):		(24) Received By (Sign and PRINT): N LAPIERS	(25) Date/Time: 1:55 4-23-96	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT):		(28) Received By (Sign and PRINT):	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-189, REV. 0

CHAIN-OF-CUSTODY RECORD FOR COFE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 96-186A (3) Supervisor Hartley

(4) Tank U-102 (5) Riser 19 (6) Segment 5A (7) Core 143 (8) Cask Serial Number C1048

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5 mr/hr	<0.5 mR/HR
Side Dose Rate	19 mr/hr	16 mR/HR
Bottom Dose Rate	10 mr/hr	<10 mR/HR
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1K (Beta-Gamma)	<11C (Beta-Gamma)
RCT (HPT)	D Gordon (Signature)	RCT (HPT) J. Valdez (Signature)

(10) Shipment Description	
A. Work Package Number	WS-96-000580
B. Cask Seal Number	11436
C. Sampler Serial Number	95-3095
D. Date and Time Sampler Unseated	4-16-96, 2150
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1 R/HR
H. Expected Sample Length	8 3/4"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

54

(12) Field Comments

Moisture ON bottom of Sampler

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	2225	R.J. Peaznik for Hartley	4-17-96/1035	
(19) Relinquished By (Sign and PRINT) R.J. PEAZNIK		(20) Received By (Sign and PRINT) J.L HENSLEY	(21) Date/Time 4-17-96/1038	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) J.L HENSLEY		(24) Received By (Sign and PRINT) N LAPIERS	(25) Date/Time 4-17-96/1105	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Cask Supervisor

WHC-SD-WM-DP-189, REV. 0

002 509 373 1432 13:40 04/25/96

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 96-186B (3) Supervisor Hartley

(4) Tank U-102 (5) Riser 19 (6) Segment 5B (7) Core 143 (8) Cask Serial Number C1016

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5	<.5 mr/hr
Side Dose Rate	35	35 mr/hr
Bottom Dose Rate	20	20 mr/hr
Smearable Contamination (Alpha)	<20 dpm/100 cm²	<20 dpm/100 cm²
(Beta-Gamma)	<1000 dpm/100 cm²	<1K dpm/100 cm²
RCT* (HPT) (Signature)	[signature]	[signature]

(10) Shipment Description	WS-96-00058/0
A. Work Package Number	11435
B. Cask Seal Number	95-3015
C. Sampler Serial Number	4-22-96, 0127
D. Date and Time Sampler Unseated	20%
E. Expected Liquid Content	80%
F. Expected Solid Content	1.7 R/HR
G. Dose Rate Through Drill String	6 1/4"
H. Expected Sample Length	

(11) INFORMATION (Include statement of laboratory tests to be performed.)

55

(12) Field Comments

1 gallon lithium bromide added; sampler wet + brown material on outside of sampler body

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT) for D. Hartley	(16) Date/Time	(17) Sender Comments
U-102	222S	[signature] James Sickels	1105 4-30-96	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
[signature] James Sickels		[signature] John Harding	11:15 4-30-96	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
[signature] John Harding		[signature] N LAMERS	1145 4-30-96	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release? ☐ Yes ☐ No

(31) Seal Intact Upon Receipt? ☒ Yes ☐ No

(32) Seal Data Consistent with this Record? Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No

BC-6000-309 (02/94)

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

002

509 373 1432

10:57

05/08/96

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200W-08-TF (2) Sample Number 96-187 (3) Supervisor Dawn Farm

(4) Tank 4-102 (5) Riser 19 (6) Segment 6 (7) Core 143 (8) Cask Serial Number C-1023

Radiation Survey Data:	(32) FIELD	(33) LABORATORY
Over Top Dose Rate	1 mR/hr	1 mR/hr
Side Dose Rate	25 mR/hr	25 mR/hr
Bottom Dose Rate	10 mR/hr	10 mR/hr
Smearable Contamination (Alpha)	<20 dpm/100cm²	<20 dpm
(Beta-Gamma)	<1K dpm/100cm²	<1K dpm
RCT/HPT (Signature)		RCT/HPT (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00058-0
B. Cask Seal Number	1561
C. Sampler Serial Number	94-340 S
D. Date and Time Sampler Unseated	4-22-96 10:25
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.2 R/HR
H. Expected Sample Length	9"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

56

(12) Field Comments: Small amount of waste on Bottom of sampler.

(34) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
4-102	222S	James Sickels James Sickels FOR D. Lapperell	5-8-96 1940	

(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels James Sickels	B WATKINS	5-8-96 2340	

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
B WATKINS	EE Dubois	5-9-96 1030	

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-5000-309 (02/94)

WHC-SD-WM-DP-189, REV. 0

003

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10:57

05/08/96

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 20010-08-TF (2) Sample Number 96-187 A (3) Supervisor Dawn Price

(4) Tank 4-102 (5) Riser 19 (6) Segment 6A (7) Core 143 (8) Cask Serial Number C-1040

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	2.5 mr/hr	<0.5 mrad/hr
Side Dose Rate	2.5 mr/hr	<0.5 mrad/hr
Bottom Dose Rate	2 mr/hr	2 mrad/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm (Alpha)
	<1K dpm/100cm² (Beta-Gamma)	<1K dpm (Beta-Gamma)
	RCT* (HPT) (Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-000 58/0
B. Cask Seal Number	1548
C. Sampler Serial Number	95-308
D. Date and Time Sampler Unsealed	5/6/96 0645
E. Expected Liquid Content	0
F. Expected Solid Content	0
G. Dose Rate Through Drill String	200 mR/hR
H. Expected Sample Length	0

(11) INFORMATION (Include statement of laboratory tests to be performed.)

SJ

(12) Field Comments	(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(19) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
4 102	222	For D. Lapiceau James Sickels	5-8-96 0940	
(18) Relinquished By (Sign and PRINT)	**(20) Received By (Sign and PRINT)**		**(21) Date/Time**	**(22) Receiver Comments**
James Sickels James Sickels	B WATKINS		5-8-96 0940	
(23) Relinquished By (Sign and PRINT)	**(24) Received By (Sign and PRINT)**		**(25) Date/Time**	**(26) Receiver Comments**
B WATKINS	E Pickles		5-8-96 1700	
(27) Relinquished By (Sign and PRINT)	**(28) Received By (Sign and PRINT)**		**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☐ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 WC-9000-308 (02/94)

WHC-SD-WM-DP-189, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 2000-08-TF (2) Sample Number 96-189 (3) Supervisor M.C JONES

(4) Tank U-102 (5) Riser 9 (6) Segment 1 (7) Core 144 (8) Cask Serial Number C 2009

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	1.5	1.5 mr/hr
Side Dose Rate	30	30 mr/hr
Bottom Dose Rate	7	10 mr/hr
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) C. Cooper (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00059
B. Cask Seal Number	10435
C. Sampler Serial Number	94-3425
D. Date and Time Sampler Unseated	4-26-96/18:15
E. Expected Liquid Content	70%
F. Expected Solid Content	30%
G. Dose Rate Through Drill String	1.5 R/HR
H. Expected Sample Length	17"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

S
00

(12) Field Comments

NO X-RAY

(34) Laboratory Comments

COPY

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	FOR M JONES James Sickels	4/29/96 0454	
(19) Relinquished By (Sign and PRINT) James Sickels James Sickels		(20) Received By (Sign and PRINT) M L Dunnington	(21) Date/Time 4/29/96 0454	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) M L Dunnington		(24) Received By (Sign and PRINT) Armen L. Weibel	(25) Date/Time 4/30/96 0545	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Project

WHC-SD-WM-DP-189, REV. 0

002 509 373 1432 05/01/96 07:44

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509 373 1432

07:45

05/01/96

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-98-TF (2) Sample Number 96-190 (3) Supervisor M.C. Jones

(4) Tank U-102 (5) Riser 9 (6) Segment 2 (7) Core 144 (8) Cask Serial Number C-1053

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	2.5	2.5
Side Dose Rate	18	18 w/in
Bottom Dose Rate	12	10 w/in
Smearable Contamination (Alpha)	<20	<20
(Beta-Gamma)	<1000	<1000
RCT* (HPT) (Signature)	Field	RCT* (HPT) (Signature) Cloggan

(10) Shipment Description

A. Work Package Number	WS-96-00059
B. Cask Seal Number	10436
C. Sampler Serial Number	94-3285
D. Date and Time Sampler Unseated	4-26-96 / 1920
E. Expected Liquid Content	50%
F. Expected Solid Content	50%
G. Dose Rate Through Drill String	1 R/HR
H. Expected Sample Length	19

(11) INFORMATION (Include statement of laboratory tests to be performed.)

59

(12) Field Comments: NO X-RAY

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	James Sickels JAMES SICKELS for M. JONES	4/26/96 0933	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels JAMES SICKELS		M.C. Dunnington	4/26/96 0959	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
M.C. Dunnington		Owen L. Hitchcock	4/26/96 0959	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 56-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-305 (02/94)

WHC-SD-WM-DP-189, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 96-191 (3) Supervisor M.C. Jones

(4) Tank U-102 (5) Riser 9 (6) Segment 3 (7) Core 144 (8) Cask Serial Number S-1045

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5	<.5 mr/hr
Side Dose Rate	13	12 mr/hr
Bottom Dose Rate	17	15 mr/hr
Smearable Contamination (Alpha)	<20	<20 (Alpha)
(Beta-Gamma)	<1000	<1000 (Beta-Gamma)
RCT* (HPT) (Signature)		RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00059
B. Cask Seal Number	10499
C. Sampler Serial Number	94-0425
D. Date and Time Sampler Unsealed	4-29-96 0123
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1 R/HR
H. Expected Sample Length	19

(11) INFORMATION (Include statement of laboratory tests to be performed.)

6

(12) Field Comments

NO X-RAY

1 GAL LIBR WAS ADDED TO DRILL STRING

(34) Laboratory Comments

COPY

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	For M. JONES		
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels JAMES SICKELS		JAMES SICKELS	4/29/96 0958	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
M L Dimmick		Percy L. Erickson	4/30/96 0945	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☒ Yes ☐ No	☒ Yes ☐ No	Shipment No. ☒ Yes ☐ No	Cask Seal No. ☒ Yes ☐ No	Sample No. ☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-308 (02/94)

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 96-192 (3) Supervisor M.C. Jones

(4) Tank U-102 (5) Riser 9 (6) Segment 4 (7) Core 144 (8) Cask Serial Number SNSG

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	1 mR/hr	1 mR/hr
Side Dose Rate	30 mR/hr	30 mR/hr
Bottom Dose Rate	15 mR/hr	15 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm (Alpha)
	<1K dpm/100cm² (Beta-Gamma)	<1K dpm (Beta-Gamma)
	RCT* (HPT) (Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00059
B. Cask Seal Number	10500
C. Sampler Serial Number	94-336S
D. Date and Time Sampler Unsealed	4-29-96 0233
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.5 R/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

61

(12) Field Comments

NO X-RAY

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	James Sickels JAMES SICKELS	5-8-96 1000	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels JAMES SICKELS		David J Keane DAVID J KEANE	5-8-96 1000	
(19) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
David J Keane DAVID J KEANE		E Dubois E DUBOIS	5-8-96 1040	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling 56-85 Goldenrod - Task Force

WHC-SD-WM-DP-189, REV.0

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

ipment Number 200W-08-TF (2) Sample Number 96-193 (3) Supervisor Danen J. Pian

nk U-102 (5) Riser 9 (6) Segment 5 (7) Core 144 (8) Cask Serial Number 58

tion Survey Data:	(9) FIELD	(33) LABORATORY
r Top Dose Rate	1 mR/hr	less/hr
e Dose Rate	25 mR/hr	25 mR/hr
tom Dose Rate	20 mR/hr	20 mR/hr
eable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm (Alpha)
	<1K dpm/100cm² (Beta-Gamma)	<1K dpm (Beta-Gamma)
RCT (HPT)	(Signature)	(Signature)

(10) Shipment Description	
A. Work Package Number	WS-96-00059/0
B. Cask Seal Number	1540
C. Sampler Serial Number	95-160S
D. Date and Time Sampler Unseated	4/29/96 2205
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.6 R/HR
H. Expected Sample Length	19"

NF ORMATION (Include statement of laboratory tests to be performed.)

ield Comments
is sample Broke apart between the Quadra-
tch and the sampler body. A retrieval tool
ich is a quadralatch with two spring loaded
ks were used to retrieve the sample. It is
ill attached to the sampler Body.

(34) Laboratory Comments

Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
-102	222S	For D. Lapierre JAMES SICKELS	5-8-96 1000	
Relinquished By (Sign and PRINT) JAMES SICKELS		(20) Received By (Sign and PRINT) DAVID J KEANE	(21) Date/Time 5-8-96 1000	(22) Receiver Comments
Relinquished By (Sign and PRINT) DAVID J KEANE		(24) Received By (Sign and PRINT) E E DUBOIS	(25) Date/Time 5-8-96 1045	(26) Receiver Comments
Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

8) Seal Intact Upon Release? ☑ Yes ☐ No

(31) Seal Intact Upon Receipt? ☑ Yes ☐ No

(32) Seal Data Consistent with this Record? Shipment No. ☑ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

UTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

Shipment Number 200W-08-TF (2) Sample Number 96-194 (3) Supervisor M.C. Jones

Tank U-102 (5) Riser 9 (6) Segment 6 (7) Core 144 (8) Cask Serial Number C1032

ation Survey Date:	(9) FIELD	(33) LABORATORY
ver Top Dose Rate	.5mR/hr	0.5 mrad/hr
de Dose Rate	25mR/hr	25 mrad/hr
ttom Dose Rate	10mR/hr	10 mrad/hr
neerable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm (Alpha)
	<1Kdpm/100cm² (Beta-Gamma)	<1Kdpm (Beta-Gamma)
	RCT* (HPT) (Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00059
B. Cask Seal Number	10459
C. Sampler Serial Number	95-167-S
D. Date and Time Sampler Unseated	4-30-96 0310
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.7R/HR
H. Expected Sample Length	13"

INFORMATION (Include statement of laboratory tests to be performed.)

63

WHC-SD-WM-DP-189, REV. 0

Field Comments

NO X-RAY

SAMPLE WAS ONLY PUSHED 13" DO TO high DOWN force.

(34) Laboratory Comments

Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	FOR M. JONES James Sickels JAMES SICKELS	5-8-96 1000	
Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
James Sickels JAMES SICKELS		David J Keane DAVID J KEANE	5-8-96 1000	
Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
David J Keane DAVID J KEANE		L E Dickson LE DICKSON	5-8-96 1015	
Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(8) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☐ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample

05/08/96 12:36 509 373 1432 004

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 200W-08-TF (2) Sample Number 96-194A (3) Supervisor [signature]

(4) Tank 4-102 (5) Riser 9 [initials] 5-6-96 (6) Segment 6A (7) Core 144 (8) Cask Serial Number SN#21

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5mr/hr	<0.5 mr/hr
Side Dose Rate	8mr/hr	8 mr/hr
Bottom Dose Rate	6mr/hr	5 mr/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 DPM (Alpha)
	<1000dpm/100cm² (Beta-Gamma)	<1000 DPM (Beta-Gamma)
RCT* (HPT)	[signature] (Signature)	[signature] (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00059
B. Cask Seal Number	11433
C. Sampler Serial Number	95-3085
D. Date and Time Sampler Unseated	4-30-96, 1801
E. Expected Liquid Content	0
F. Expected Solid Content	100%
G. Dose Rate Through Drill String	400 mR/hR
H. Expected Sample Length	Pushed 1"

INFORMATION (Include statement of laboratory tests to be performed.)

64

Field Comments

Lithium Bromide Added
Sample is 1" Long

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
4-102	222S	[signature] R. J. Pawenik for D. Lapiers	5-3-96/1445	
Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)		(21) Date/Time	(22) Receiver Comments
[signature] R. J. Pawenik	Christine S. Parker Christine S. Parker		5/3/96 1445	
(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)		(25) Date/Time	(26) Receiver Comments
Christine S. Parker Christine S. Parker	N Lapiers N LAPIERS		1500 5-3-96	
Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)		(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release? ☑ Yes ☐ No

(31) Seal Intact Upon Receipt? ☑ Yes ☐ No

(32) Seal Data Consistent with this Record? Shipment No. ☑ Yes ☐ No Cask Seal No. ☑ Yes ☐ No Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of S...

WHC-SD-WM-DP-189, REV. 0

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 2004-08-TF (2) Sample Number BlANK Field (3) Supervisor M. C. Jones

(4) Tank U-102 (5) Riser 9 (6) Segment BlANK (7) Core 144 (8) Cask Serial Number C1046

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mR/hr	<0.5
Side Dose Rate	<.5 mR/hr	<0.5
Bottom Dose Rate	<.5 mR/hr	<0.5
Smearable Contamination (Alpha)	<20 dpm/100cm²	<20 dpm
(Beta-Gamma)	<1K dpm/100cm²	<1K dpm
RCT (HPT) (Signature)	[signature]	[signature]

(10) Shipment Description

A. Work Package Number	WS-96-00654
B. Cask Seal Number	10432
C. Sampler Serial Number	95-1555
D. Date and Time Sampler Unseated	7-29-960320
E. Expected Liquid Content	100%
F. Expected Solid Content	0%
G. Dose Rate Through Drill String	<.5
H. Expected Sample Length	19"

(11) INFORMATION (include statement of laboratory tests to be performed.)

65

(12) Field Comments

SAMPLER WITH Di H2O

(34) Laboratory Comments

(13) Point of Origin U-102	(14) Destination 222-S	(15) Sender Name (Sign and PRINT) For M Jones [signature] James Sickels	(16) Date/Time 5-8-96	(17) Sender Comments
(19) Relinquished By (Sign and PRINT) [signature] James Sickels		(20) Received By (Sign and PRINT) [signature] B WATKINS	(21) Date/Time 0940 5-8-96	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) [signature] B WATKINS		(24) Received By (Sign and PRINT) [signature] EE Dicbers	(25) Date/Time 5-8-96 1055	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release? ☒ Yes ☐ No

(31) Seal Intact Upon Receipt? ☒ Yes ☐ No

(32) Seal Data Consistent with this Record? Shipment No. ☐ Yes ☐ No; Cask Seal No. ☒ Yes ☐ No; Sample No. ☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-308 (02/94)

05/08/96 10:58 509 373 1432 004

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number N/A (2) Sample Number Liq Blnk (3) Supervisor M.C. Jones

Tank U-102 (5) Riser 9 (6) Segment Blank (7) Core 144 (8) Cask Serial Number N/A

Radiation Survey Date:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<1.5	<1.5
Side Dose Rate	<1.5	<1.5
Bottom Dose Rate	<1.5	<1.5
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number WS-96-00059

B. Cask Seal Number 10480

C. Sampler Serial Number N/A

D. Date and Time Sampler Unseated 4-30-96 0500

E. Expected Liquid Content 100%

F. Expected Solid Content 0%

G. Dose Rate Through Drill String <1.5 MR/HR

H. Expected Sample Length 100 inches

(11) INFORMATION (Include statement of laboratory tests to be performed.)

99

(12) Field Comments

Liq Blank for Tank U-102

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-102	222-S	For M. Jones James Sickels	4/30/96 0455	
Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
James Sickels		M L Dunnaught	4/30/96 0455	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
M L Dunnaught		N L Lapiers	0955 4-30-96	
Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Date Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-42

WHC-SD-WM-DP-189, REV. 0

WHC-8000-309 (03/94)

INORGANIC ANALYSES

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LABCORE Data Entry Template for Worklist# 9257

Analyst: [signature] **Instrument:** DSC0 1 **Book #** 17 NHB

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

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND *	DL	UNIT
		1 STD				DSC-01	LIQUID	28.45	31.7	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002323	0		DSC-01	LIQUID	N/A	121.9		Joules/g
96000536	U-102	3 DUP	S96T002323	0		DSC-01	LIQUID	121.9	124.1	N/A	Joules/g

Final page for worklist # 9257

[signature] 5/30/96
Analyst Signature **Date**

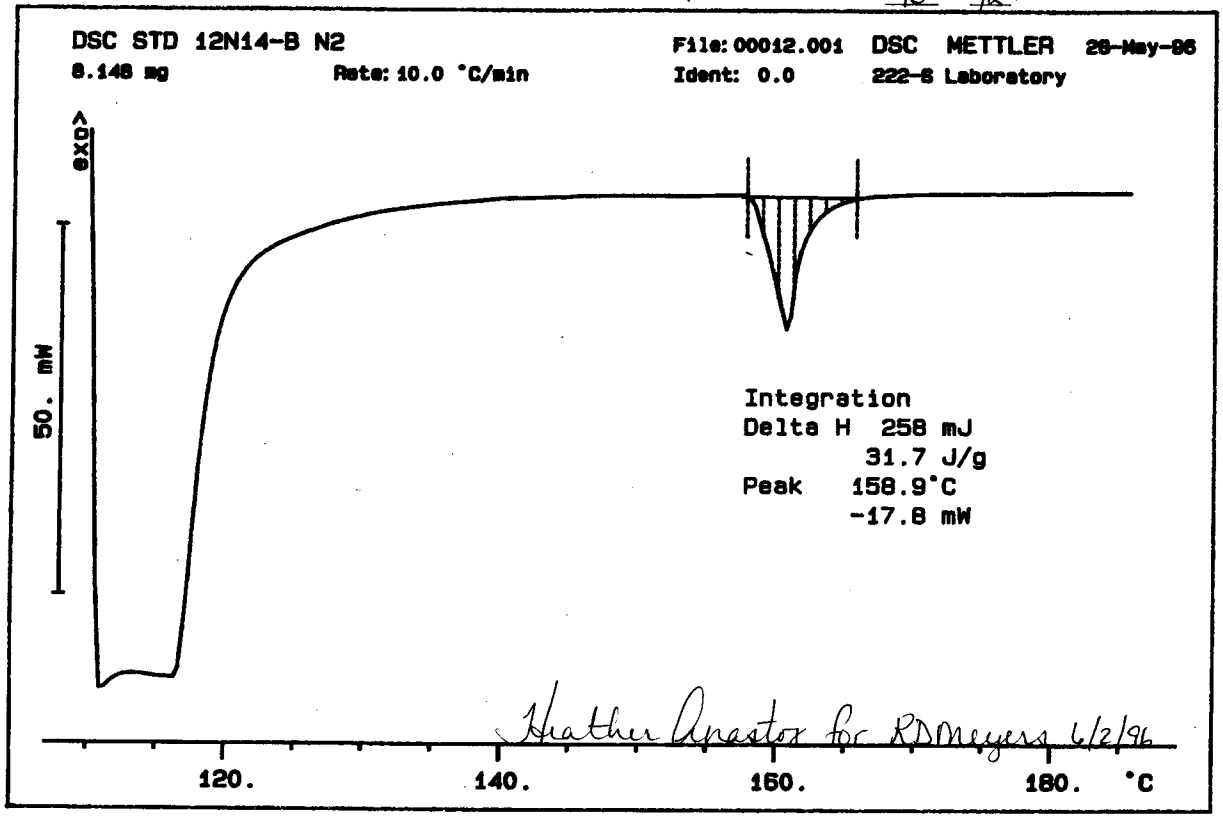
Linda Conlin 6-1-96
Analyst Signature **Date**

Validated by HAnaston 6/2/96

Data Entry Comments: Sample results are the sum of two exotherms.

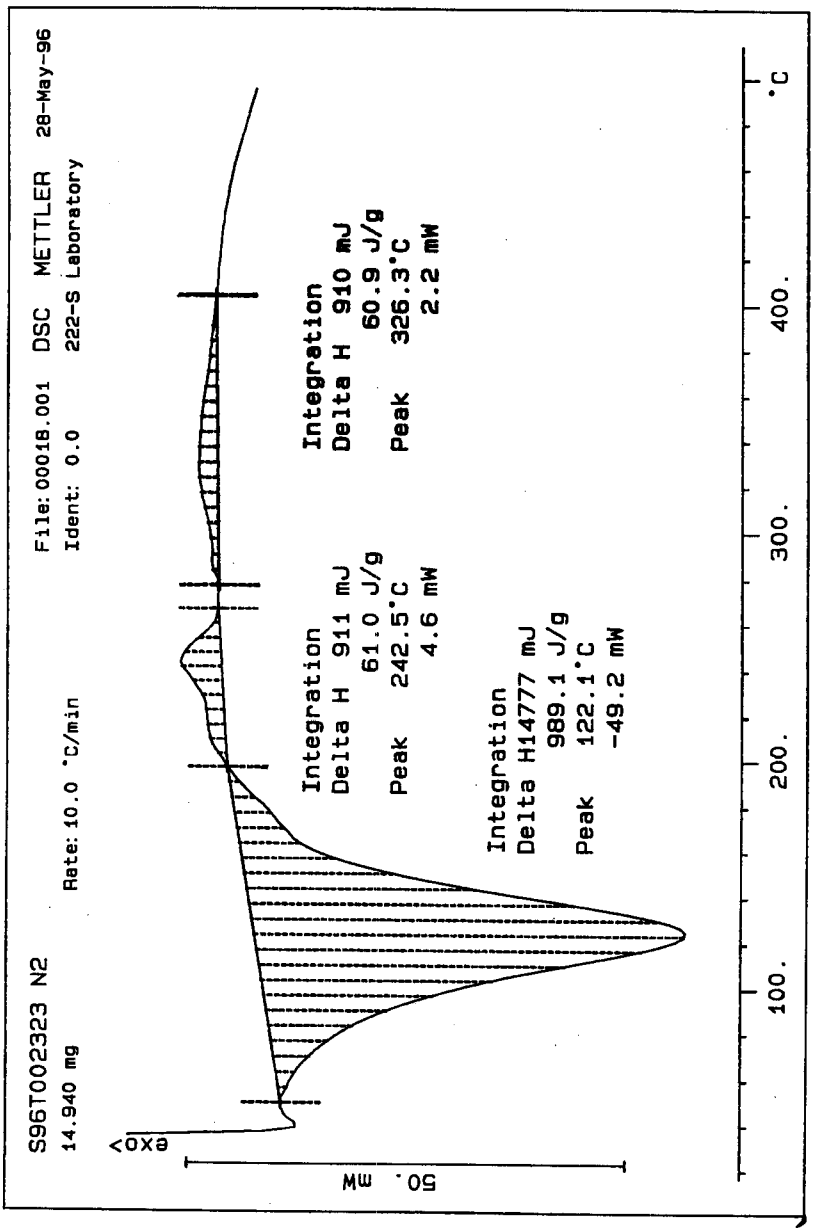
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

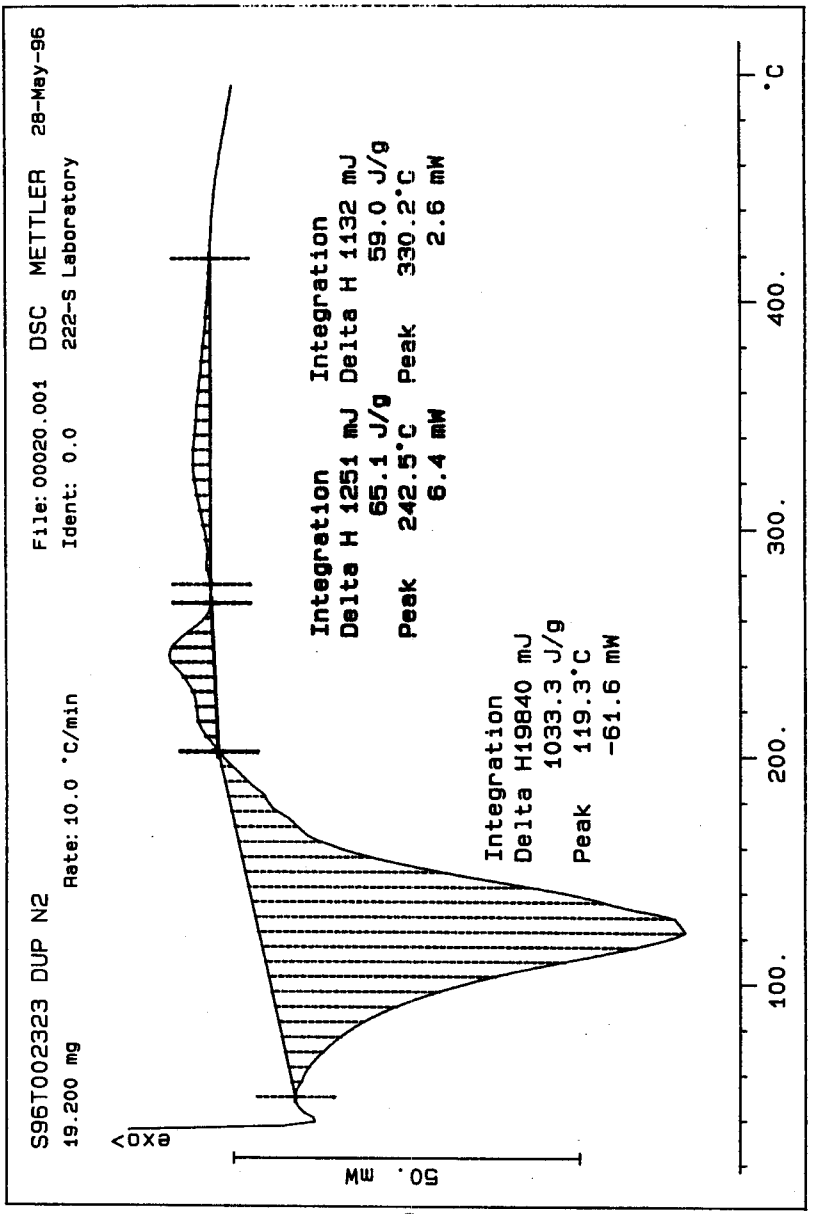
SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 70 TO 72.



Heather Anastos for RDMeyers 6/2/96

70


S96T002323 N2
14.940 mg
Rate: 10.0 °C/min
File: 00018.001 DSC METTLER 28-May-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 911 mJ
61.0 J/g
Peak 242.5°C
4.6 mW
Integration
Delta H 910 mJ
60.9 J/g
Peak 326.3°C
2.2 mW
Integration
Delta H14777 mJ
989.1 J/g
Peak 122.1°C
-49.2 mW
exo>
50. mW
100.
200.
300.
400.
°C


S96T002323 DUP N2
19.200 mg
Rate: 10.0 °C/min
File: 00020.001 DSC METTLER 28-May-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 1251 mJ
65.1 J/g
Peak 242.5°C
6.4 mW
Integration
Delta H 1132 mJ
59.0 J/g
Peak 330.2°C
2.6 mW
Integration
Delta H19840 mJ
1033.3 J/g
Peak 119.3°C
-61.6 mW
50. mW
exo>
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9258

Analyst: RDM **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-03	SOLID	28.45	27.70 *	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002326	0		DSC-03	SOLID	N/A	69.8		Joules/g
96000536	U-102	3 DUP	S96T002326	0		DSC-03	SOLID	69.8	66.6	N/A	Joules/g
96000536	U-102	4 SAMPLE	S96T002329	0		DSC-03	SOLID	N/A	53.1		Joules/g
96000536	U-102	5 DUP	S96T002329	0		DSC-03	SOLID	53.1	57.7	N/A	Joules/g

Final page for worklist # 9258

See attached for signatures
Analyst Signature Date 6/13/96

RDR
Validated by HAnderton 6-19-96

RJohn 6-17-96
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.

worklistrpt Version 2.1 05/15/95
05/28/96 12:35

LABCORE Data Entry Template for Worklist# 9258

Analyst: [illegible] **Instrument:** DSC0 **Book #** 12NHB

Method: LA-514-113 Rev/Mod C

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID			N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002326	0		DSC-01	SOLID	N/A			Joules/g
96000536	U-102	3 DUP	S96T002326	0		DSC-01	SOLID			N/A	Joules/g
96000536	U-102	4 SAMPLE	S96T002329	0		DSC-01	SOLID	N/A			Joules/g
96000536	U-102	5 DUP	S96T002329	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 9258

[signature] 6/13/96
Analyst Signature **Date**

Analyst Signature **Date**

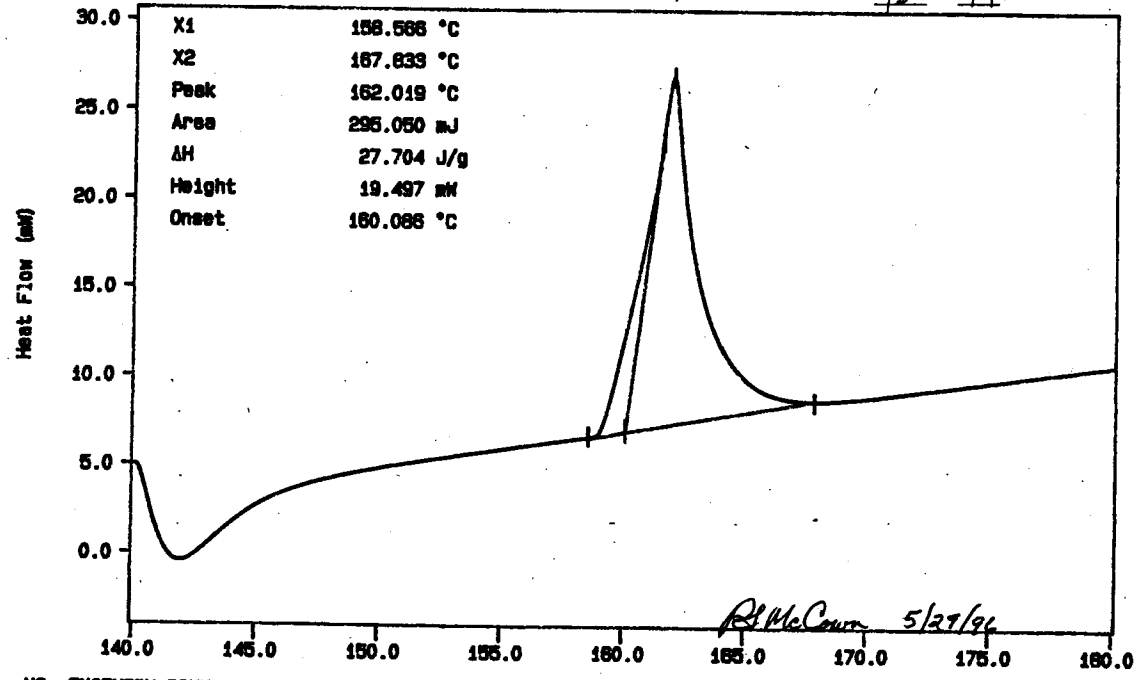
DSC-03 instrument was used.
6/13/96
Blandina Valenzuela

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: DSC
File info: IND052901 Wed May 29 08:35:17 1996
Sample Weight: 10.650 mg
12N14-B INDIUM AT 10C\MIN

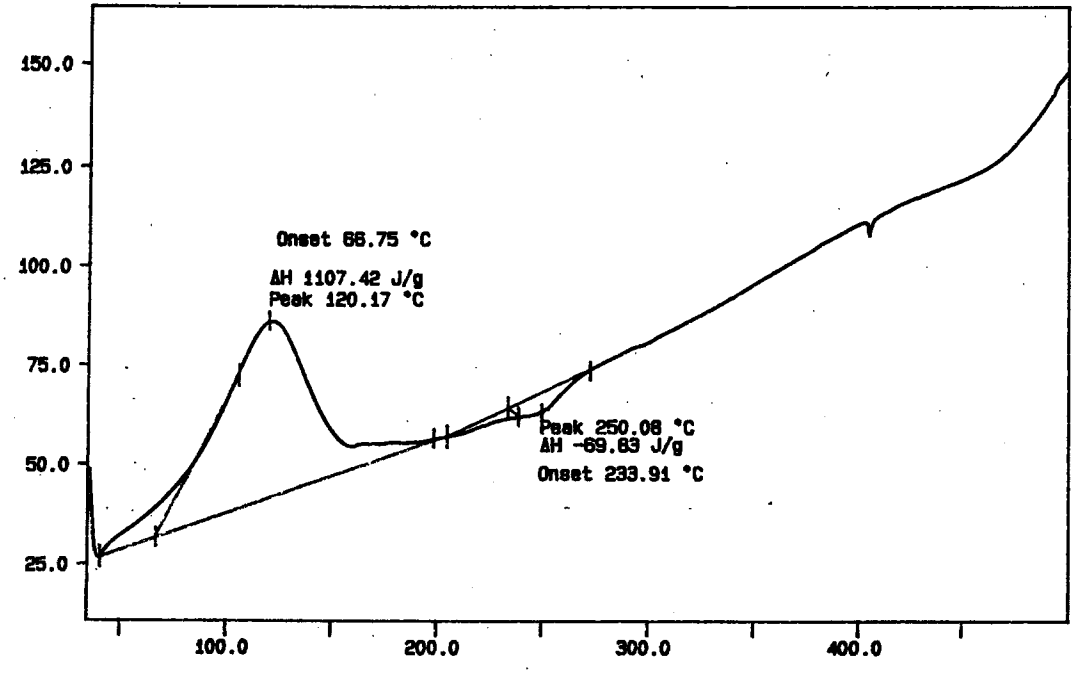
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 75 TO 79.



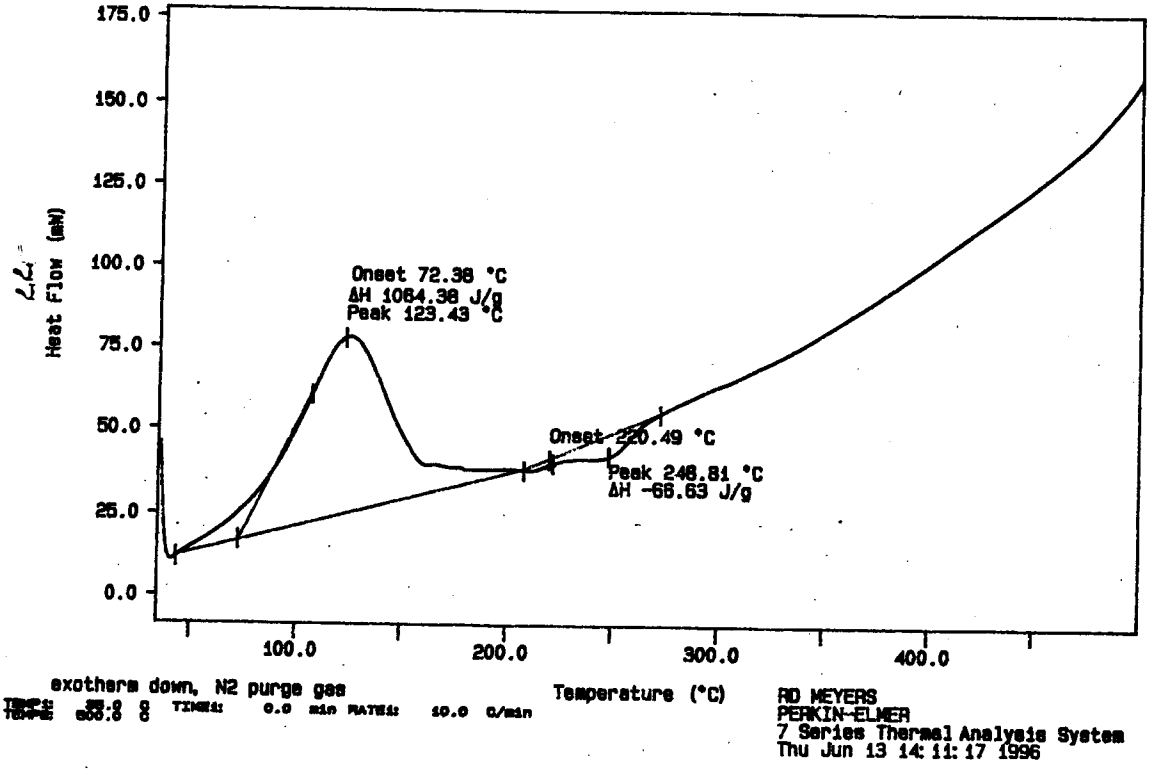
N2, EXOTHERM DOWN
TIME: 0.0 min RATE: 10.0 °/min
PJ MCCONN
PERKIN-ELMER
7 Series Thermal Analysis System

75

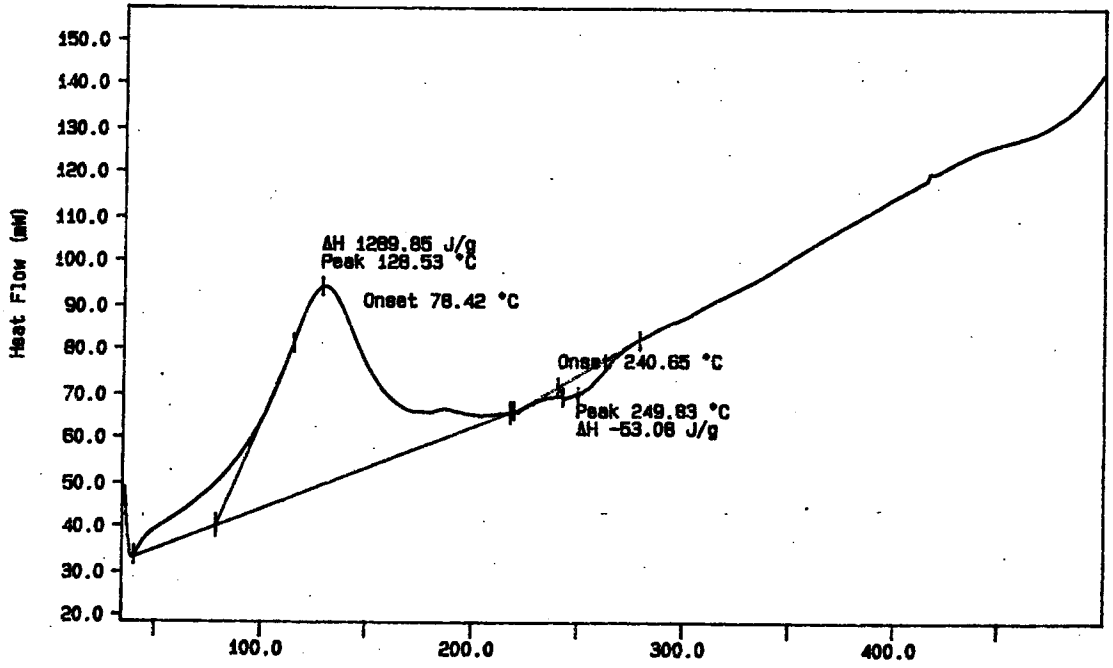
Curve 1: DSC
File info: SAM052905 Wed May 29 18:58:46 1996
Sample Weight: 13.200 mg
S96T002326



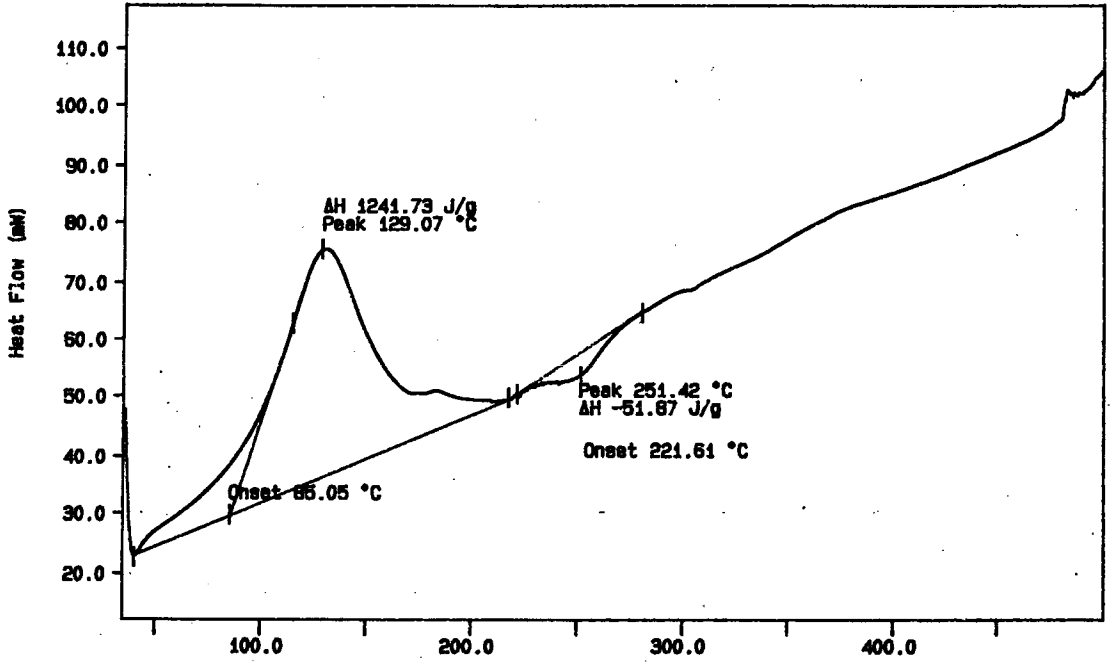
Curve 1: DSC
File info: SAM052906 Wed May 29 20:30:16 1996
Sample Weight: 17.370 mg
S96T002326DUP



Curve 1: DSC
File info: SAM052807 Wed May 29 22:31:28 1996
Sample Weight: 12.840 mg
S96T002329



Curve 1: DSC
File info: SAM053001 Thu May 30 01:44:23 1996
Sample Weight: 11.250 mg
S96T2329DUP



LABCORE Data Entry Template for Worklist# 9259

Analyst: RCM **Instrument:** DSC0 1 **Book #** 12N148

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

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	31.8	N/A	Joules/g
96000536	U-102	2	SAMPLE	S96T002332	0		DSC-01	SOLID	N/A	236.3		Joules/g
96000536	U-102	3	DUP	S96T002332	0		DSC-01	SOLID	236.3	288.9	N/A	Joules/g
96000536	U-102	4	SAMPLE	S96T002335	0		DSC-01	SOLID	N/A	307.3		Joules/g
96000536	U-102	5	DUP	S96T002335	0		DSC-01	SOLID	307.3	313.8	N/A	Joules/g

Final page for worklist # 9259

RCMeyer 5/30/96
Analyst Signature **Date**

RC Jones 6-5-96
Analyst Signature **Date**

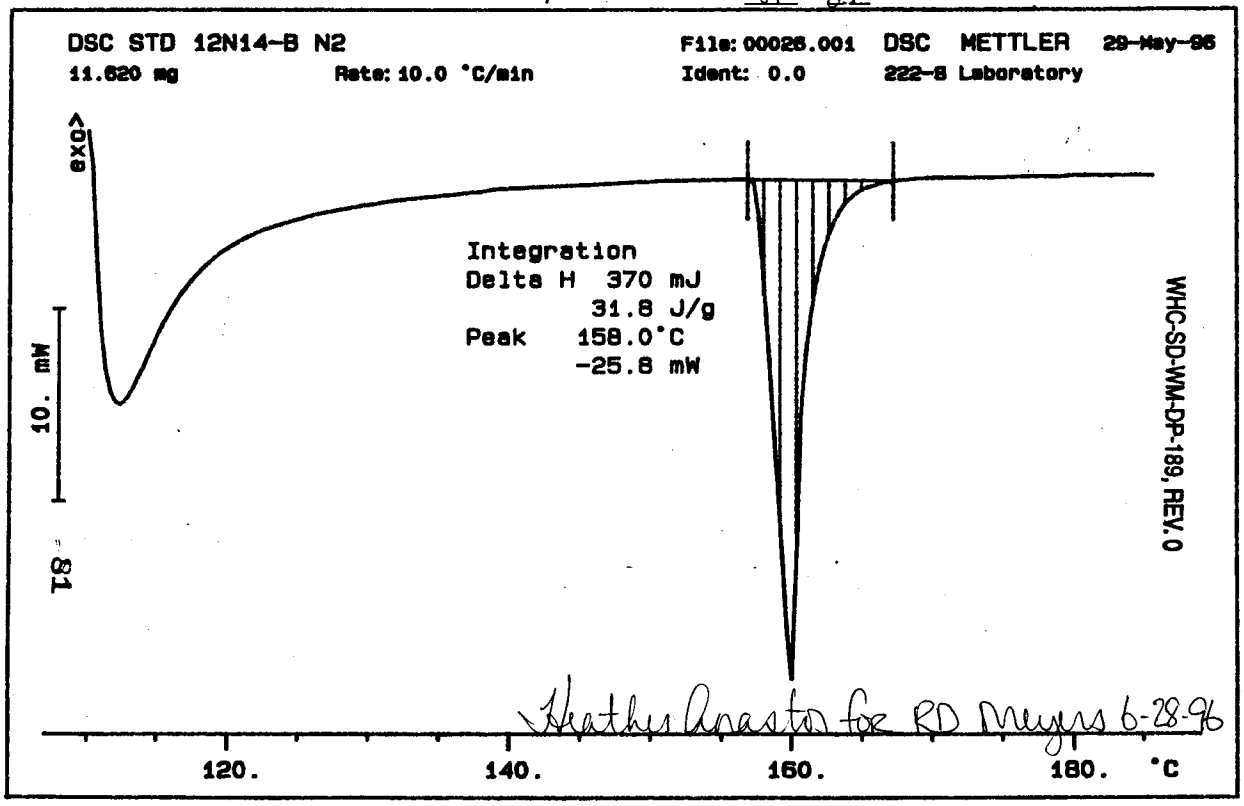
Validated by
JH Anastos 6-6-96

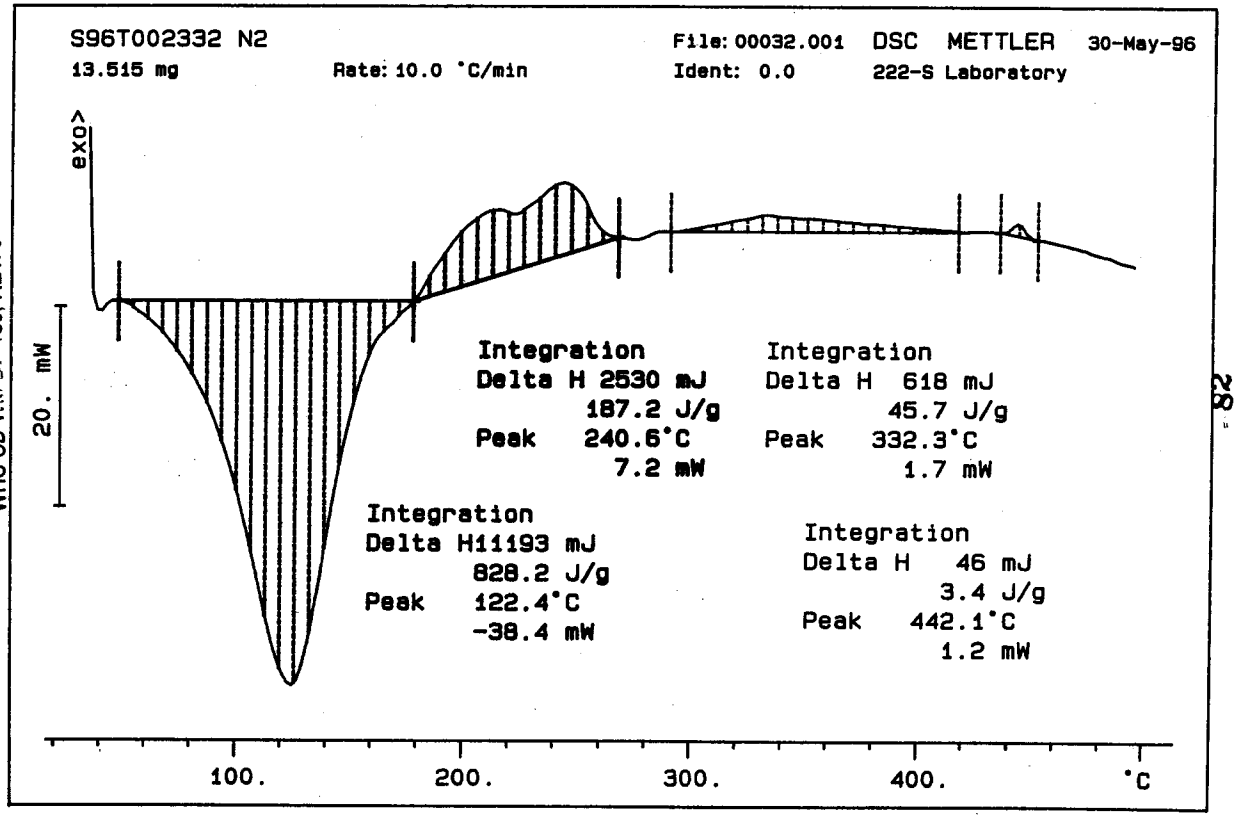
Data Entry Comments: S96T002332 results are the sum of 3 exotherms. The exotherm at approximately 450°C is probably due to a decomposition of a compound which was relatively pure.

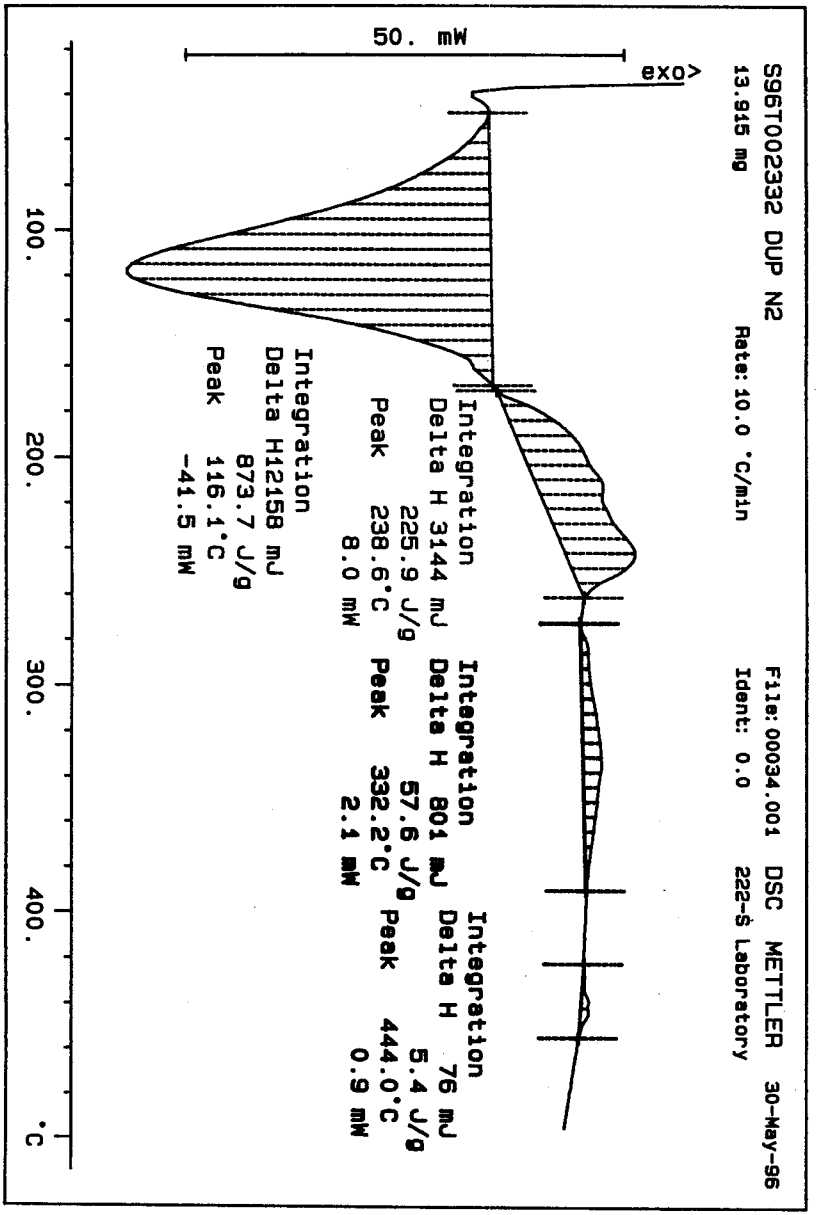
S96T002335 results are the sum of 3 exotherms. The exotherm at approximately 450°C is probably due to a decomposition of a relatively pure compound.

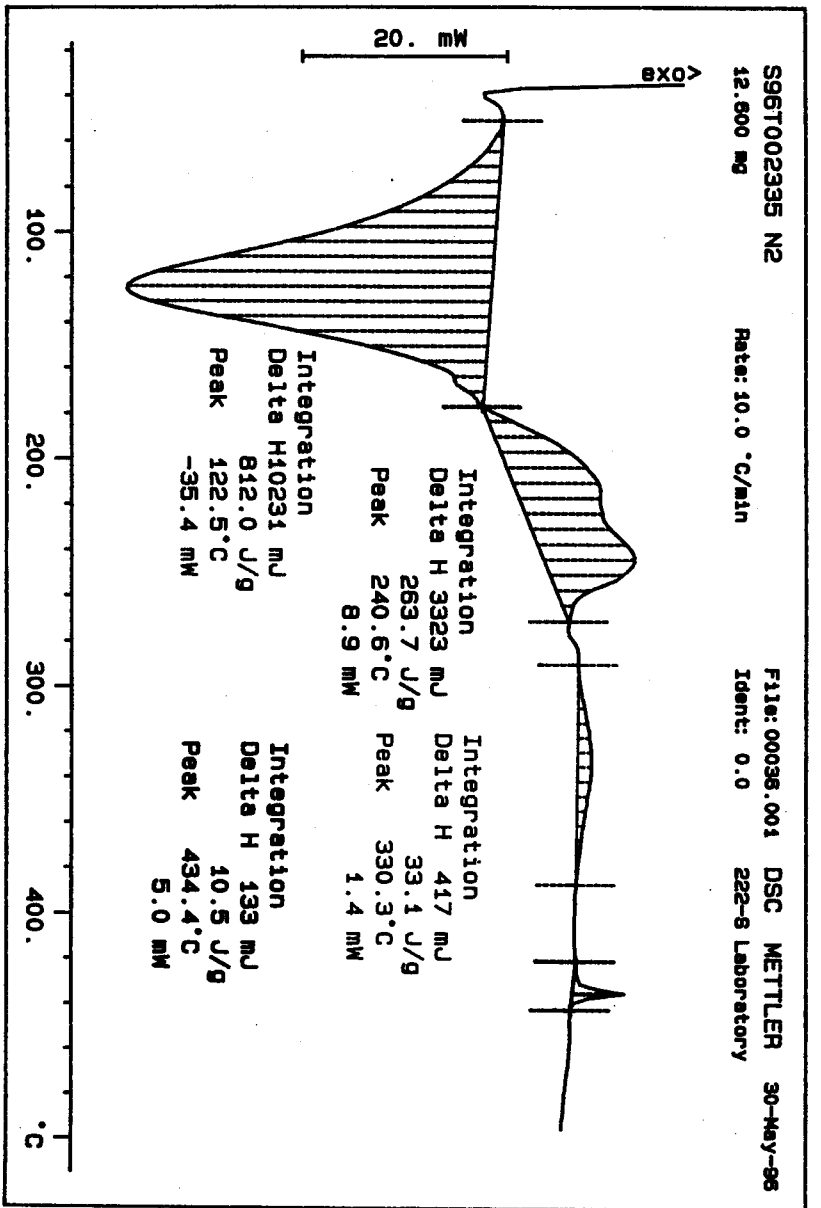
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

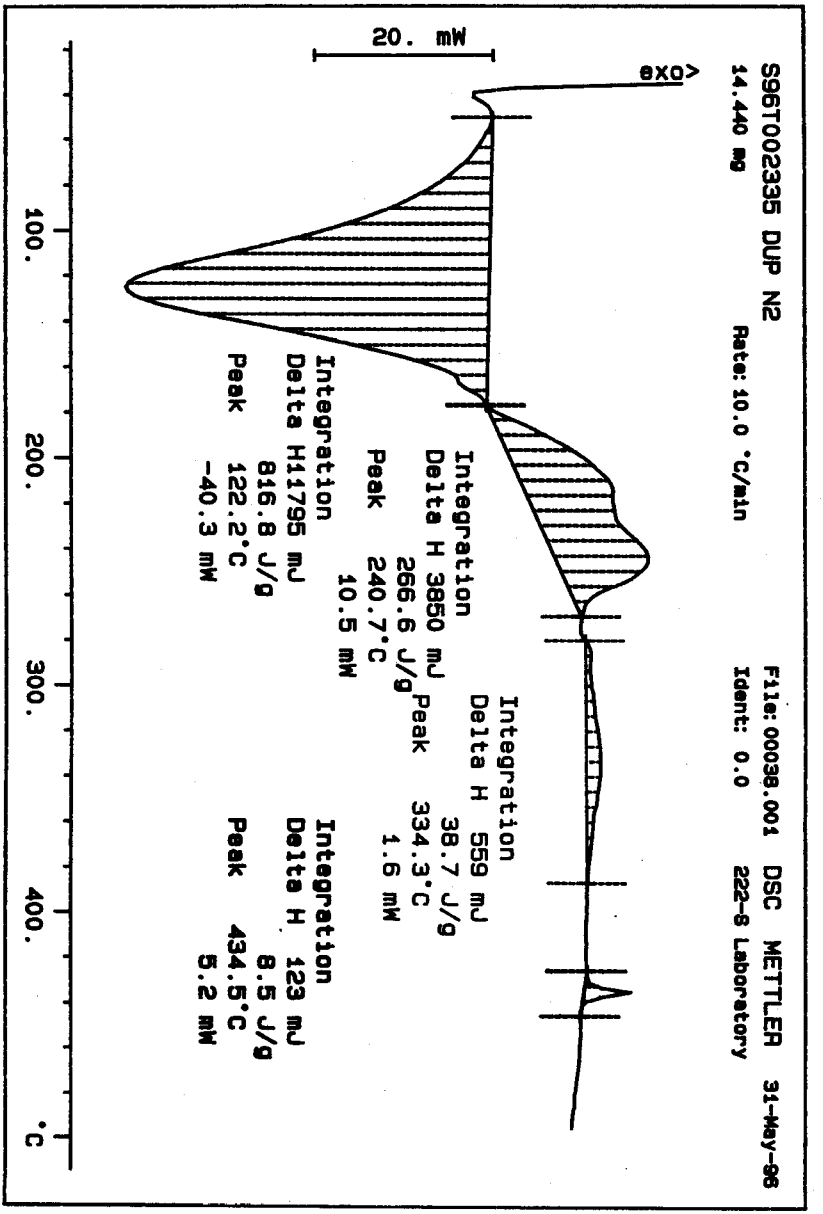
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 81 TO 85.




S96T002332 N2
13.515 mg
Rate: 10.0 °C/min
File: 00032.001 DSC METTLER 30-May-96
Ident: 0.0 222-S Laboratory
exo>
20. mW
Integration
Delta H 2530 mJ
187.2 J/g
Peak 240.6°C
7.2 mW
Integration
Delta H 618 mJ
45.7 J/g
Peak 332.3°C
1.7 mW
Integration
Delta H11193 mJ
828.2 J/g
Peak 122.4°C
-38.4 mW
Integration
Delta H 46 mJ
3.4 J/g
Peak 442.1°C
1.2 mW
100.
200.
300.
400.
°C


S96T002332 DUP N2
13.915 mg
Rate: 10.0 °C/min
File: 00034.001
Ident: 0.0
DSC METTLER 30-May-96
222-S Laboratory
50. mW
exo>
Integration
Delta H 3144 mJ
225.9 J/g
Peak 238.6°C
8.0 mW
Integration
Delta H 801 mJ
57.6 J/g
Peak 332.2°C
2.1 mW
Integration
Delta H 76 mJ
5.4 J/g
Peak 444.0°C
0.9 mW
Integration
Delta H12158 mJ
873.7 J/g
Peak 116.1°C
-41.5 mW
100.
200.
300.
400.
°C


S96T002335 N2
12.600 mg
Rate: 10.0 °C/min
File: 00036.001 DSC METTLER 30-May-96
Ident: 0.0 222-8 Laboratory
20. mW
exo>
Integration
Delta H 3323 mJ
263.7 J/g
Peak 240.6°C
8.9 mW
Integration
Delta H 417 mJ
33.1 J/g
Peak 330.3°C
1.4 mW
Integration
Delta H10231 mJ
812.0 J/g
Peak 122.5°C
-35.4 mW
Integration
Delta H 133 mJ
10.5 J/g
Peak 434.4°C
5.0 mW
100.
200.
300.
400.
°C


S96T002335 DUP N2
14.440 mg
Rate: 10.0 °C/min
File: 00038.001 DSC METTLER 31-May-96
Ident: 0.0 222-8 Laboratory
20. mW
exo>
Integration
Delta H 3850 mJ
266.6 J/g
Peak 240.7°C
10.5 mW
Integration
Delta H 559 mJ
38.7 J/g
Peak 334.3°C
1.6 mW
Integration
Delta H11795 mJ
816.8 J/g
Peak 122.2°C
-40.3 mW
Integration
Delta H 123 mJ
8.5 J/g
Peak 434.5°C
5.2 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9260

Analyst: KRM **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	32.6 *	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002338	0		DSC-01	SOLID	N/A	61.0		Joules/g
96000536	U-102	3 DUP	S96T002338	0		DSC-01	SOLID	61.0	64.8	N/A	Joules/g
96000536	U-102	4 SAMPLE	S96T002341	0		DSC-01	SOLID	N/A	65.7		Joules/g
96000536	U-102	5 DUP	S96T002341	0		DSC-01	SOLID	65.7	86.5	N/A	Joules/g

Final page for worklist # 9260

5-31-96
Analyst Signature **Date**

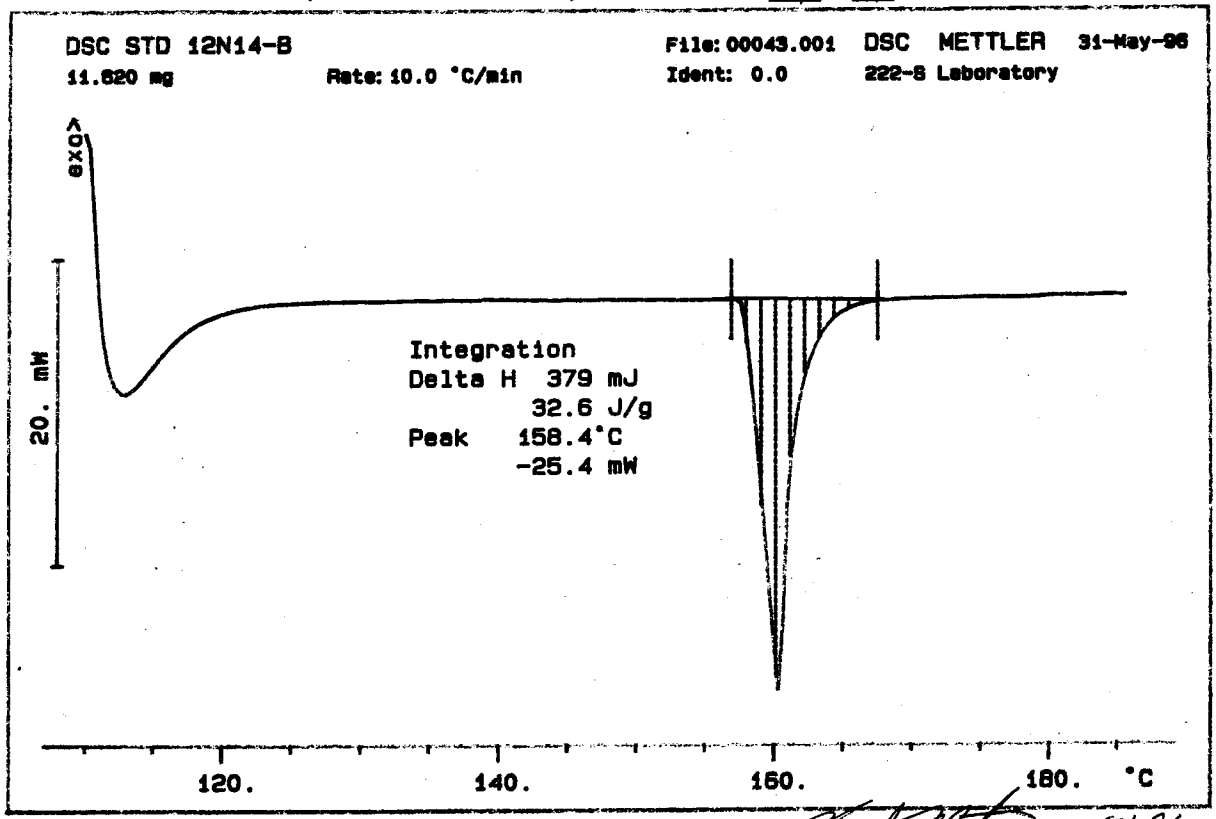
6-12-96
Analyst Signature **Date**

Verified/Validated by
Blanding Valenzuela 6/14/96

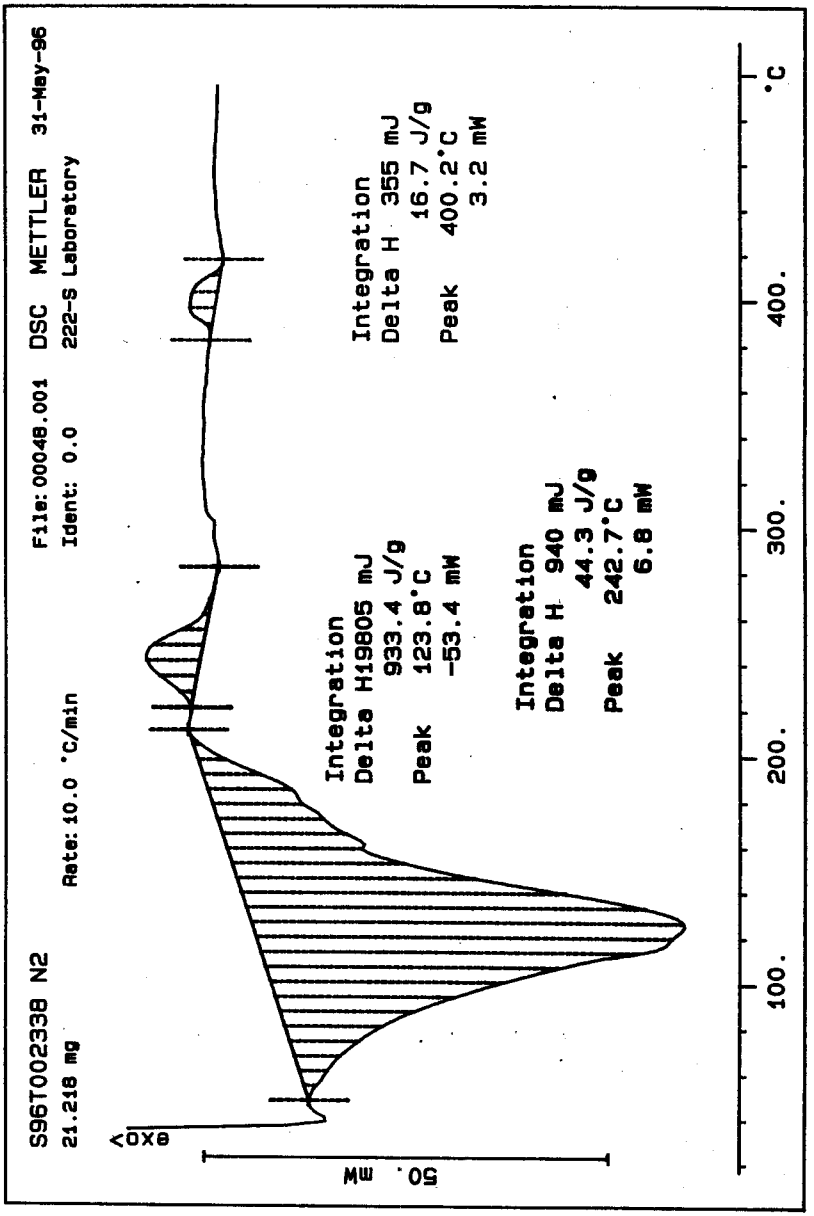
Data Entry Comments: The chem tech integrating sample S96T002341 was a little over zealous in his integration. The results crossed out are excess results.

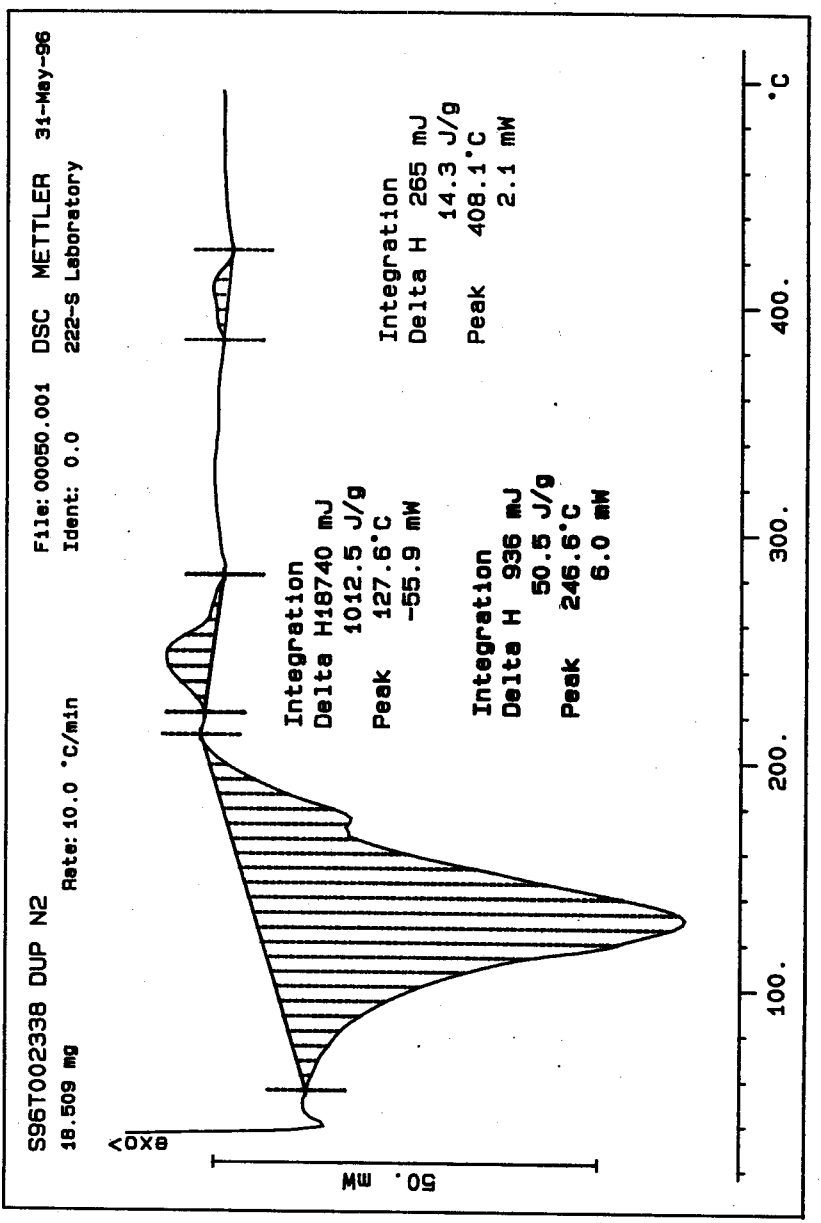
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

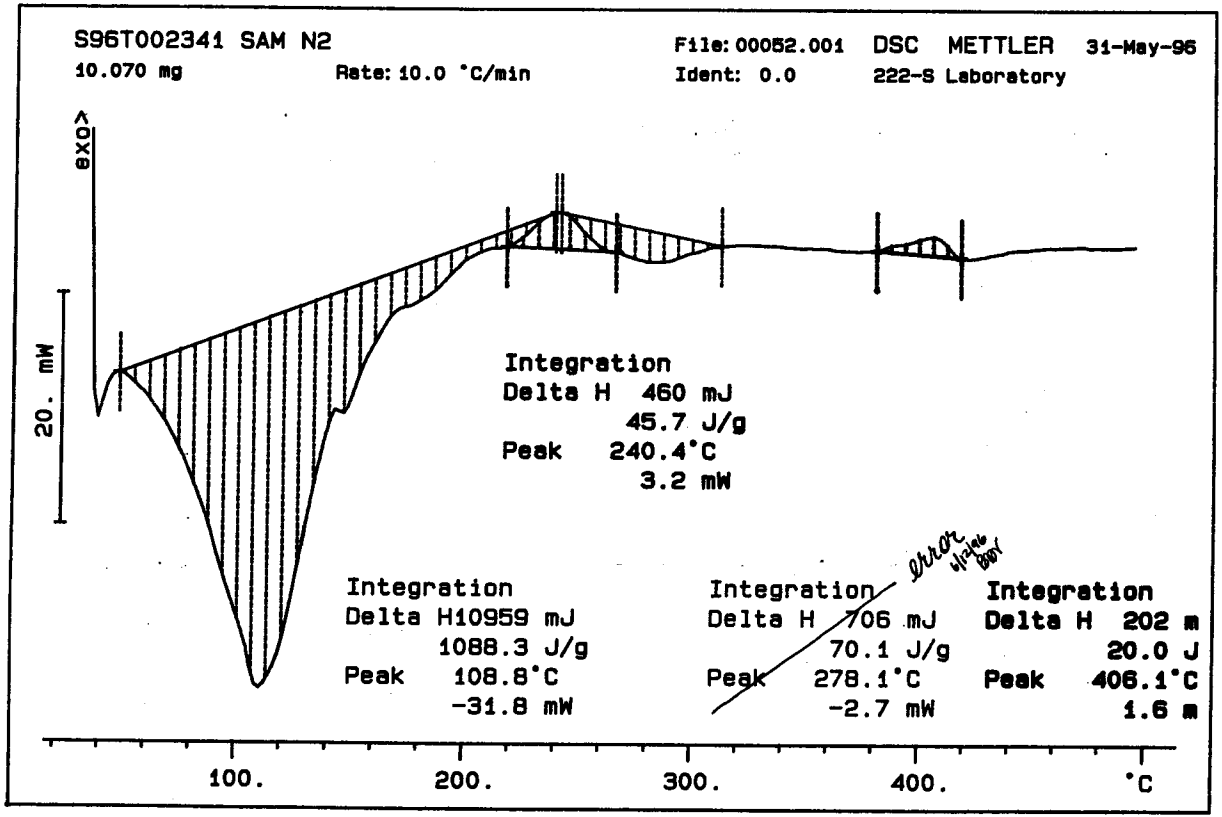
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 87 TO 91.

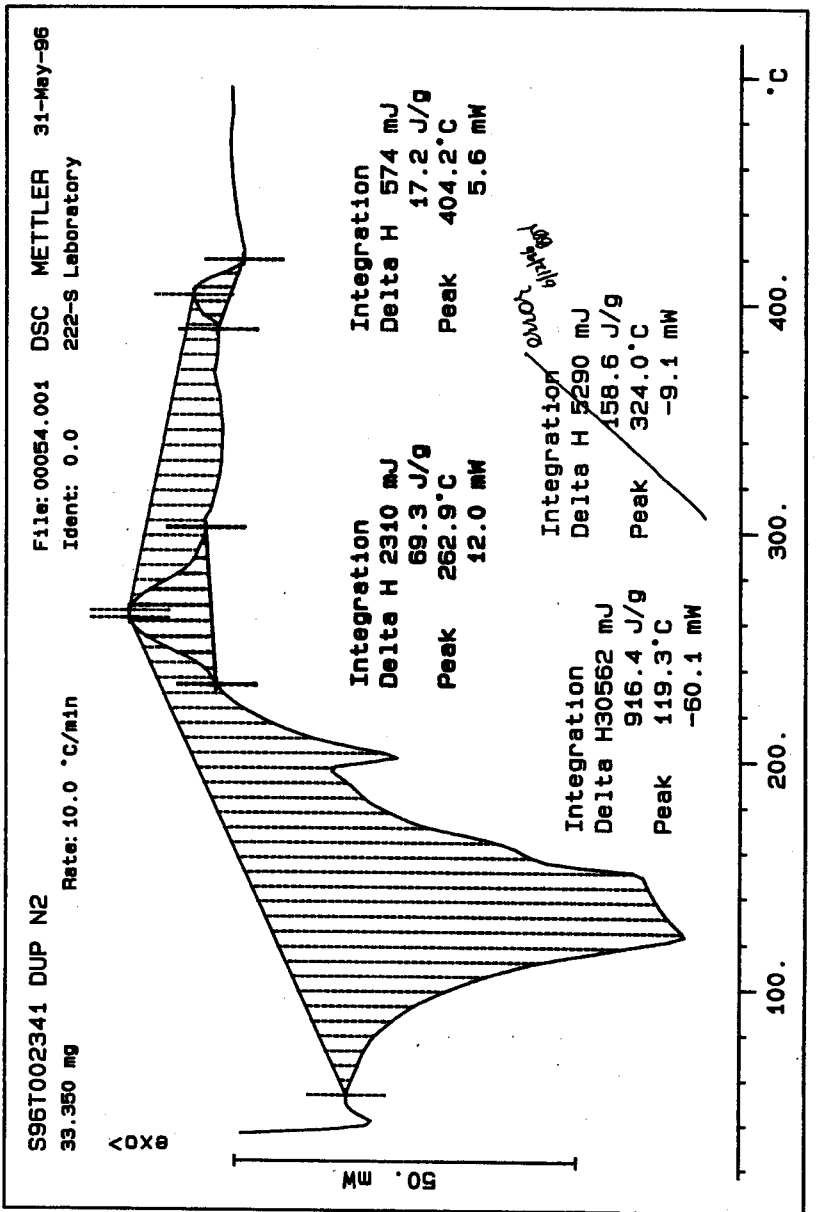


5-31-96


S96T002338 N2
21.218 mg
Rate: 10.0 °C/min
File: 00048.001
Ident: 0.0
DSC METTLER 31-May-96
222-S Laboratory
exo>
50. mW
Integration
Delta H19805 mJ
933.4 J/g
Peak 123.8°C
-53.4 mW
Integration
Delta H 355 mJ
16.7 J/g
Peak 400.2°C
3.2 mW
Integration
Delta H 940 mJ
44.3 J/g
Peak 242.7°C
6.8 mW
100.
200.
300.
400.
°C


S96T002338 DUP N2
18.509 mg
Rate: 10.0 °C/min
File: 00050.001
Ident: 0.0
DSC METTLER 31-May-96
222-S Laboratory
Integration
Delta H18740 mJ
1012.5 J/g
Peak 127.6°C
-55.9 mW
Integration
Delta H 936 mJ
50.5 J/g
Peak 246.6°C
6.0 mW
Integration
Delta H 265 mJ
14.3 J/g
Peak 408.1°C
2.1 mW
50. mW
exo>
100.
200.
300.
400.
°C


S96T002341 SAM N2
10.070 mg
Rate: 10.0 °C/min
File: 00052.001
Ident: 0.0
DSC METTLER
222-S Laboratory
31-May-96
exo
20. mW
Integration
Delta H 460 mJ
45.7 J/g
Peak 240.4°C
3.2 mW
Integration
Delta H10959 mJ
1088.3 J/g
Peak 108.8°C
-31.8 mW
Integration
Delta H 706 mJ
70.1 J/g
Peak 278.1°C
-2.7 mW
Integration
Delta H 202 m
20.0 J
Peak 406.1°C
1.6 m
100.
200.
300.
400.
°C


S96T002341 DUP N2
33.350 mg
Rate: 10.0 °C/min
File: 00054.001
Ident: 0.0
DSC METTLER 31-May-96
222-S Laboratory
exo>
50. mW
100.
200.
300.
400.
°C
Integration
Delta H 2310 mJ
69.3 J/g
Peak 262.9°C
12.0 mW
Integration
Delta H 574 mJ
17.2 J/g
Peak 404.2°C
5.6 mW
Integration
Delta H30562 mJ
916.4 J/g
Peak 119.3°C
-60.1 mW
Integration
Delta H 5290 mJ
158.6 J/g
Peak 324.0°C
-9.1 mW

worklistrpt Version 2.1 05/15/95
06/12/96 15:39

LABCORE Data Entry Template for Worklist# 9261

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12NMB

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-03	SOLID	28.45	28.12	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002344	0		DSC-03	SOLID	N/A	Ø		Joules/g
96000536	U-102	3 DUP	S96T002344	0		DSC-03	SOLID	Ø	11.7	N/A	Joules/g
96000536	U-102	4 TRIPL	S96T002344	0		DSC-03	SOLID	Ø	8.05	N/A	Joules/g
96000536	U-102	5 SAMPLE	S96T002347	0		DSC-03	SOLID	N/A	Ø		Joules/g
96000536	U-102	6 DUP	S96T002347	0		DSC-03	SOLID	Ø	57.2	N/A	Joules/g

Final page for worklist # 9261

See attached for signatures
Analyst Signature **Date** 6-12-96 BDR

Analyst Signature 6.13.96 **Date**

Verified / Validated by
Blandina Valenzuela
6/14/96

S96T002344 was run in triplicate because of the small difference between sample and duplicate.

Data Entry Comments: S96T002347 was not run in triplicate because the duplicate result was not close to the notification limit.

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# 9261

Analyst: ADP **Instrument:** DSC0 _____ **Book #** 12 N14B

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

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	_____	_____	N/A	Joules/g
96000536	U-102	2	SAMPLE	S96T002344	0		DSC-01	SOLID	N/A	_____	_____	Joules/g
96000536	U-102	3	DUP	S96T002344	0		DSC-01	SOLID	_____	_____	N/A	Joules/g
96000536	U-102	4	SAMPLE	S96T002347	0		DSC-01	SOLID	N/A	_____	_____	Joules/g
96000536	U-102	5	DUP	S96T002347	0		DSC-01	SOLID	_____	_____	N/A	Joules/g

Final page for worklist # 9261

Anthony Purcupile 05-31-96
Analyst Signature **Date**

_____
Analyst Signature **Date**

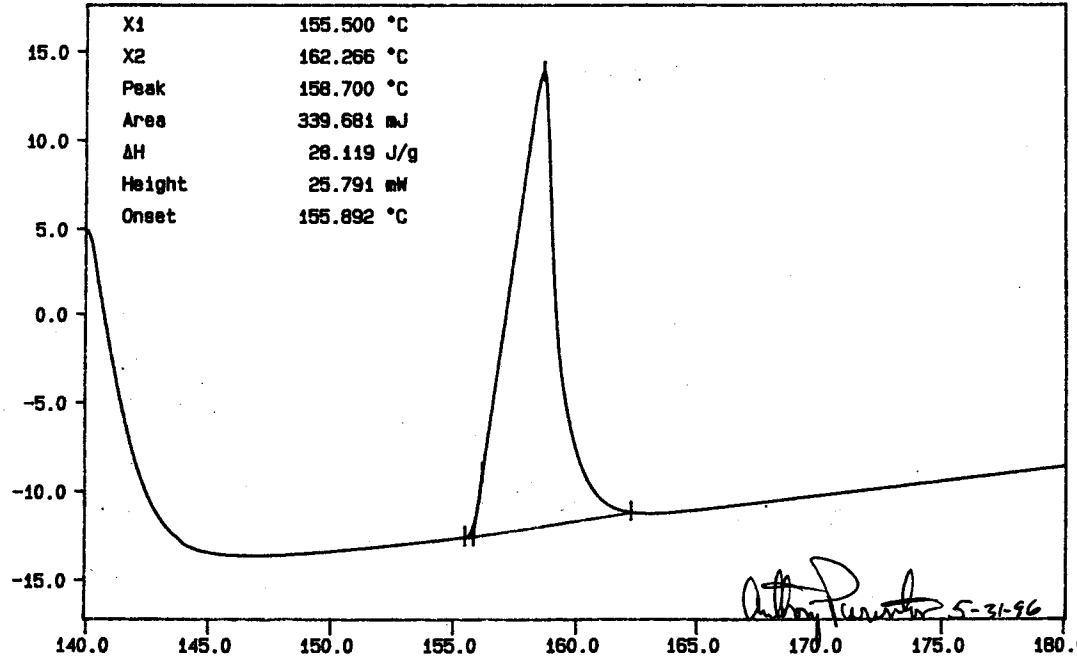
DSC-03 instrument
was used.
6-12-96
Blandina
Valenzuela

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: DSC
File info: IND053101 Fri May 31 15:11:17 1996
Sample Weight: 12.080 mg
12N14-B INDIUM AT 10C\MIN

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 94 TO 99.

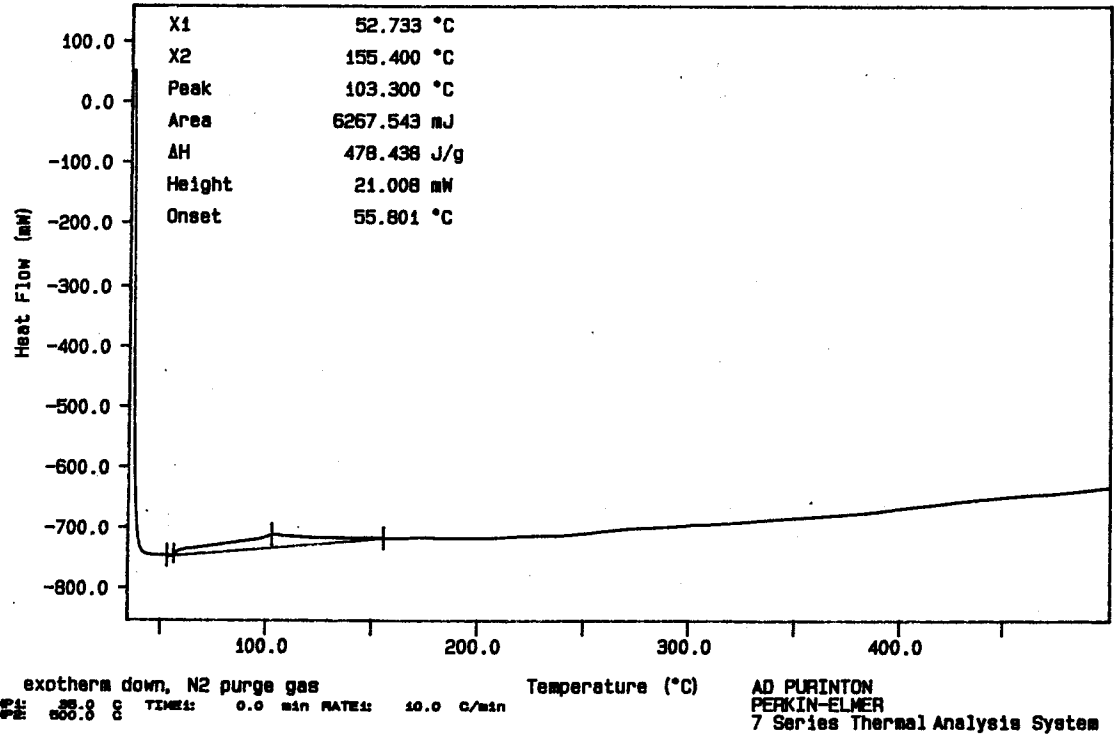


N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System

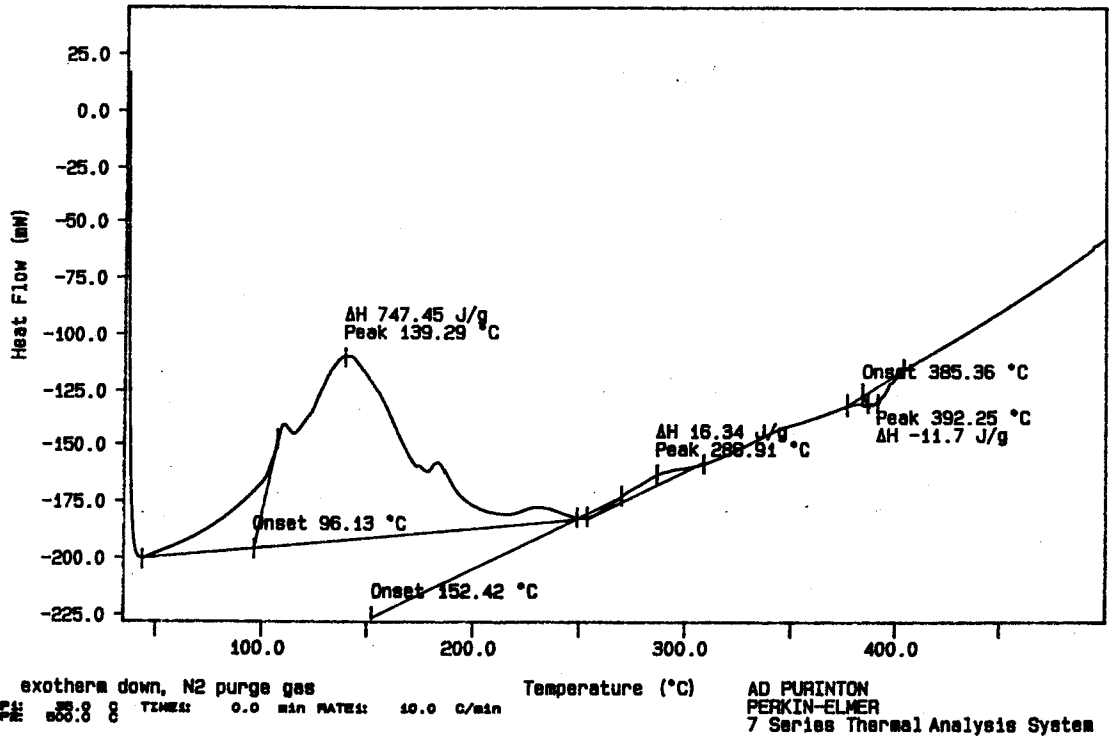
94

Curve 1: DSC
File info: SAM053101 Fri May 31 19:15:43 1996
Sample Weight: 13.100 mg
S96T002344 SAM

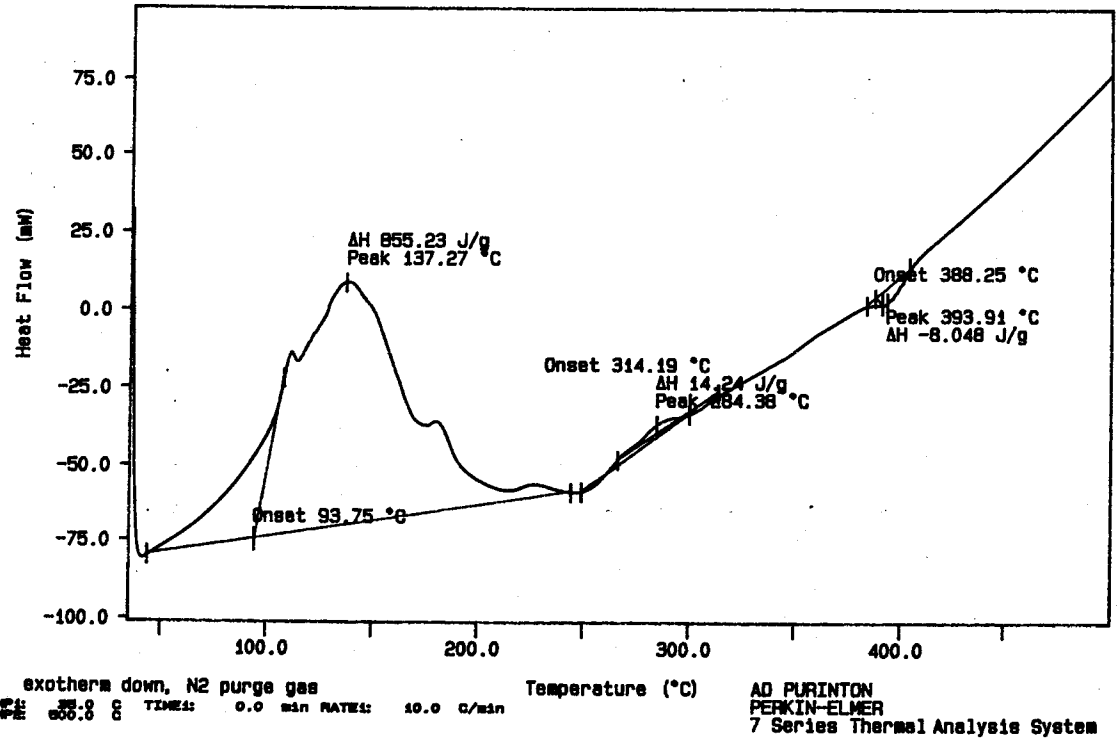


95

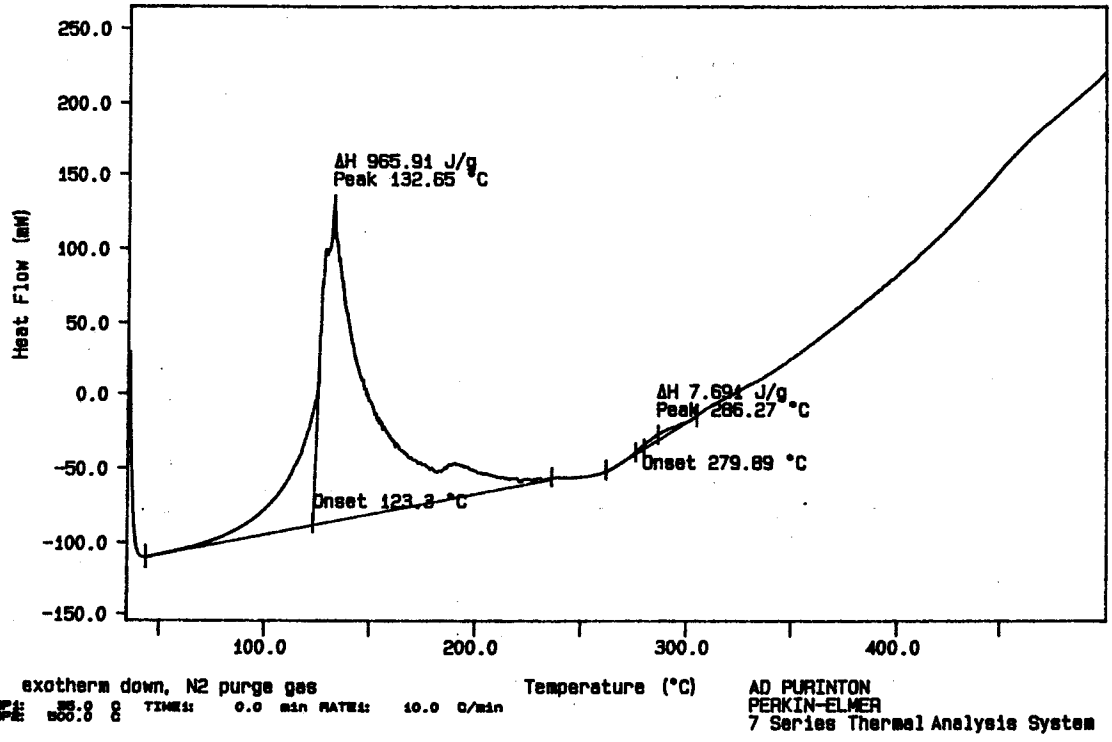
Curve 1: DSC
File info: SAM053102 Fri May 31 21:59:10 1996
Sample Weight: 46.410 mg
S96T002344 DUP



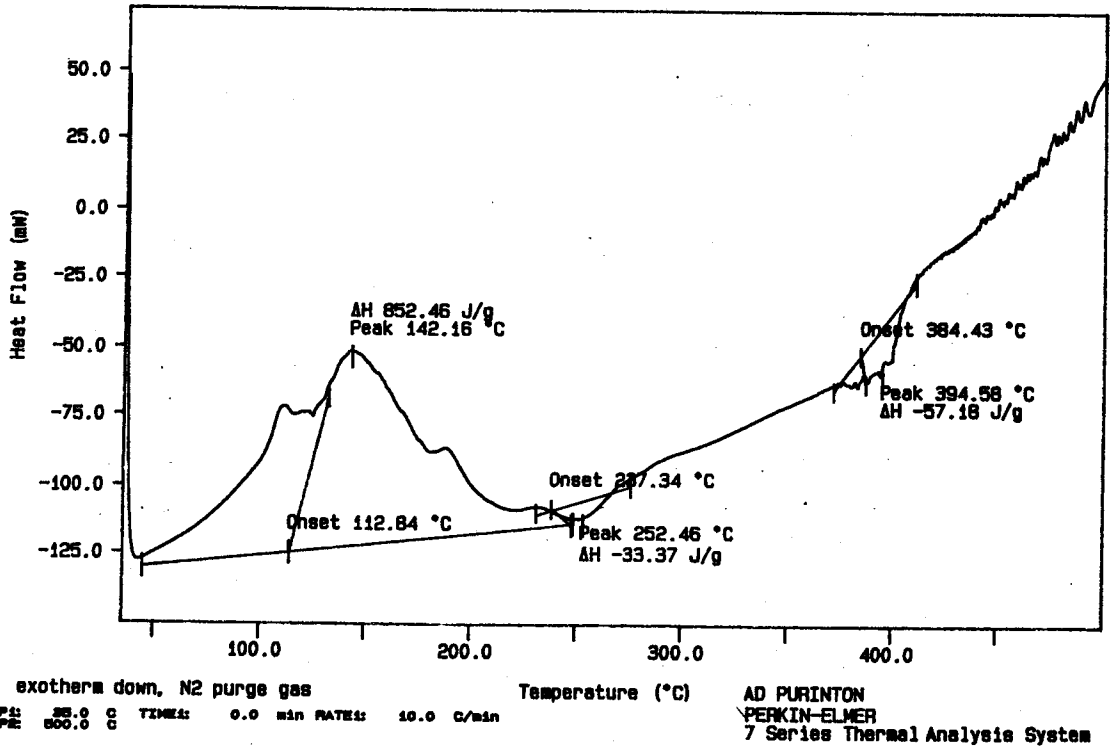
Curve 1: DSC
File info: SAM053105 Sat Jun 1 02:35:49 1996
Sample Weight: 40.240 mg
S96T002344 TRP



Curve 1: DSC
File info: SAM053103 Fri May 31 23:17:44 1996
Sample Weight: 41.070 mg
S96T002347 SAM



Curve 1: DSC
File info: SAM053104 Sat Jun 1 01:28:25 1996
Sample Weight: 39.200 mg
S96T002347 DUP



LABCORE Data Entry Template for Worklist# 9381

Analyst: AMP **Instrument:** DSC0 1 **Book #** DSC 14N 17N14B 6-1-96

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

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	31.6 *	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002665	0		DSC-01	SOLID	N/A	193.8		Joules/g
96000536	U-102	3 DUP	S96T002665	0		DSC-01	SOLID	193.8	98.1	N/A	Joules/g
96000536	U-102	4 SAMPLE	S96T002666	0		DSC-01	SOLID	N/A	97.4		Joules/g
96000536	U-102	5 DUP	S96T002666	0		DSC-01	SOLID	97.4	111.8	N/A	Joules/g

Final page for worklist # 9381

Analyst Signature 6-1-96 Date

Analyst Signature 6-5-96 Date

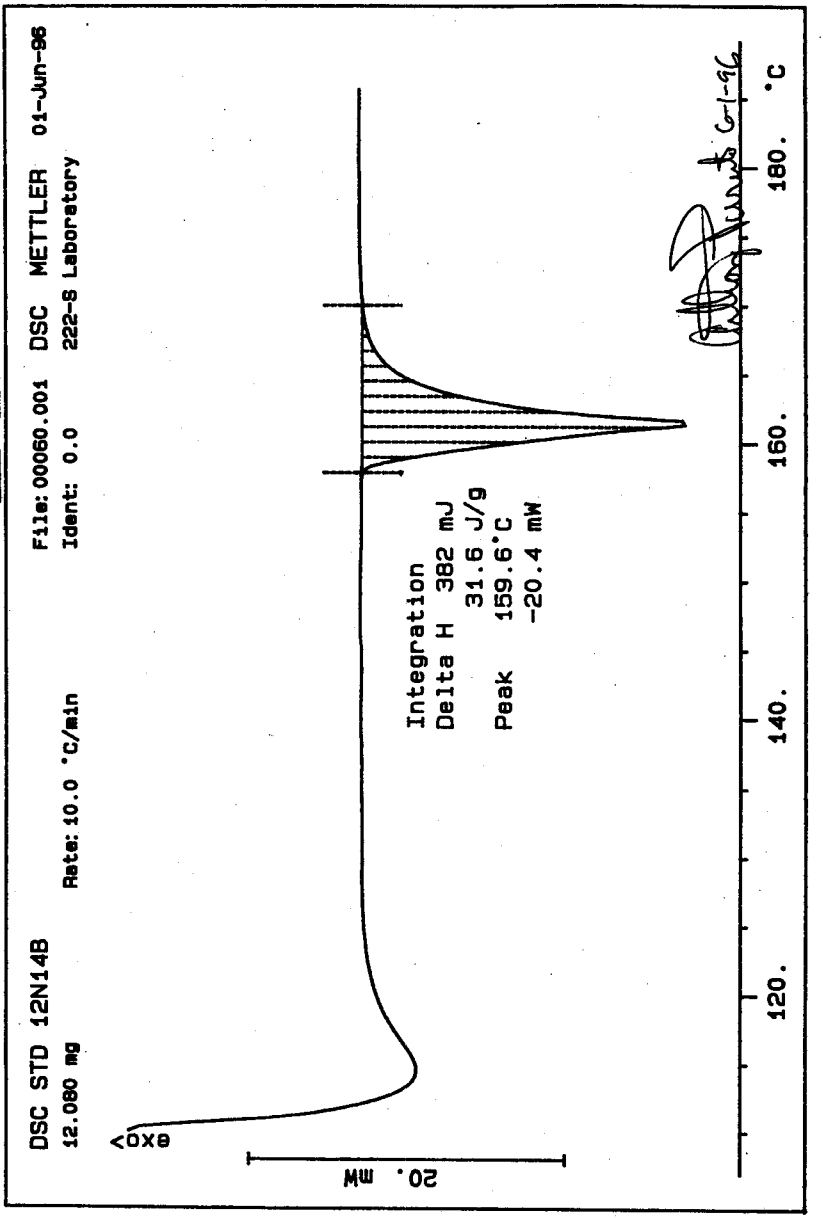
Validated by HAnastn 6-6-96

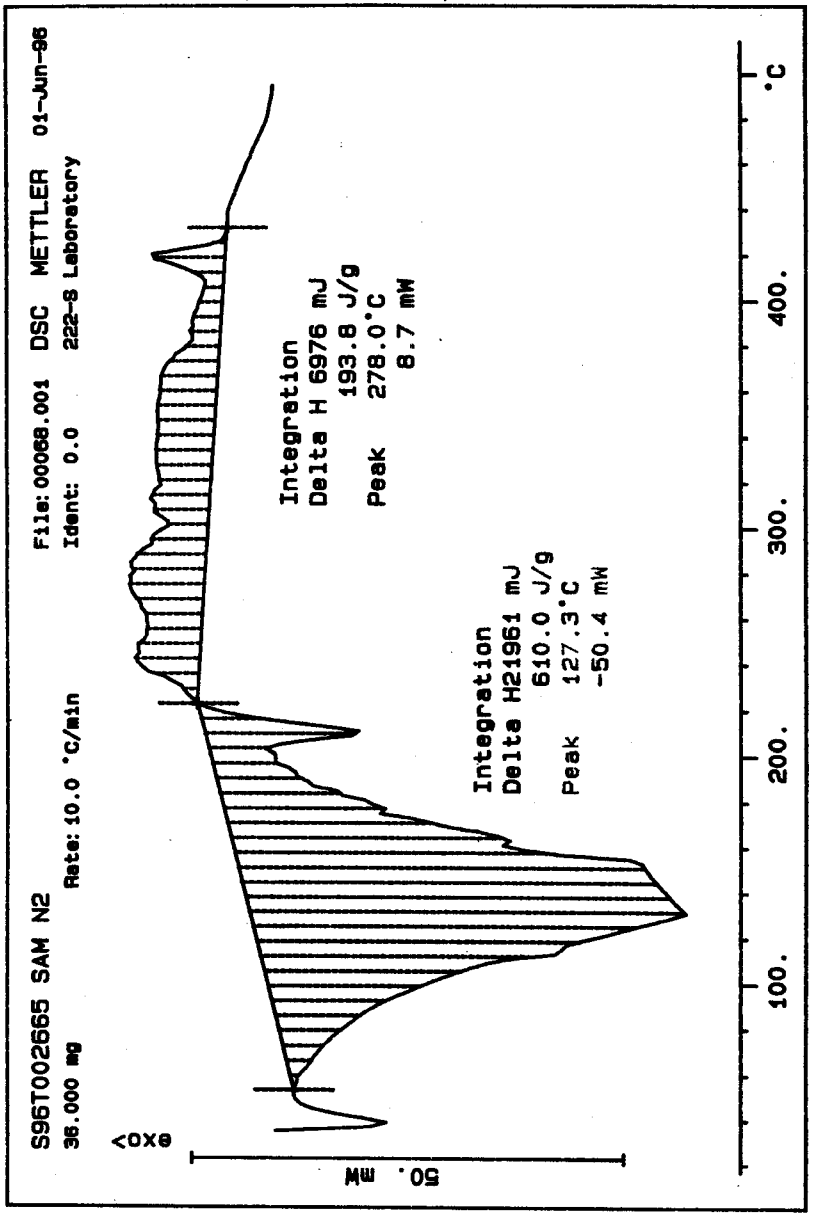
S96T002665 Sample will be rerun due to high RPD's and the thermograms did not look similar.

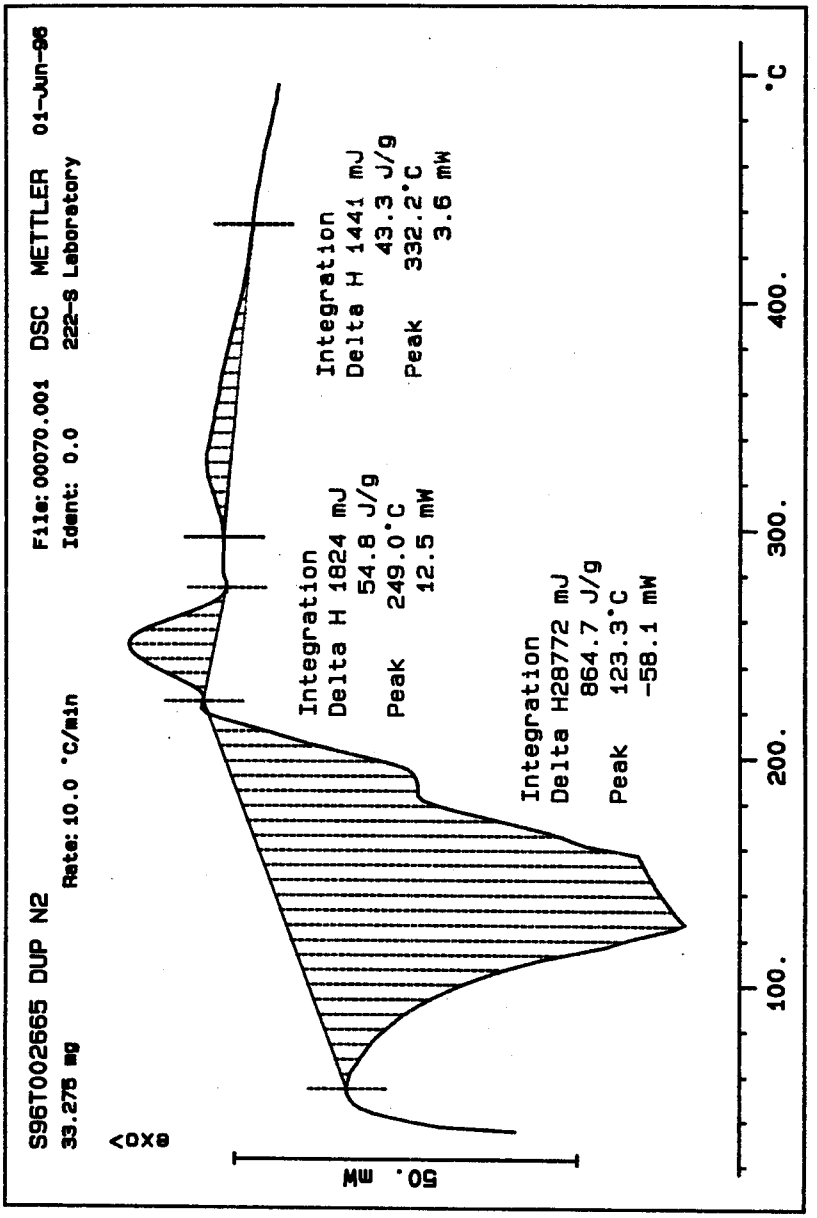
Data Entry Comments: S96T002666 Samples were not rerun because the RPD's were close to 10% and the results are not close to the notification limit.

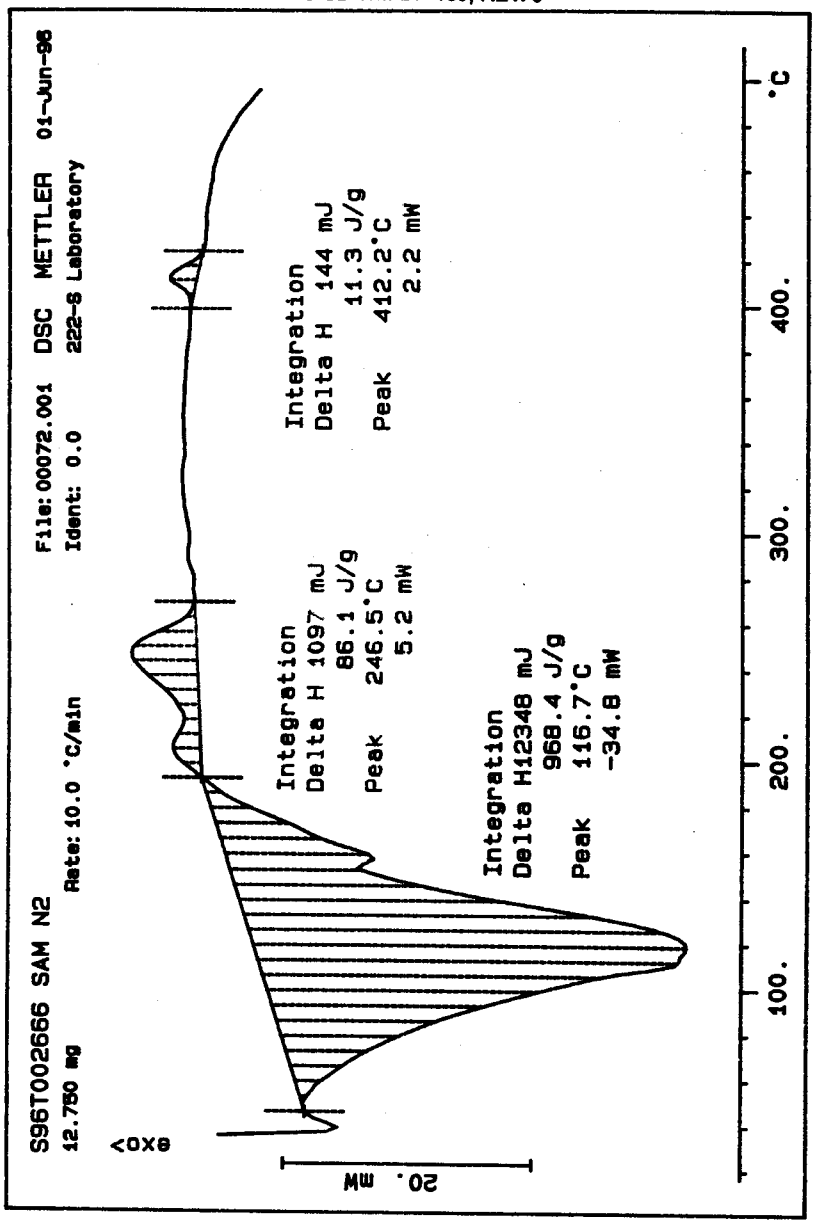
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

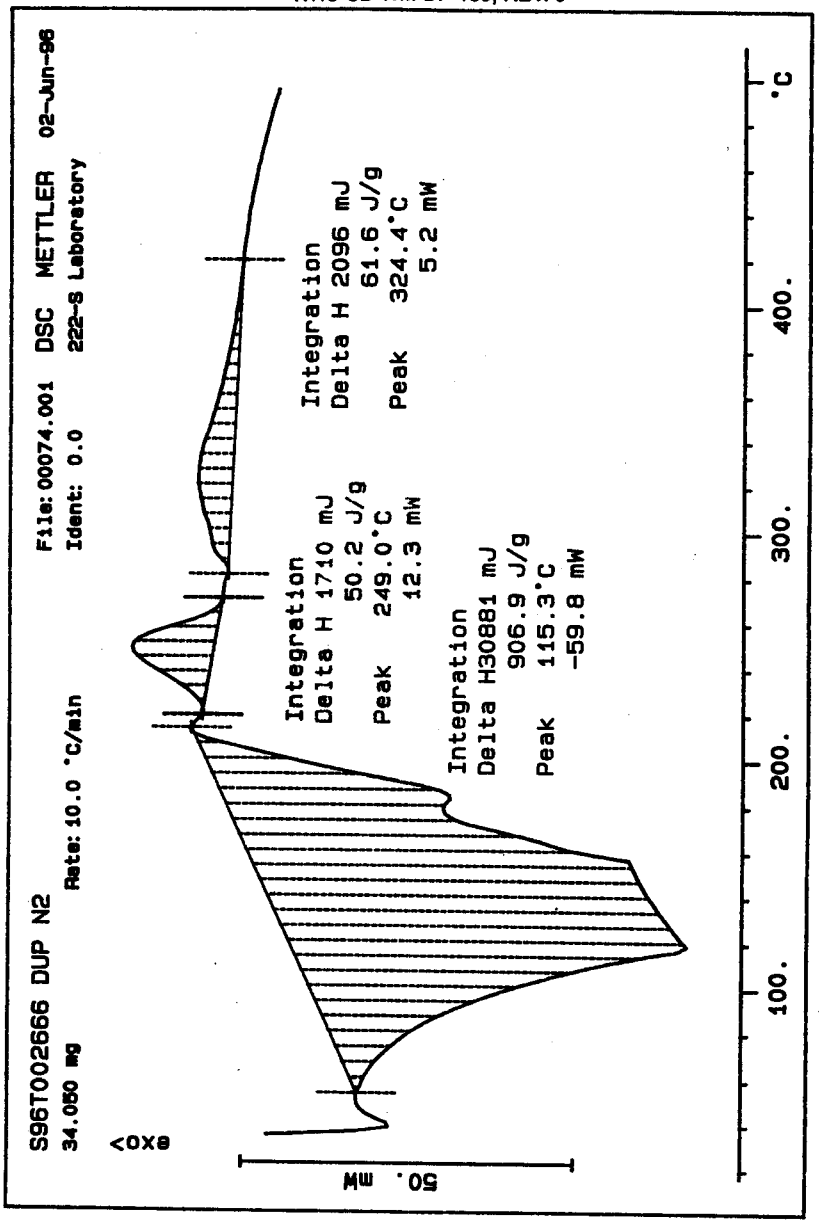
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 101 TO 105.




S95T002665 SAM N2
36.000 mg
Rate: 10.0 °C/min
File: 00068.001 DSC METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 6976 mJ
193.8 J/g
Peak 278.0°C
8.7 mW
Integration
Delta H21961 mJ
610.0 J/g
Peak 127.3°C
-50.4 mW
<exo
50. mW
100.
200.
300.
400.
°C


S96T002665 DUP N2
33.275 mg
Rate: 10.0 °C/min
File: 00070.001 DSC METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
exo>
50. mW
100.
200.
300.
400.
°C
Integration
Delta H 1824 mJ
54.8 J/g
Peak 249.0°C
12.5 mW
Integration
Delta H 1441 mJ
43.3 J/g
Peak 332.2°C
3.6 mW
Integration
Delta H28772 mJ
864.7 J/g
Peak 123.3°C
-58.1 mW


S96T002666 SAM N2
12.750 mg
Rate: 10.0 °C/min
File: 00072.001 DSC METTLER 01-Jun-96
Ident: 0.0 222-8 Laboratory
exo>
20. mW
Integration
Delta H 1097 mJ
86.1 J/g
Peak 246.5°C
5.2 mW
Integration
Delta H12348 mJ
968.4 J/g
Peak 116.7°C
-34.8 mW
Integration
Delta H 144 mJ
11.3 J/g
Peak 412.2°C
2.2 mW
100.
200.
300.
400.
°C


S96T002666 DUP N2
34.080 mg
Rate: 10.0 °C/min
File: 00074.001 DSC METTLER 02-Jun-96
Ident: 0.0 222-S Laboratory
<exo
50. mW
100.
200.
300.
400.
°C
Integration
Delta H 1710 mJ
50.2 J/g
Peak 249.0°C
12.3 mW
Integration
Delta H 2096 mJ
61.6 J/g
Peak 324.4°C
5.2 mW
Integration
Delta H30881 mJ
906.9 J/g
Peak 115.3°C
-59.8 mW

LABCORE Data Entry Template for Worklist# 9382

Analyst: ANP **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-102 DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	31.9 *	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002755	0		DSC-01	SOLID	N/A	70.2		Joules/g
96000536	U-102	3 DUP	S96T002755	0		DSC-01	SOLID	70.2	62.2	N/A	Joules/g

Final page for worklist # 9382

Anthony Purnston 5-31-96
Analyst Signature **Date**

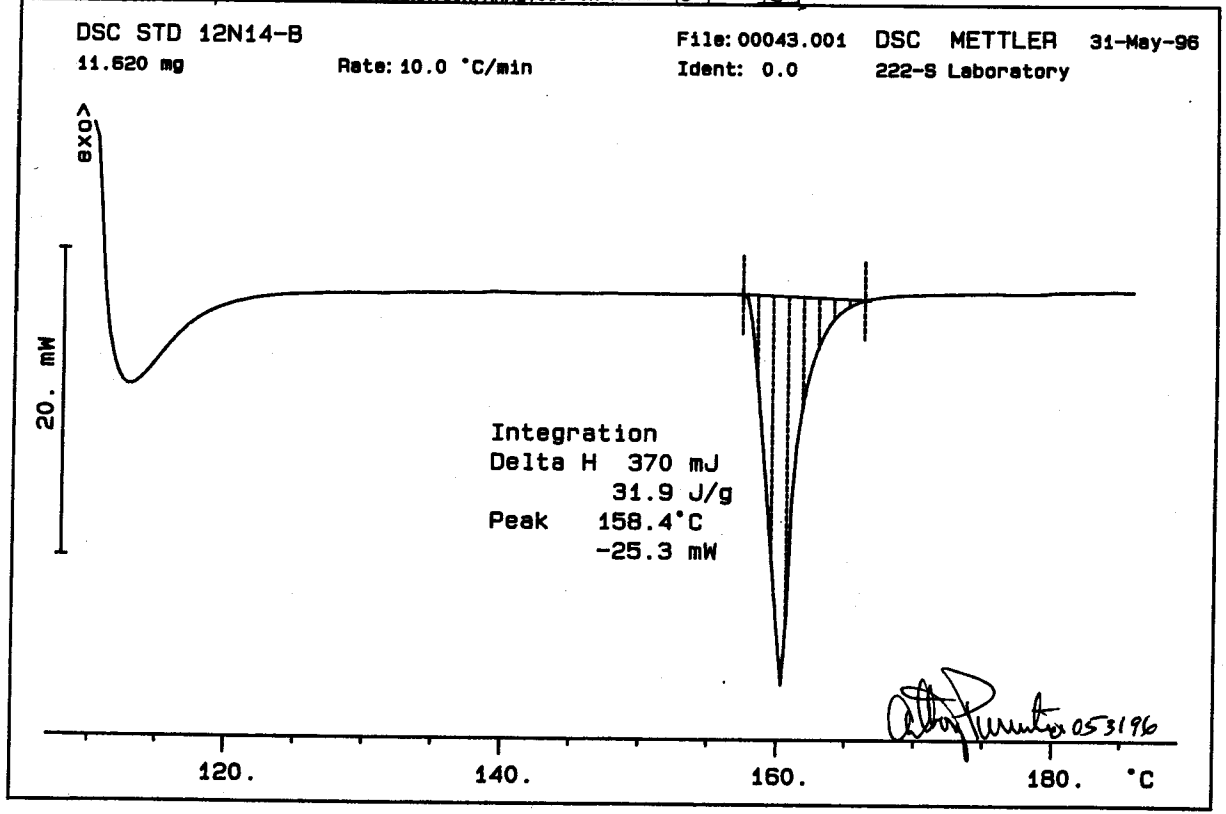
RH Stahl 6-3-96
Analyst Signature **Date**

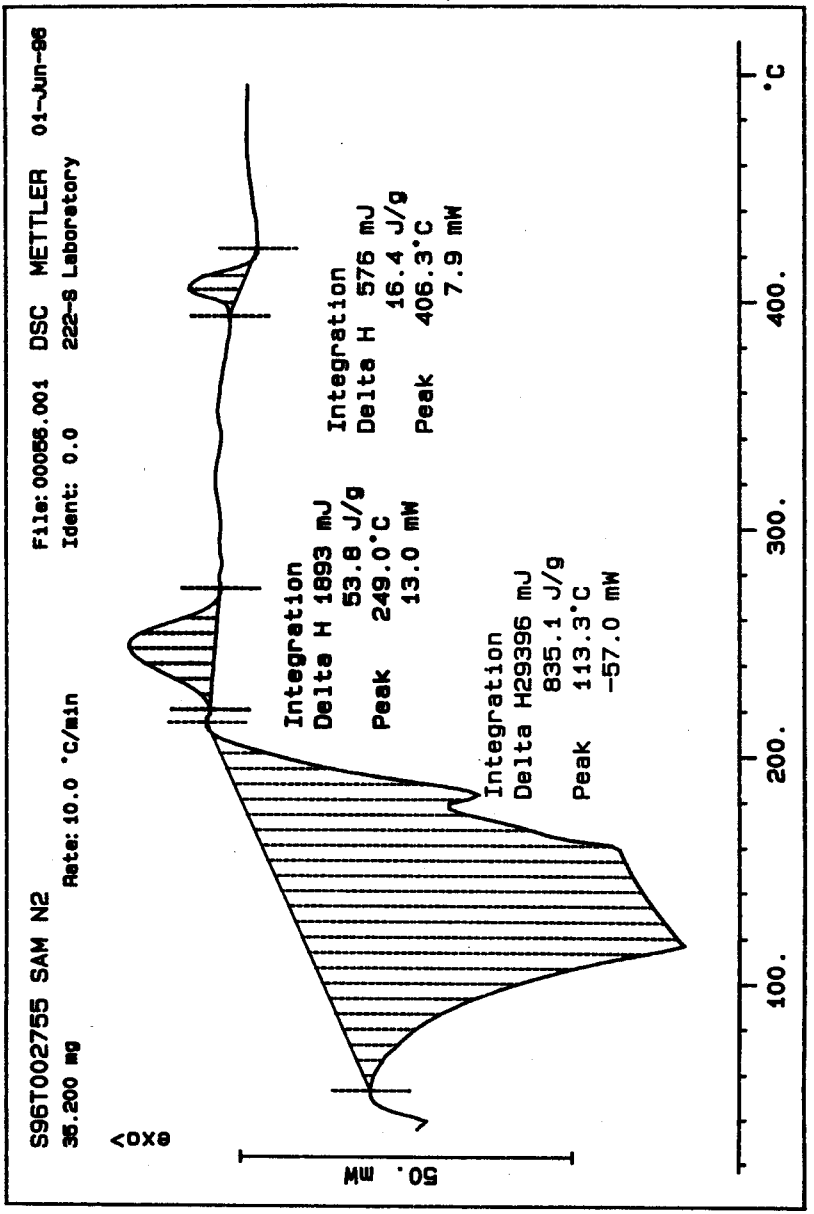
Validated by HAnaston 6-6-96

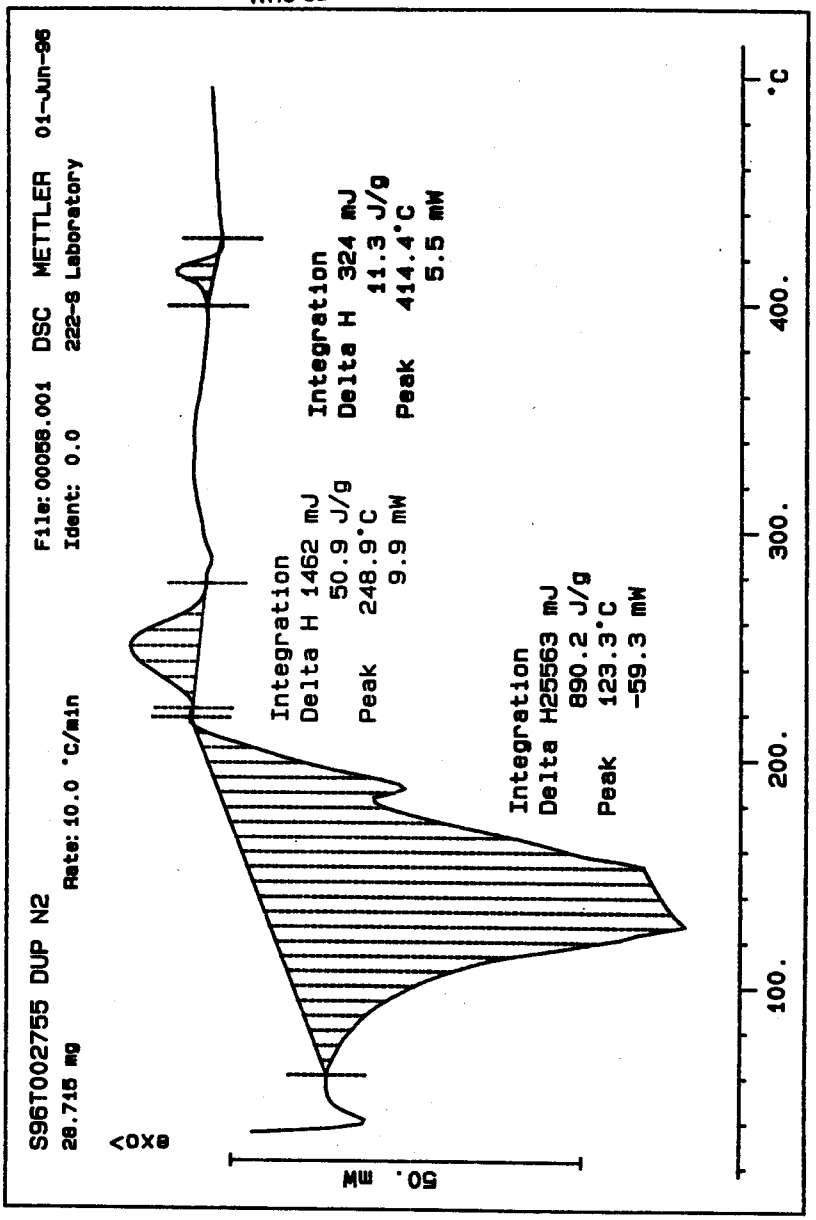
Data Entry Comments: Sample results are the sum of two exotherms.

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 109.




S96T002755 SAM N2
35.200 mg
Rate: 10.0 °C/min
File: 00056.001 DSC METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 1893 mJ
53.8 J/g
Peak 249.0°C
13.0 mW
Integration
Delta H 576 mJ
16.4 J/g
Peak 406.3°C
7.9 mW
Integration
Delta H29396 mJ
835.1 J/g
Peak 113.3°C
-57.0 mW
exo>
50. mW
100.
200.
300.
400.
°C


S96T002755 DUP N2
28.715 mg
Rate: 10.0 °C/min
File: 00058.001 DSC METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
<exo
50. mW
100.
200.
300.
400.
°C
Integration
Delta H 1462 mJ
50.9 J/g
Peak 248.9°C
9.9 mW
Integration
Delta H 324 mJ
11.3 J/g
Peak 414.4°C
5.5 mW
Integration
Delta H25563 mJ
890.2 J/g
Peak 123.3°C
-59.3 mW

LABCORE Data Entry Template for Worklist# 9459

Analyst: DcD **Instrument:** DSC0 1 **Book #** 12N14B

Method: LA-514-113 Rev/Mod C-1
102 LLA 6/2/95

Worklist Comment: U-~~108~~ DSC RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	29.0*	N/A	Joules/g
96000536	U-102	2	SAMPLE	S96T002500	0		DSC-01	SOLID	N/A	16.6		Joules/g
96000536	U-102	3	DUP	S96T002500	0		DSC-01	SOLID	16.6	15.5	N/A	Joules/g
96000536	U-102	4	SAMPLE	S96T002501	0		DSC-01	SOLID	N/A	19.0		Joules/g
96000536	U-102	5	DUP	S96T002501	0		DSC-01	SOLID	19.0	15.5	N/A	Joules/g

Final page for worklist # 9459

David S Dunham 6-4-96
Analyst Signature Date

Verified/Validated by
Blandina Valenzuela 6/12/96

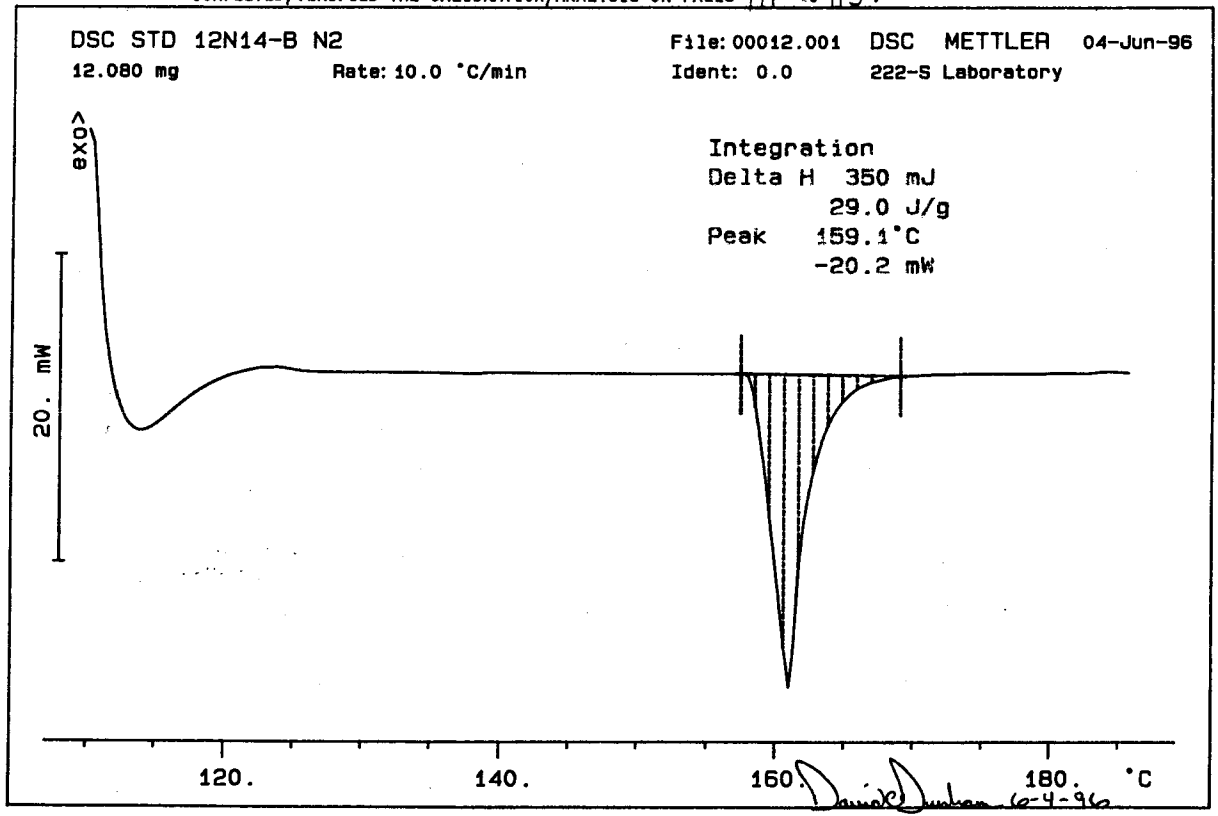
Jessica J Finley 6-5-96
Analyst Signature Date

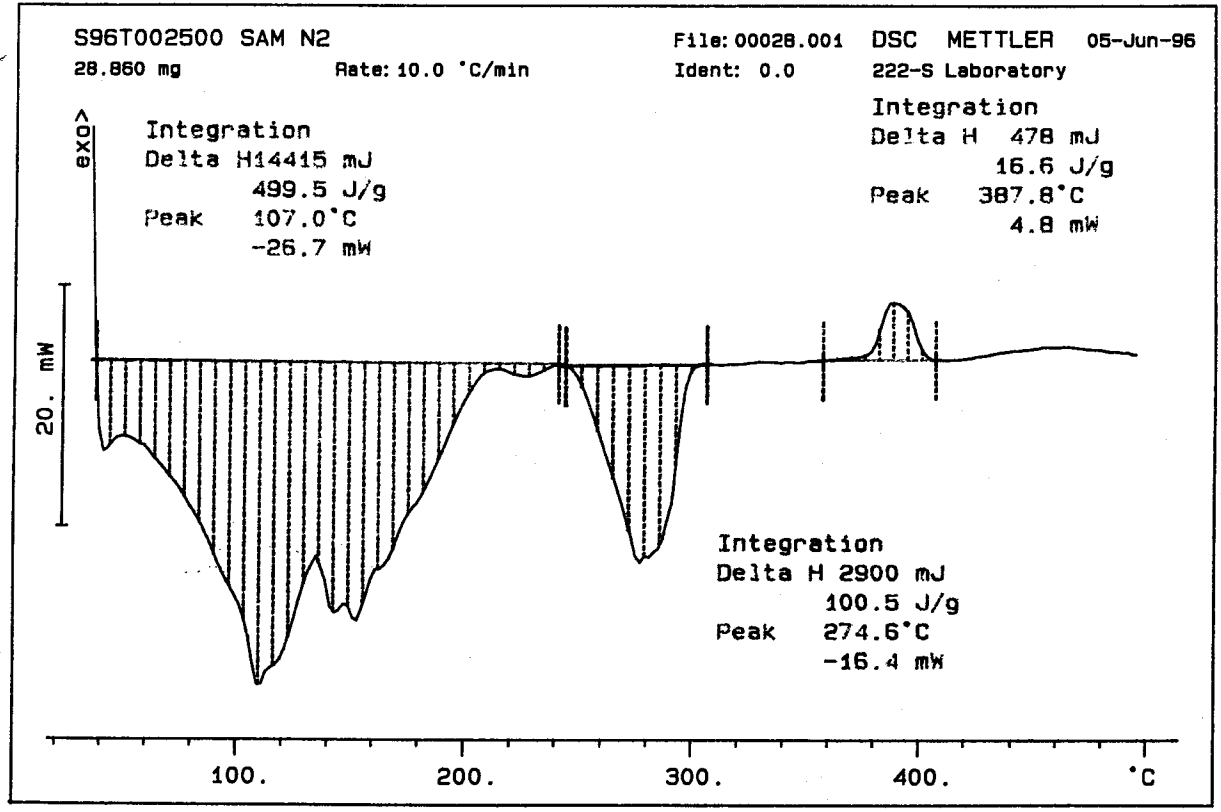
RJ Stuth 6-11-96

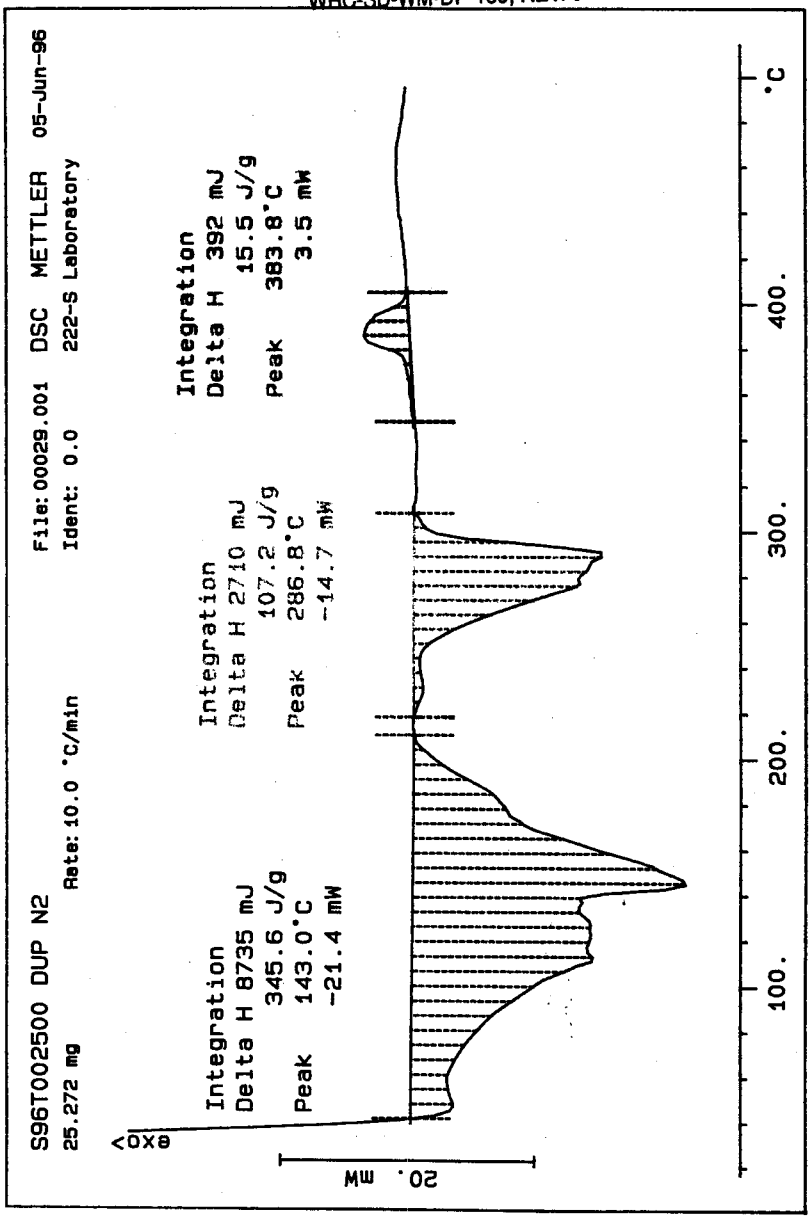
Data Entry Comments: RJStuth

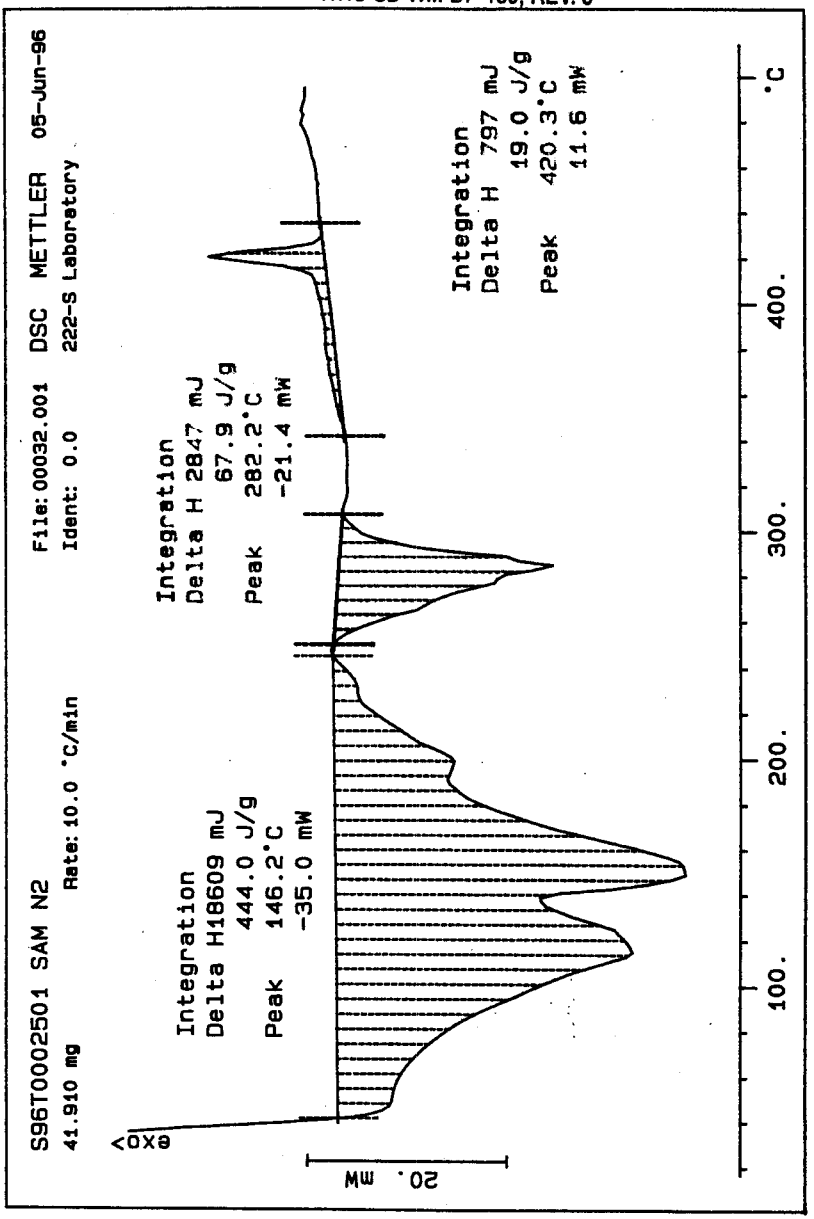
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

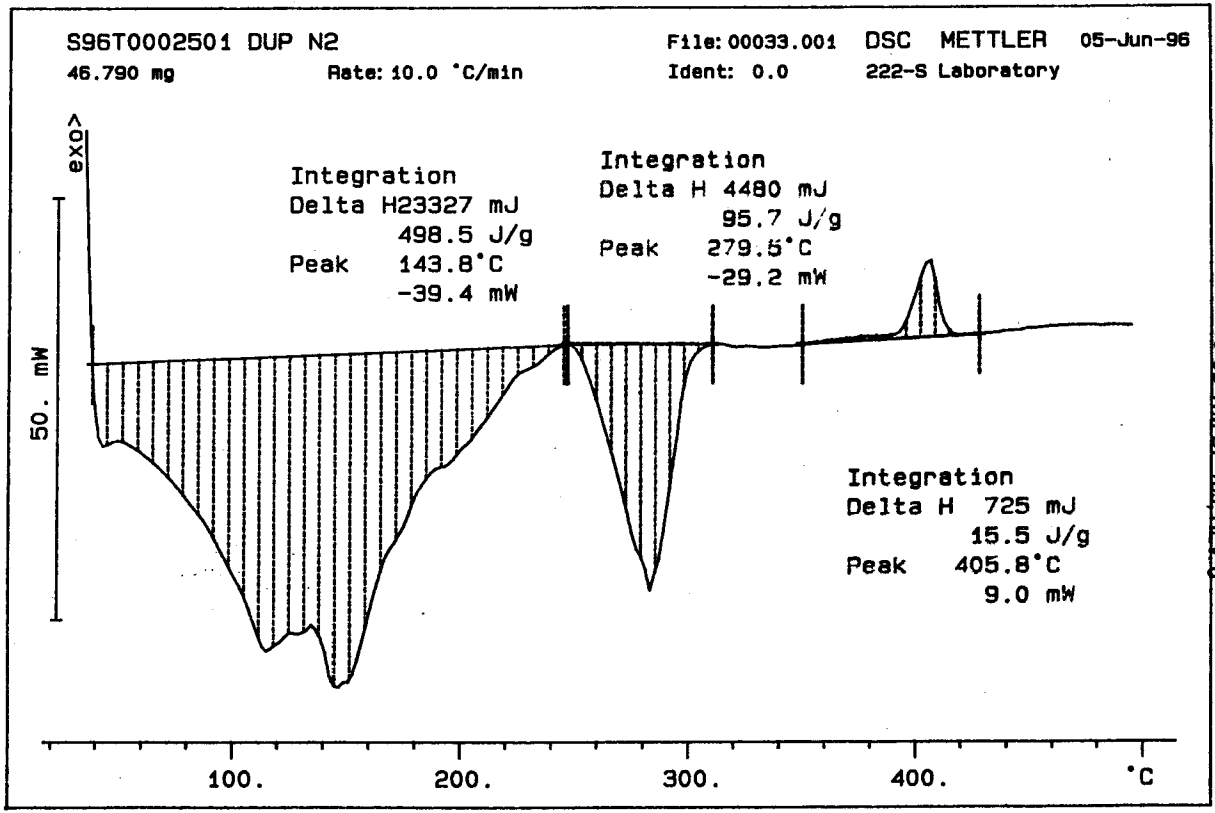
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 111 TO 115.




S96T002500 SAM N2
28.860 mg
Rate: 10.0 °C/min
File: 00028.001
Ident: 0.0
DSC METTLER 05-Jun-96
222-S Laboratory
exo
20. mW
Integration
Delta H14415 mJ
499.5 J/g
Peak 107.0°C
-26.7 mW
Integration
Delta H 478 mJ
16.6 J/g
Peak 387.8°C
4.8 mW
Integration
Delta H 2900 mJ
100.5 J/g
Peak 274.6°C
-16.4 mW
100.
200.
300.
400.
°C


S96T002500 DUP N2
25.272 mg
Rate: 10.0 °C/min
File: 00029.001 DSC METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 8735 mJ
345.6 J/g
Peak 143.0°C
-21.4 mW
Integration
Delta H 2710 mJ
107.2 J/g
Peak 286.8°C
-14.7 mW
Integration
Delta H 392 mJ
15.5 J/g
Peak 383.8°C
3.5 mW
exo
20. mW
100.
200.
300.
400.
°C


S96T0002501 SAM N2
41.910 mg
Rate: 10.0 °C/min
File: 00032.001 DSC METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H18609 mJ
444.0 J/g
Peak 146.2°C
-35.0 mW
Integration
Delta H 2847 mJ
67.9 J/g
Peak 282.2°C
-21.4 mW
Integration
Delta H 797 mJ
19.0 J/g
Peak 420.3°C
11.6 mW
exo>
20. mW
100.
200.
300.
400.
°C


S96T0002501 DUP N2
46.790 mg
Rate: 10.0 °C/min
File: 00033.001
Ident: 0.0
DSC METTLER
222-S Laboratory
05-Jun-96
exo
50. mW
Integration
Delta H23327 mJ
498.5 J/g
Peak 143.8°C
-39.4 mW
Integration
Delta H 4480 mJ
95.7 J/g
Peak 279.5°C
-29.2 mW
Integration
Delta H 725 mJ
15.5 J/g
Peak 405.8°C
9.0 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9540

Analyst: DCD **Instrument:** DSC0 1 **Book #** 12N14-B

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

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID	28.45	31.4 X	N/A	Joules/g
96000569	U-102	2	SAMPLE	S96T002549	0		DSC-01	LIQUID	N/A	111.5		Joules/g
96000569	U-102	3	DUP	S96T002549	0		DSC-01	LIQUID	111.5	146.6	N/A	Joules/g
96000569	U-102	4	SAMPLE	S96T002762	0		DSC-01	LIQUID	N/A	Ø		Joules/g
96000569	U-102	5	DUP	S96T002762	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 9540

David C Dunham 6-5-96
Analyst Signature Date

[signature] 6-5-96
Analyst Signature Date

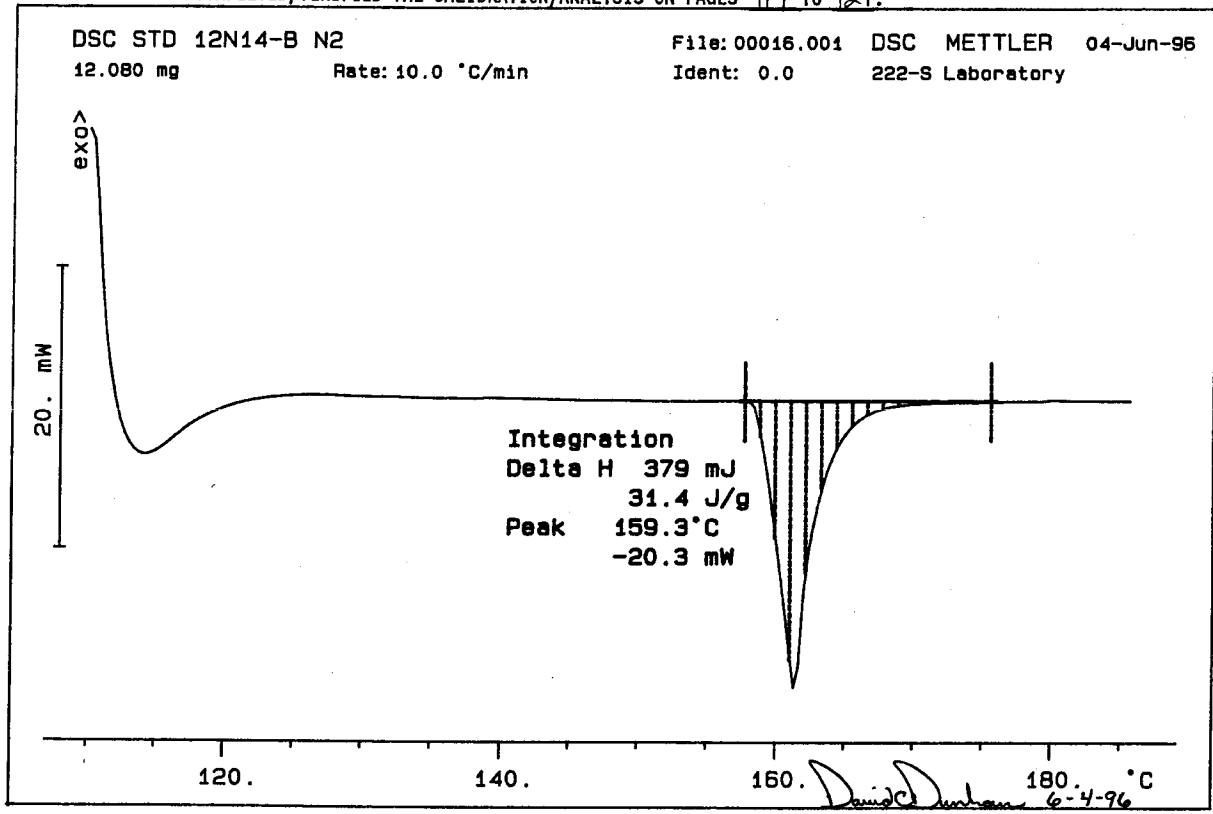
Validated by HAnastos 6-6-96

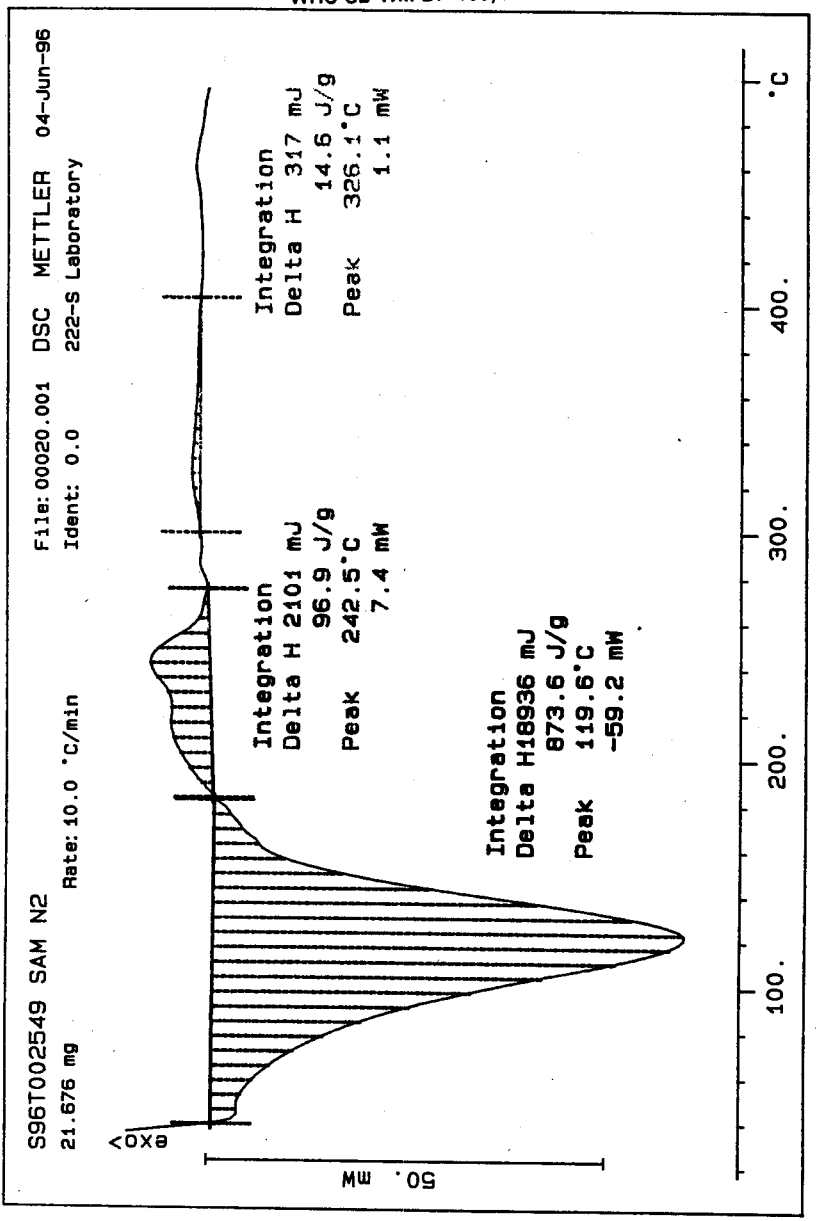
S96T002549 results are the sum of two exotherms.

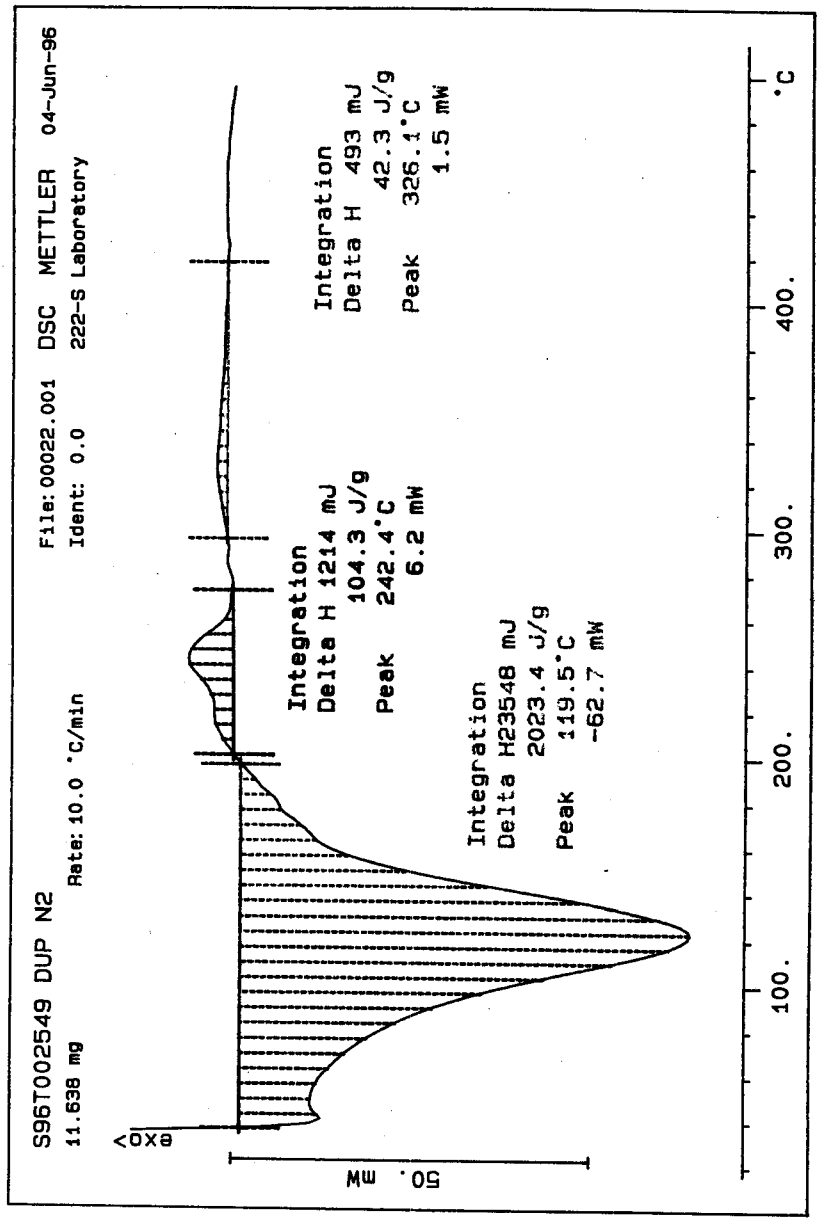
Data Entry Comments:

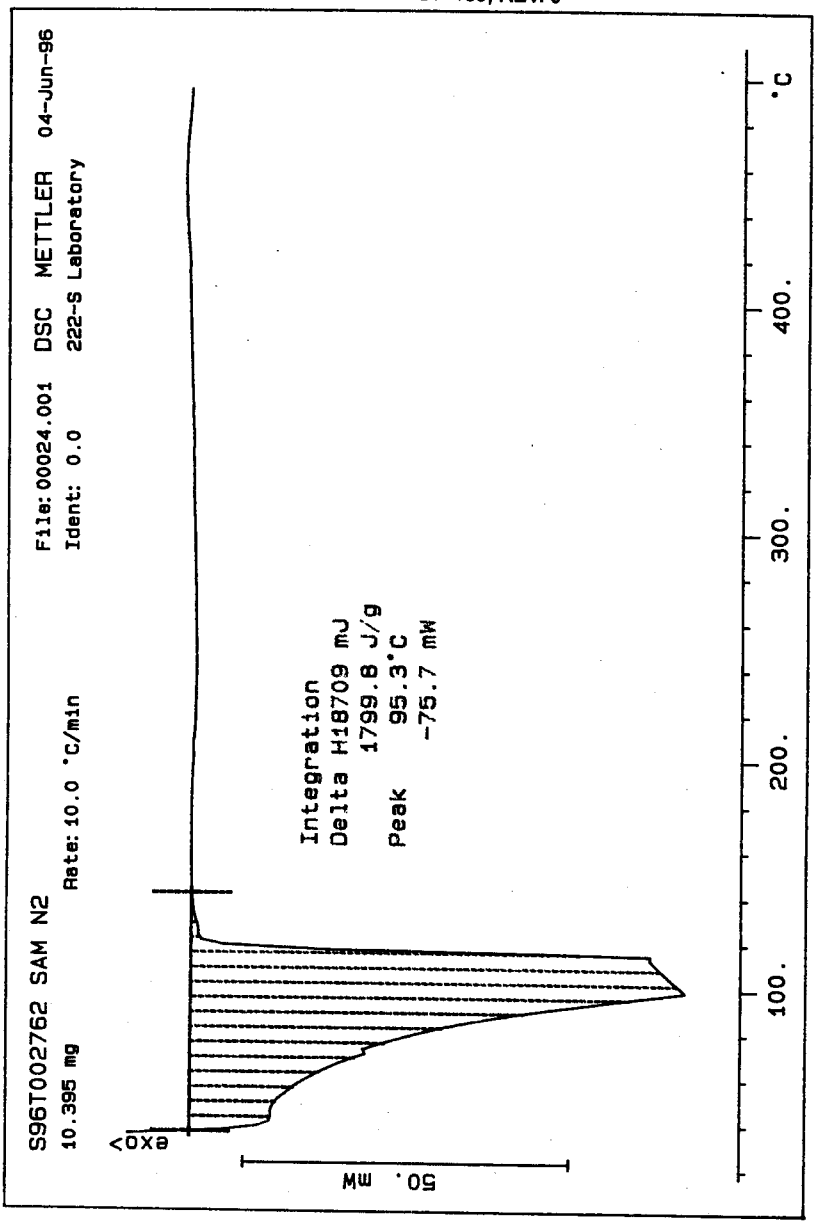
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

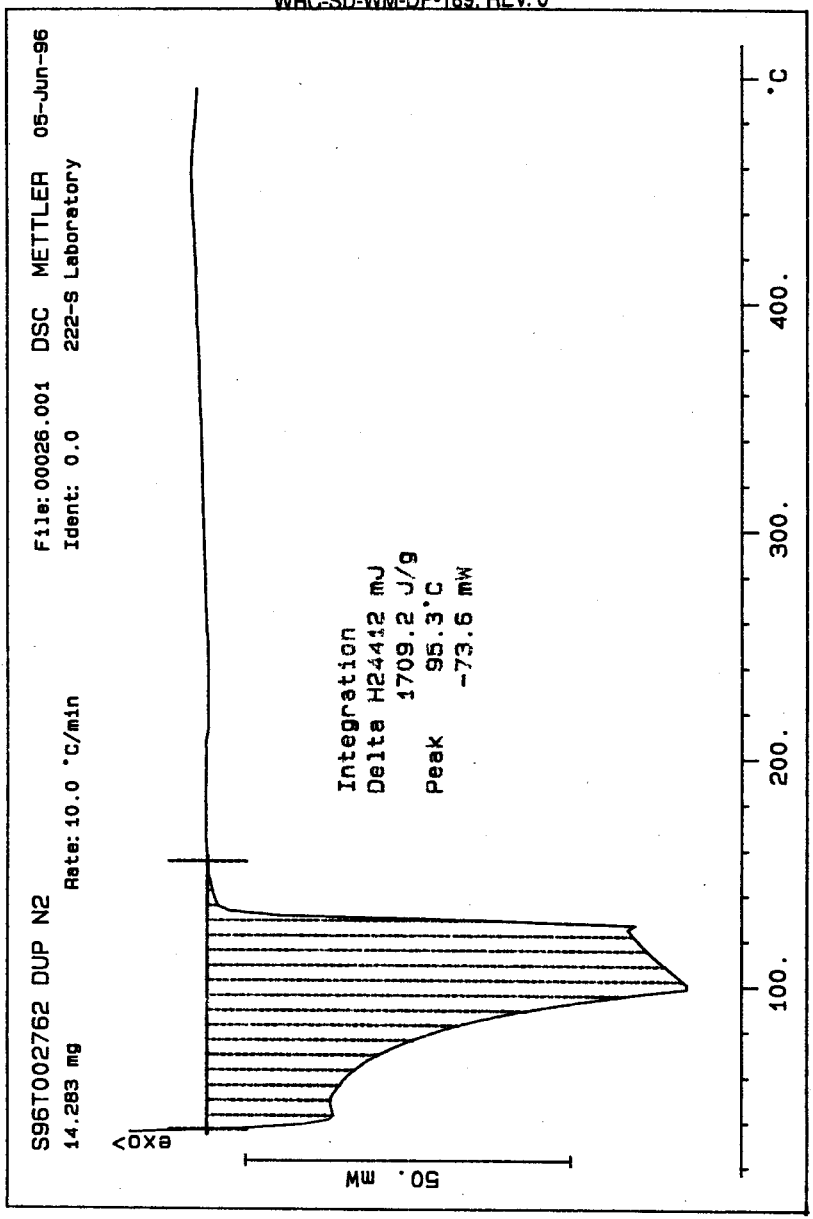
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 117 TO 121.




S96T002549 SAM N2
21.676 mg
Rate: 10.0 °C/min
File: 00020.001
Ident: 0.0
DSC METTLER 04-Jun-96
222-S Laboratory
Integration
Delta H 317 mJ
14.6 J/g
Peak 326.1°C
1.1 mW
Integration
Delta H 2101 mJ
96.9 J/g
Peak 242.5°C
7.4 mW
Integration
Delta H18936 mJ
873.6 J/g
Peak 119.6°C
-59.2 mW
exo>
50. mW
100.
200.
300.
400.
°C


S96T002549 DUP N2
11.638 mg
Rate: 10.0 °C/min
File: 00022.001 DSC METTLER 04-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 1214 mJ
104.3 J/g
Peak 242.4°C
6.2 mW
Integration
Delta H 493 mJ
42.3 J/g
Peak 326.1°C
1.5 mW
Integration
Delta H23548 mJ
2023.4 J/g
Peak 119.5°C
-62.7 mW
exo
50. mW
100.
200.
300.
400.
°C


S96T002762 SAM N2
10.395 mg
Rate: 10.0 °C/min
File: 00024.001
Ident: 0.0
DSC METTLER 04-Jun-96
222-S Laboratory
Integration
Delta H18709 mJ
1799.8 J/g
Peak 95.3°C
-75.7 mW
exo>
50. mW
100.
200.
300.
400.
°C


S96T002762 DUP N2
14.283 mg
Rate: 10.0 °C/min
File: 00026.001
Ident: 0.0
DSC METTLER 05-Jun-96
222-S Laboratory
Integration
Delta H24412 mJ
1709.2 J/g
Peak 95.3°C
-73.6 mW
exo>
50. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9541

Analyst: DcD **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	32.0	N/A	Joules/g
96000569	U-102	2	SAMPLE	S96T002632	0		DSC-01	SOLID	N/A	48.5		Joules/g
96000569	U-102	3	DUP	S96T002632	0		DSC-01	SOLID	48.5	41.9	N/A	Joules/g
96000569	U-102	4	SAMPLE	S96T002633	0		DSC-01	SOLID	N/A	69.2		Joules/g
96000569	U-102	5	DUP	S96T002633	0		DSC-01	SOLID	69.2	68.1	N/A	Joules/g

Final page for worklist # 9541

David C Dunham 6-5-96
Analyst Signature **Date**

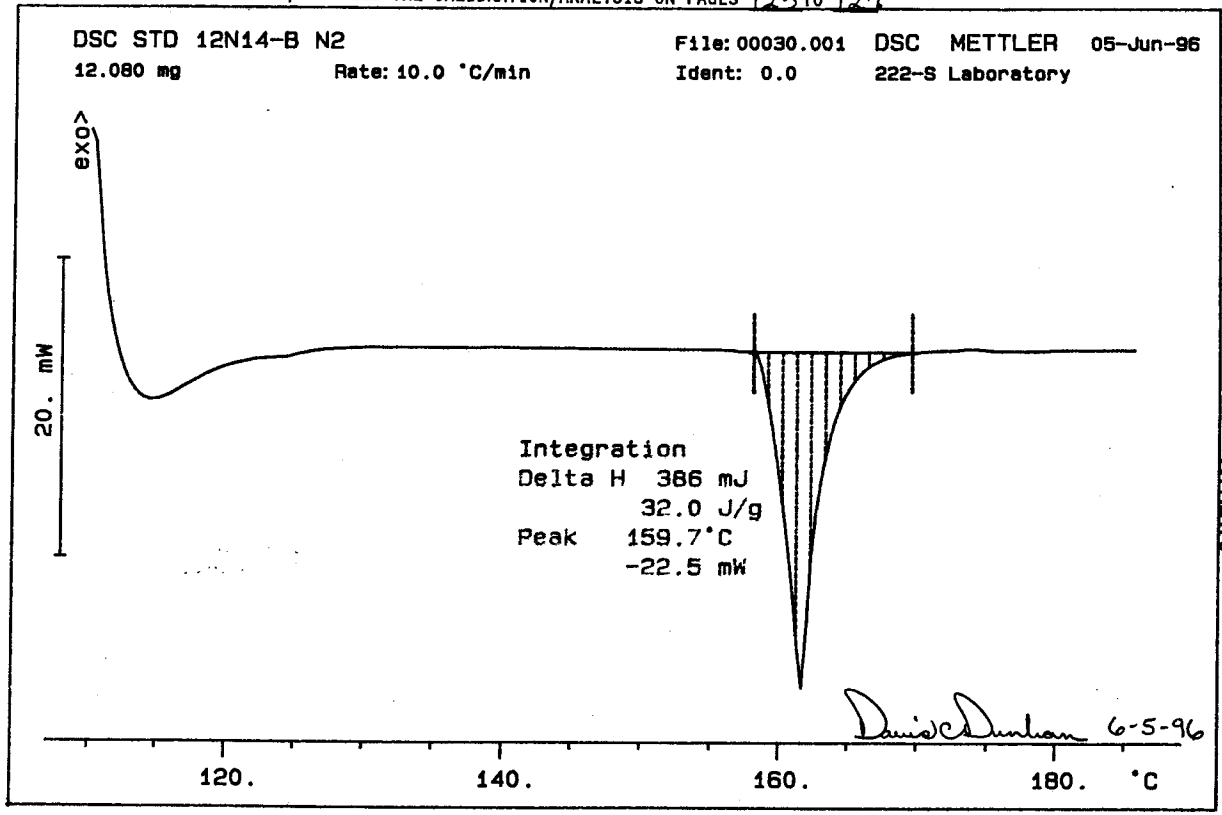
Analyst Signature 6-11-96 **Date**

Verified/Validated by
Blandina Valenzuela 6-12-96

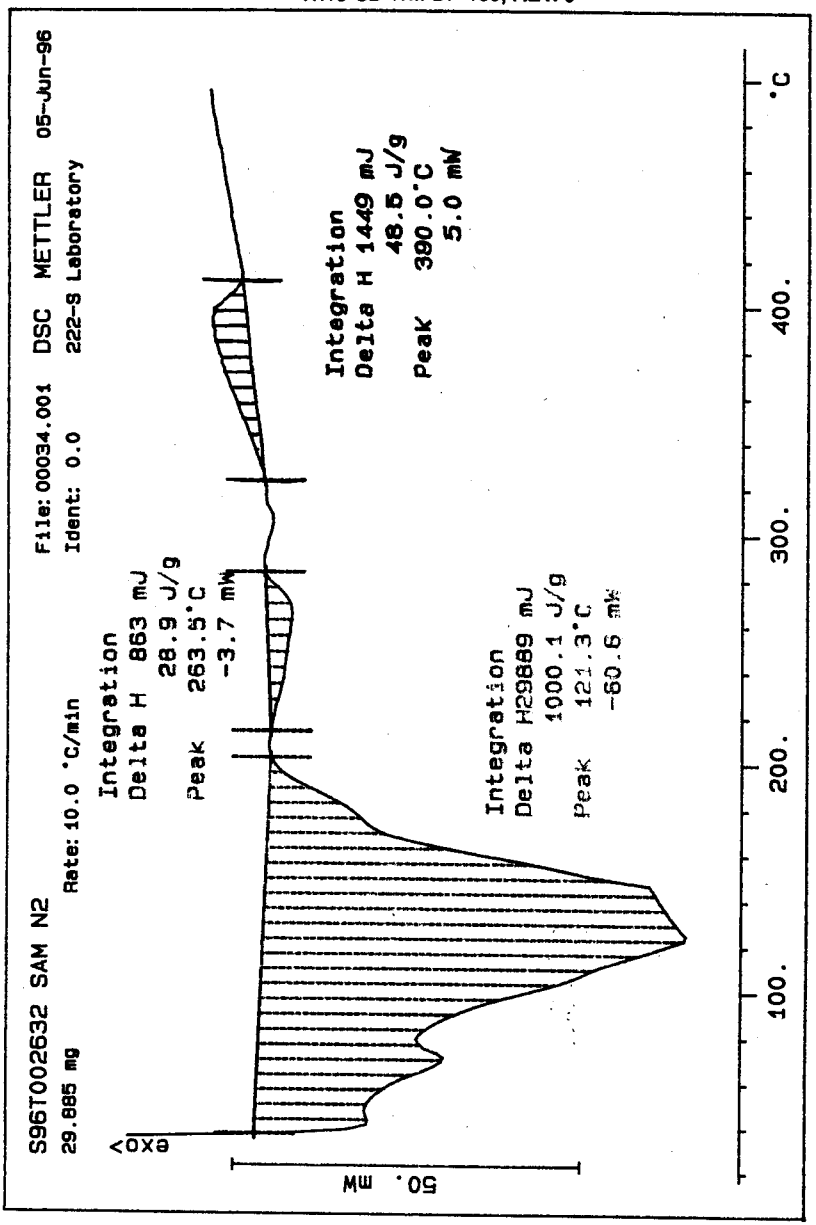
Data Entry Comments: S96T002633 results are the sum of two exotherms.

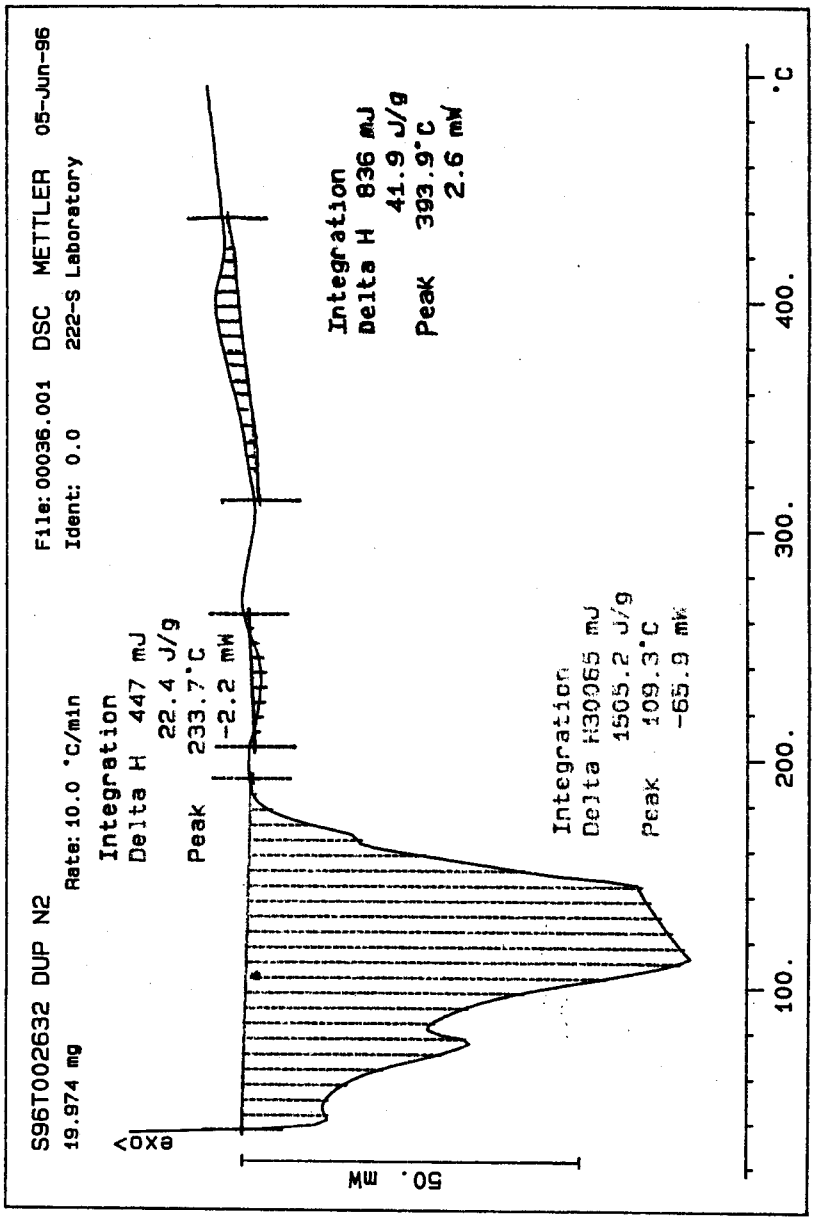
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

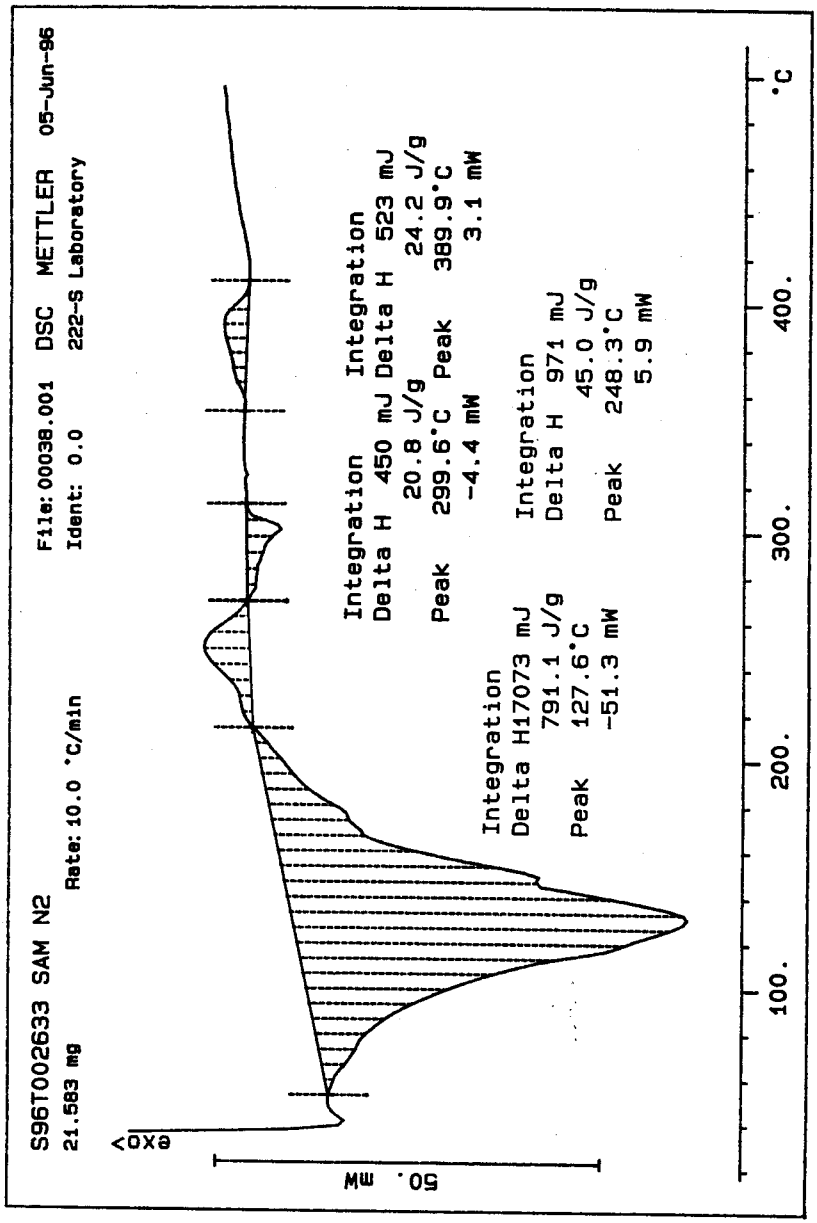
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 123 TO 127

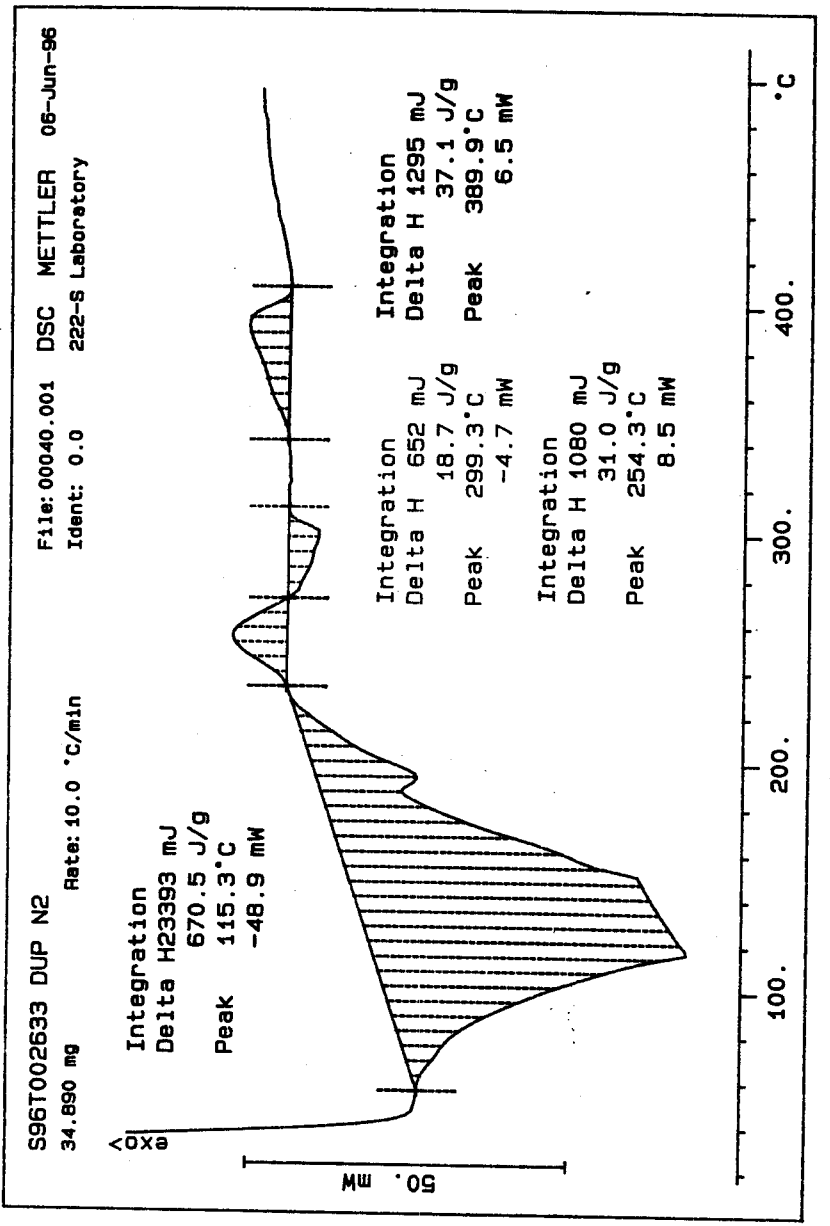


David C Dunlap 6-5-96


S96T002632 SAM N2
29.885 mg
Rate: 10.0 °C/min
File: 00034.001 DSC METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 863 mJ
28.9 J/g
Peak 263.5°C
-3.7 mW
Integration
Delta H 1449 mJ
48.5 J/g
Peak 390.0°C
5.0 mW
Integration
Delta H29889 mJ
1000.1 J/g
Peak 121.3°C
-60.6 mW
exo>
50. mW
100.
200.
300.
400.
°C


S96T002632 DUP N2
19.974 mg
Rate: 10.0 °C/min
File: 00036.001 DSC METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 447 mJ
22.4 J/g
Peak 233.7°C
-2.2 mW
Integration
Delta H 836 mJ
41.9 J/g
Peak 393.9°C
2.6 mW
Integration
Delta H30065 mJ
1505.2 J/g
Peak 109.3°C
-65.9 mW
exo^
50. mW
100.
200.
300.
400.
°C


S96T002633 SAM N2
21.583 mg
Rate: 10.0 °C/min
File: 00038.001 DSC METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
exo^
50. mW
100.
200.
300.
400.
°C
Integration
Delta H 450 mJ
20.8 J/g
Peak 299.6°C
-4.4 mW
Integration
Delta H 523 mJ
24.2 J/g
Peak 389.9°C
3.1 mW
Integration
Delta H17073 mJ
791.1 J/g
Peak 127.6°C
-51.3 mW
Integration
Delta H 971 mJ
45.0 J/g
Peak 248.3°C
5.9 mW


S96T002633 DUP N2
34.890 mg
Rate: 10.0 °C/min
File: 00040.001 DSC METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
exo
50. mW
100.
200.
300.
400.
°C
Integration
Delta H23393 mJ
670.5 J/g
Peak 115.3°C
-48.9 mW
Integration
Delta H 652 mJ
18.7 J/g
Peak 299.3°C
-4.7 mW
Integration
Delta H 1080 mJ
31.0 J/g
Peak 254.3°C
8.5 mW
Integration
Delta H 1295 mJ
37.1 J/g
Peak 389.9°C
6.5 mW

LABCORE Data Entry Template for Worklist# 9543

Analyst: DCD **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	26.45*	N/A	Joules/g
96000569	U-102	2	SAMPLE	S96T002636	0		DSC-03	SOLID	N/A	18.2		Joules/g
96000569	U-102	3	DUP	S96T002636	0		DSC-03	SOLID	18.2	22.2	N/A	Joules/g
96000569	U-102	4	SAMPLE	S96T002646	0		DSC-03	SOLID	N/A	39.4		Joules/g
96000569	U-102	5	DUP	S96T002646	0		DSC-03	SOLID	39.4	1.62	N/A	Joules/g

Final page for worklist # 9543

See attached for signatures
Analyst Signature Date 6/11/96

Analyst Signature Date 6-12-96

Verified/Validated by BDR
Blandina Valenzuela 6/13/96

Data Entry Comments: S96T002646 did not have a triplicate because it was not close to the notification limit.

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# 9543

Analyst: DCD **Instrument:** DSC0 _____ **Book #** 12N14B

Method: LA-514-113 Rev/Mod _____

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	_____	_____	N/A	Joules/g
96000569	U-102	2 SAMPLE	S96T002636	0		DSC-01	SOLID	N/A	_____	_____	Joules/g
96000569	U-102	3 DUP	S96T002636	0		DSC-01	SOLID	_____	_____	N/A	Joules/g
96000569	U-102	4 SAMPLE	S96T002646	0		DSC-01	SOLID	N/A	_____	_____	Joules/g
96000569	U-102	5 DUP	S96T002646	0		DSC-01	SOLID	_____	_____	N/A	Joules/g

Final page for worklist # 9543

David C Duber 6-6-96
Analyst Signature **Date**

_____
Analyst Signature **Date**

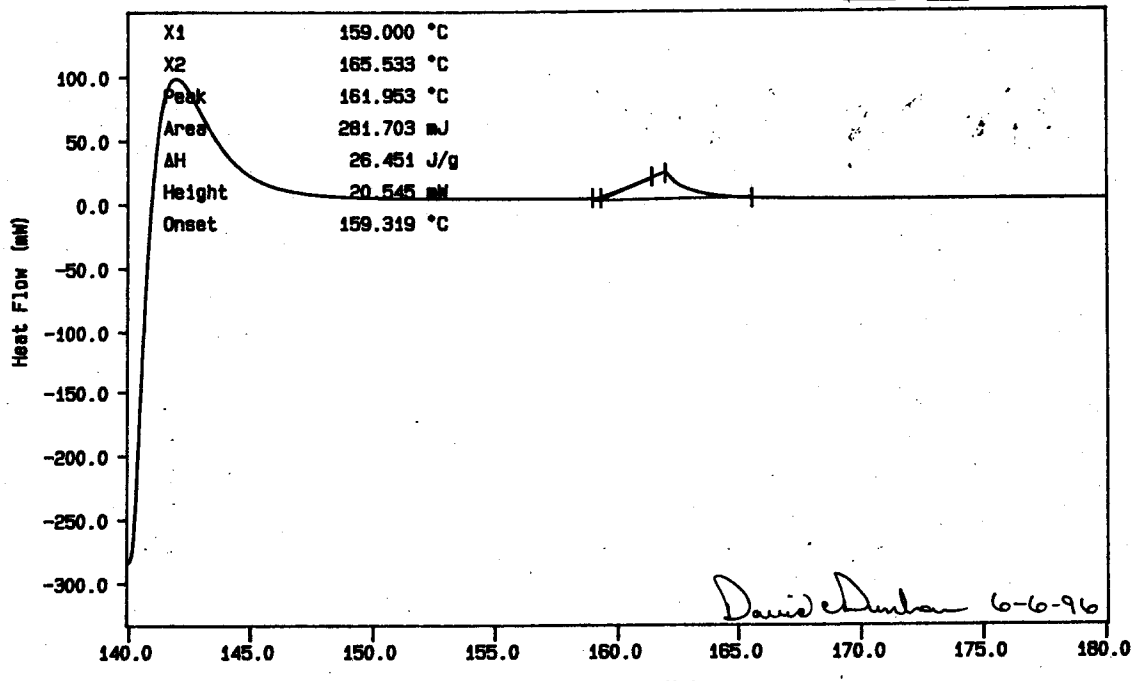
DSC-03 instrument was used. 6/11/96 BDO Valenzuela

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: DSC
File info: IND060601 Thu Jun 6 20:22:38 1996
Sample Weight: 10.650 mg
12N14-B INDIUM AT 10C\MIN

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 130 TO 134.

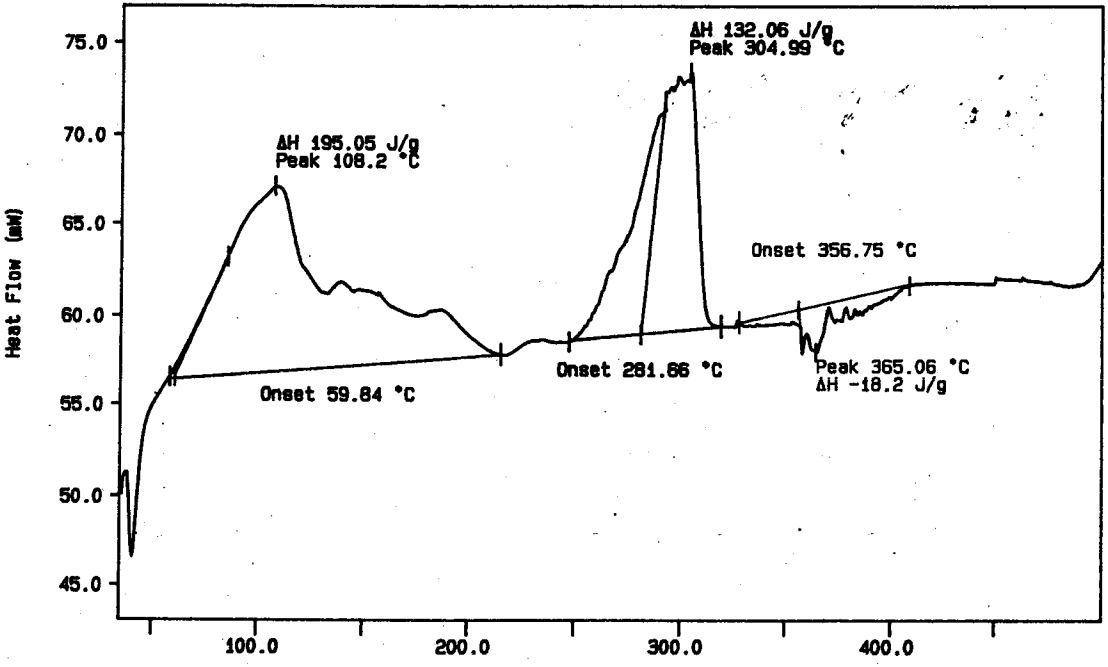


N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

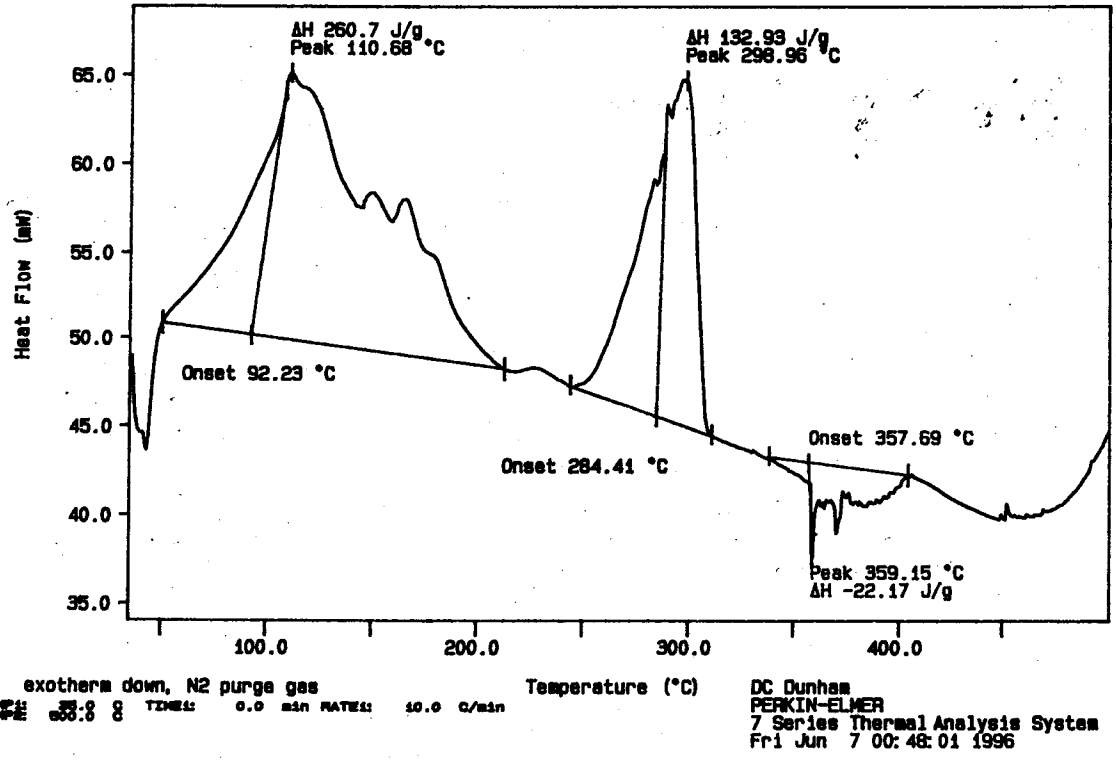
DC Dunham
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 6 20:55:17 1996

130

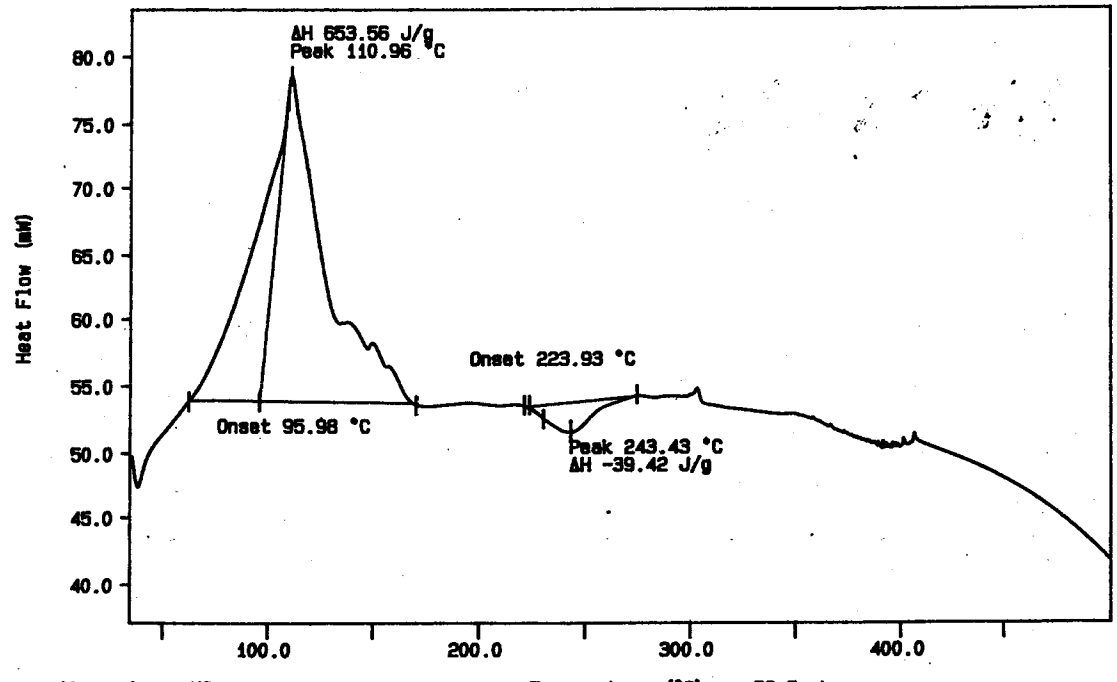
Curve 1: DSC
File info: SAM060603 Thu Jun 6 18:49:35 1996
Sample Weight: 20.570 mg
S96T0022636 SAM



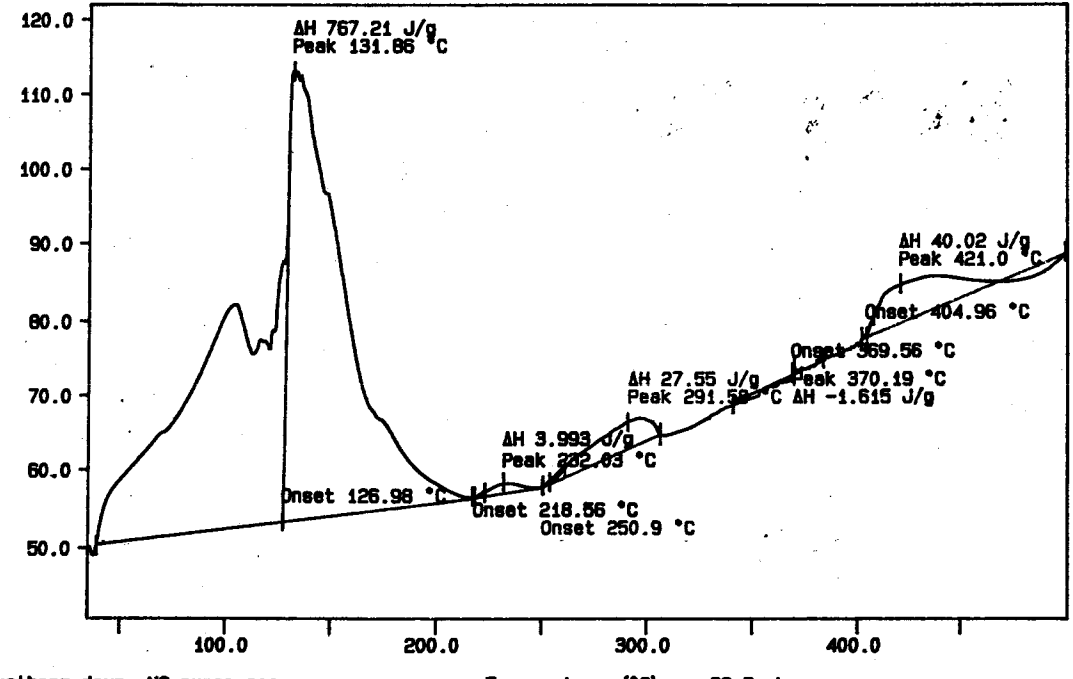
Curve 1: DSC
File info: SAM060604 Thu Jun 6 23:02:14 1996
Sample Weight: 25.530 mg
S96T002636 DUP



Curve 1: DSC
File info: SAM060605 Fri Jun 7 01:21:26 1996
Sample Weight: 8.520 mg
S96T002646 SAM



Curve 1: DSC
File info: SAM060606 Fri Jun 7 03:51:17 1996
Sample Weight: 27.240 mg
S96T002646 DUP



LABCORE Data Entry Template for Worklist# 9544

Analyst: DcD **Instrument:** DSC0 1 **Book #** 12N148

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

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	31.9 *	N/A	Joules/g
96000569	U-102	2	SAMPLE	S96T002647	0		DSC-01	SOLID	N/A	18.3		Joules/g
96000569	U-102	3	DUP	S96T002647	0		DSC-01	SOLID	18.3	29.6	N/A	Joules/g
96000569	U-102	4	SAMPLE	S96T002775	0		DSC-01	SOLID	N/A	35.1		Joules/g
96000569	U-102	5	DUP	S96T002775	0		DSC-01	SOLID	35.1	36.0	N/A	Joules/g

Final page for worklist # 9544

David C Duncan 6-6-96
Analyst Signature Date

R Hall 6-11-96
Analyst Signature Date

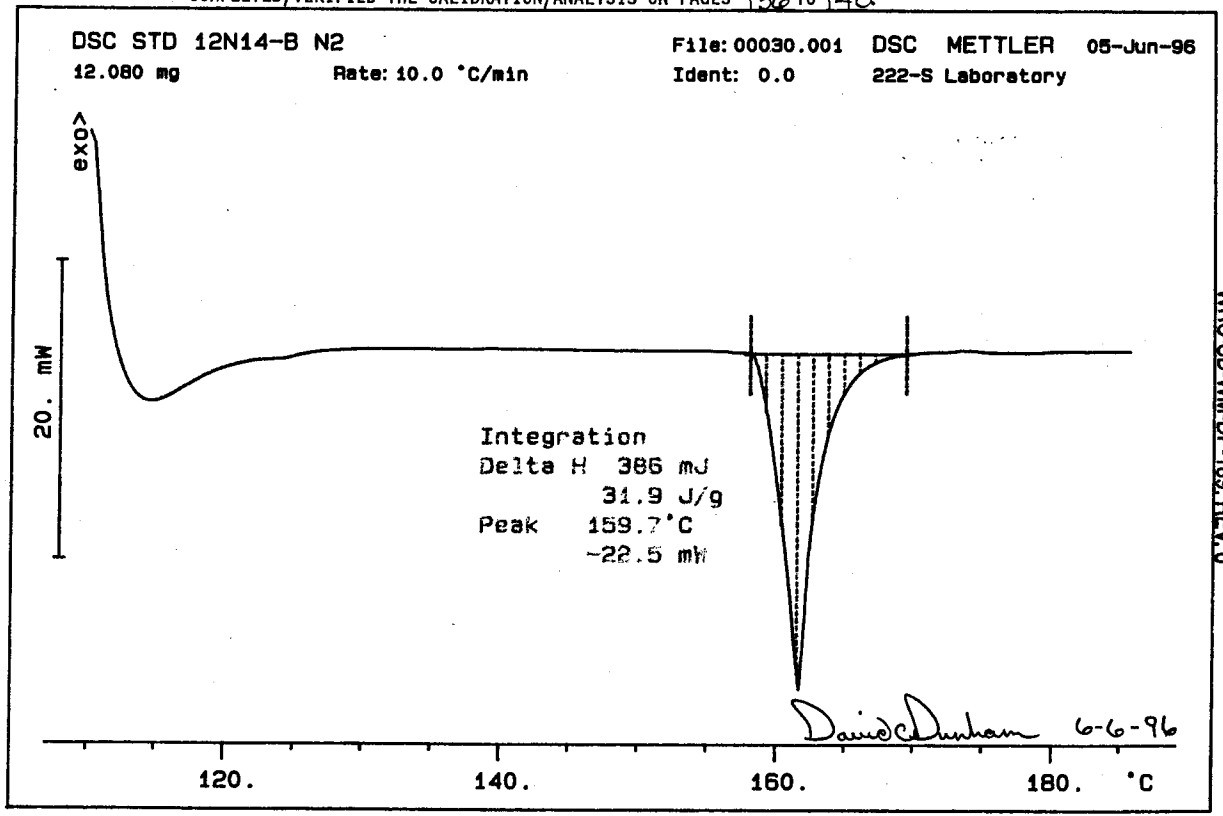
Verified/Validated by
Blandina Valenzuela 6-12-96

S96T002647 produced an endotherm at approximately 295.6°C this peak is probably indicative of aluminum Ø Hydroxide decomposition reaction.

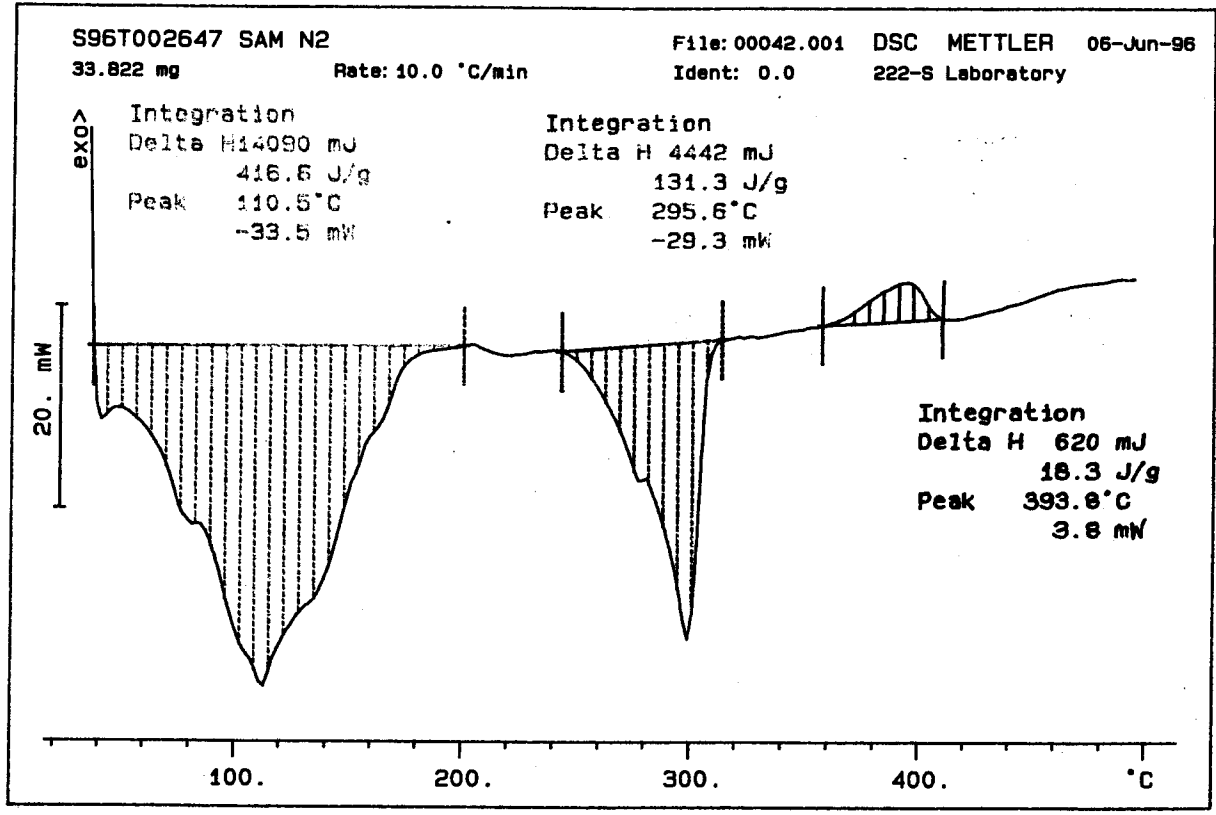
Data Entry Comments:

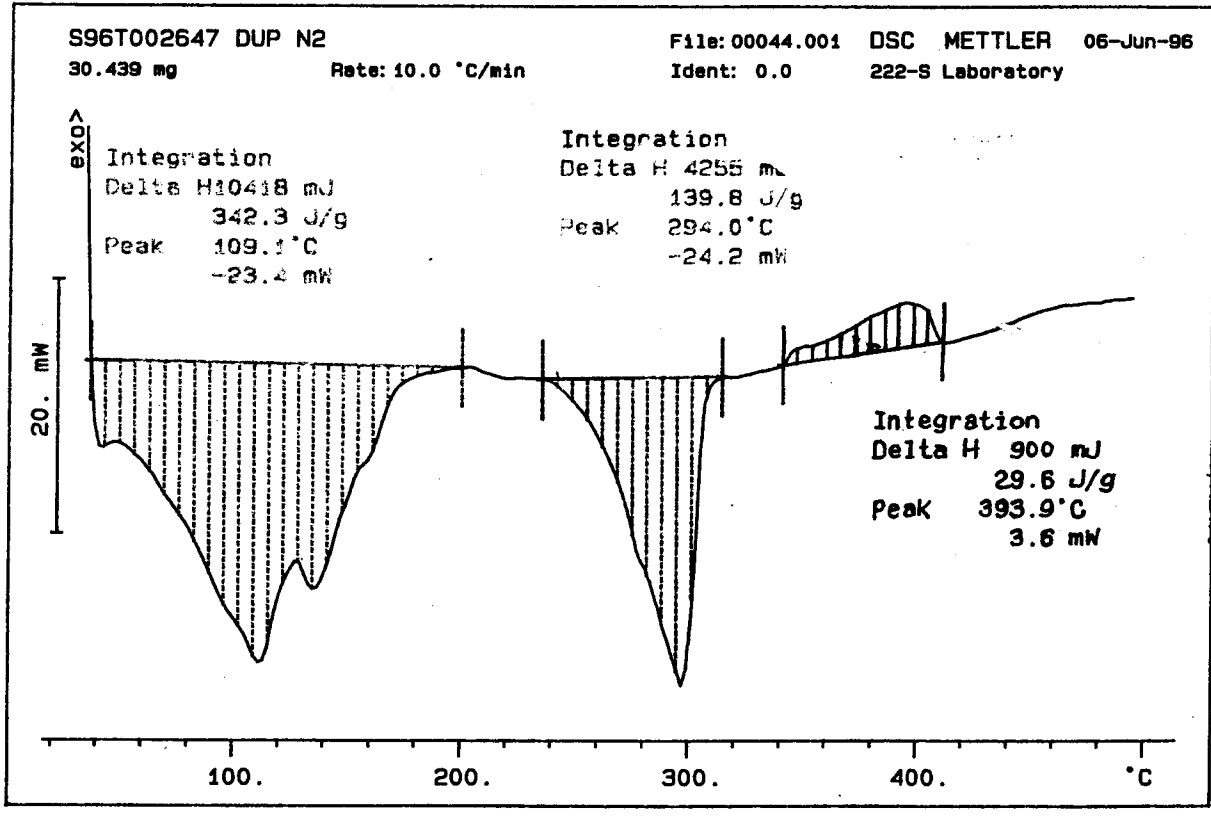
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

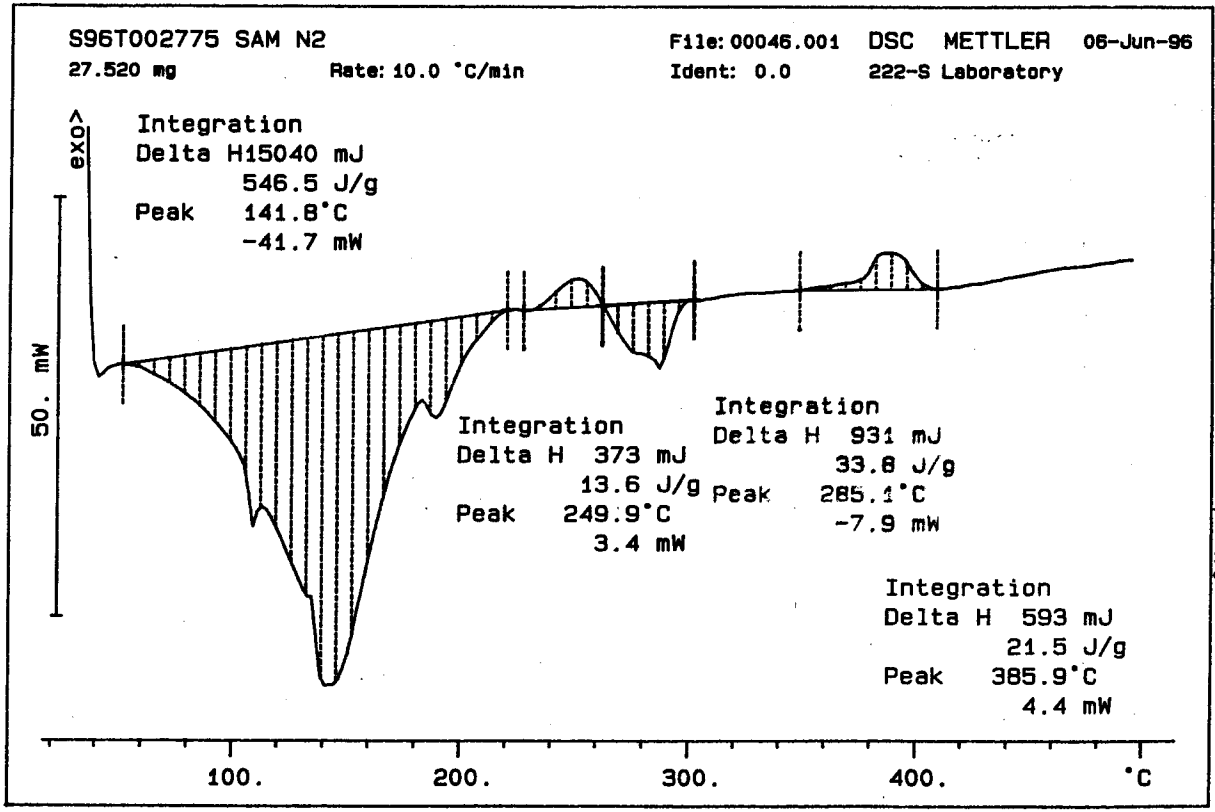
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 136 TO 140

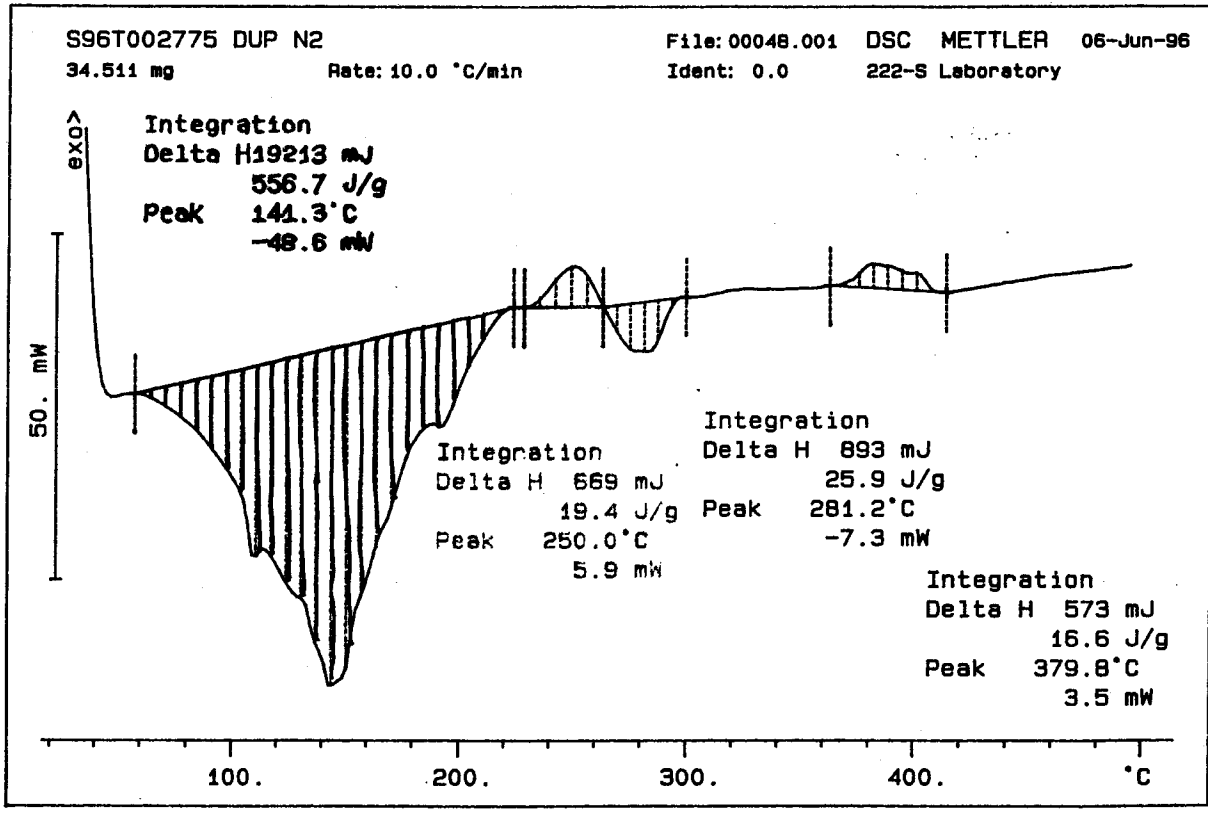


David C Dunham 6-6-96


S96T002647 SAM N2
33.822 mg
Rate: 10.0 °C/min
File: 00042.001
Ident: 0.0
DSC METTLER
222-S Laboratory
06-Jun-96
exo>
20. mW
Integration
Delta H14090 mJ
416.6 J/g
Peak 110.5°C
-33.5 mW
Integration
Delta H 4442 mJ
131.3 J/g
Peak 295.6°C
-29.3 mW
Integration
Delta H 620 mJ
18.3 J/g
Peak 393.8°C
3.8 mW
100.
200.
300.
400.
°C


S96T002647 DUP N2
30.439 mg
Rate: 10.0 °C/min
File: 00044.001
Ident: 0.0
DSC METTLER
222-S Laboratory
06-Jun-96
exo
Integration
Delta H10418 mJ
342.3 J/g
Peak 109.1°C
-23.4 mW
Integration
Delta H 4255 mJ
139.8 J/g
Peak 294.0°C
-24.2 mW
Integration
Delta H 900 mJ
29.6 J/g
Peak 393.9°C
3.6 mW
20. mW
100.
200.
300.
400.
°C


S96T002775 SAM N2
27.520 mg
Rate: 10.0 °C/min
File: 00046.001
Ident: 0.0
DSC METTLER
222-S Laboratory
06-Jun-96
exo>
50. mW
Integration
Delta H15040 mJ
546.5 J/g
Peak 141.8°C
-41.7 mW
Integration
Delta H 373 mJ
13.6 J/g
Peak 249.9°C
3.4 mW
Integration
Delta H 931 mJ
33.8 J/g
Peak 285.1°C
-7.9 mW
Integration
Delta H 593 mJ
21.5 J/g
Peak 385.9°C
4.4 mW
100.
200.
300.
400.
°C


S96T002775 DUP N2
34.511 mg
Rate: 10.0 °C/min
File: 00048.001
Ident: 0.0
DSC METTLER
222-S Laboratory
06-Jun-96
exo
50. mW
Integration
Delta H19213 mJ
556.7 J/g
Peak 141.3°C
-48.6 mW
Integration
Delta H 669 mJ
19.4 J/g
Peak 250.0°C
5.9 mW
Integration
Delta H 893 mJ
25.9 J/g
Peak 281.2°C
-7.3 mW
Integration
Delta H 573 mJ
16.6 J/g
Peak 379.8°C
3.5 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9545

Analyst: DCD **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	32.7	N/A	Joules/g
96000569	U-102	2	SAMPLE	S96T002776	0		DSC-01	SOLID	N/A	29.8		Joules/g
96000569	U-102	3	DUP	S96T002776	0		DSC-01	SOLID	29.8	341.7	N/A	Joules/g
96000569	U-102	4	SAMPLE	S96T002777	0		DSC-01	SOLID	N/A	87.6		Joules/g
96000569	U-102	5	DUP	S96T002777	0		DSC-01	SOLID	87.6	99.0	N/A	Joules/g

Final page for worklist # 9545

David C Duncan 6-6-96
Analyst Signature Date

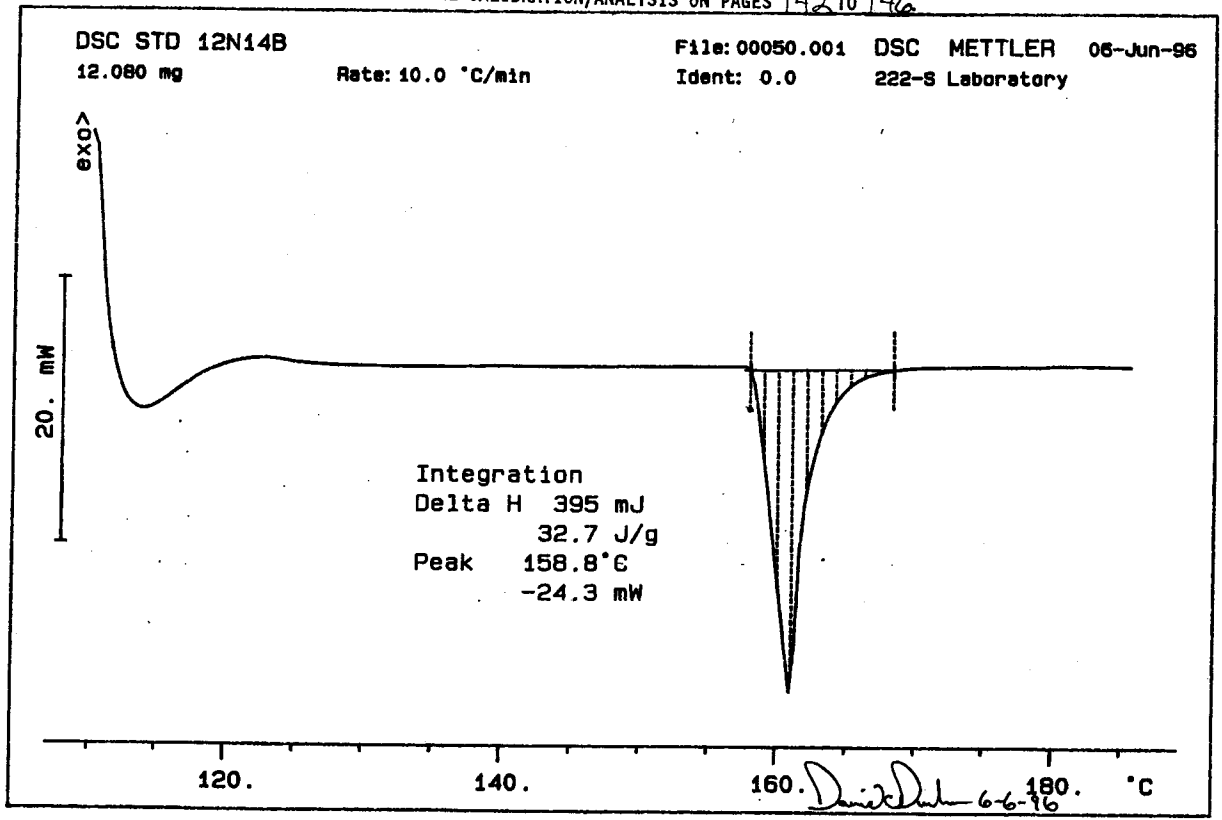
[signature] 6-17-96
Analyst Signature Date

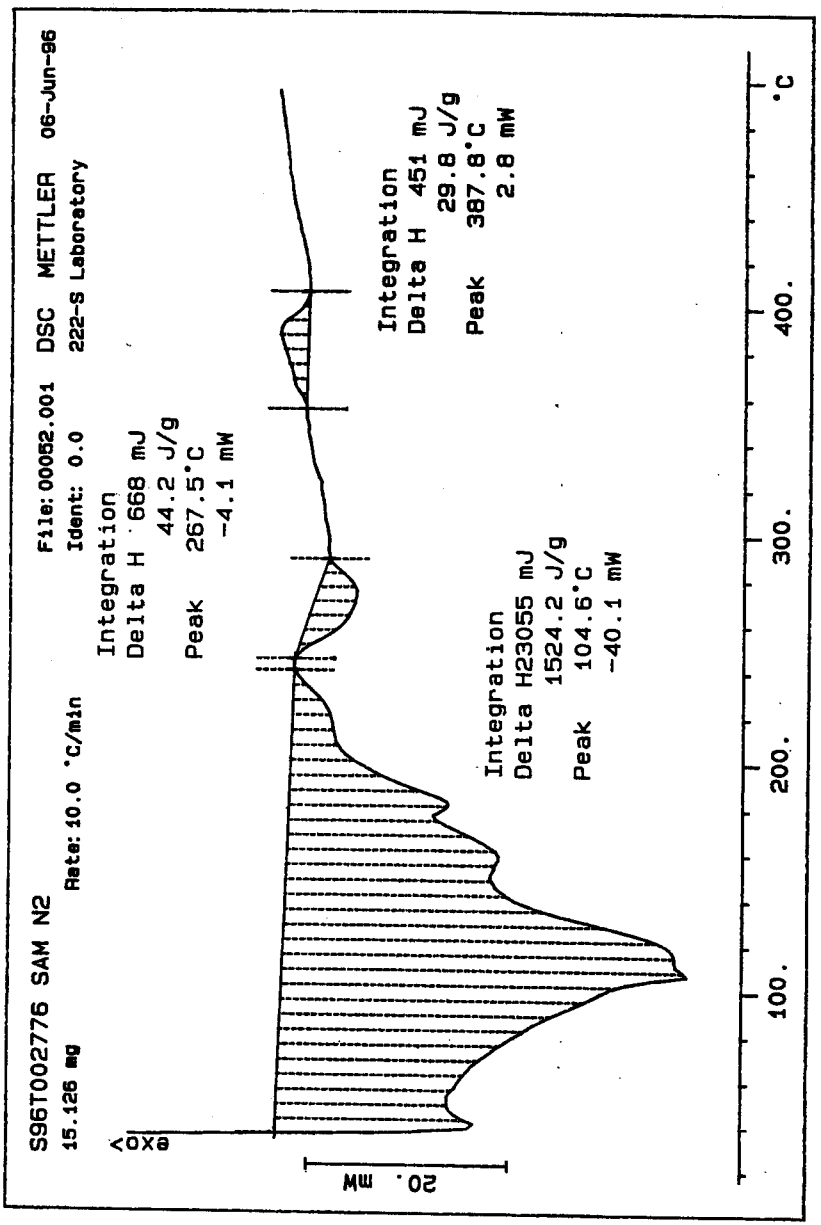
Validated by H Krasta 6-19-96

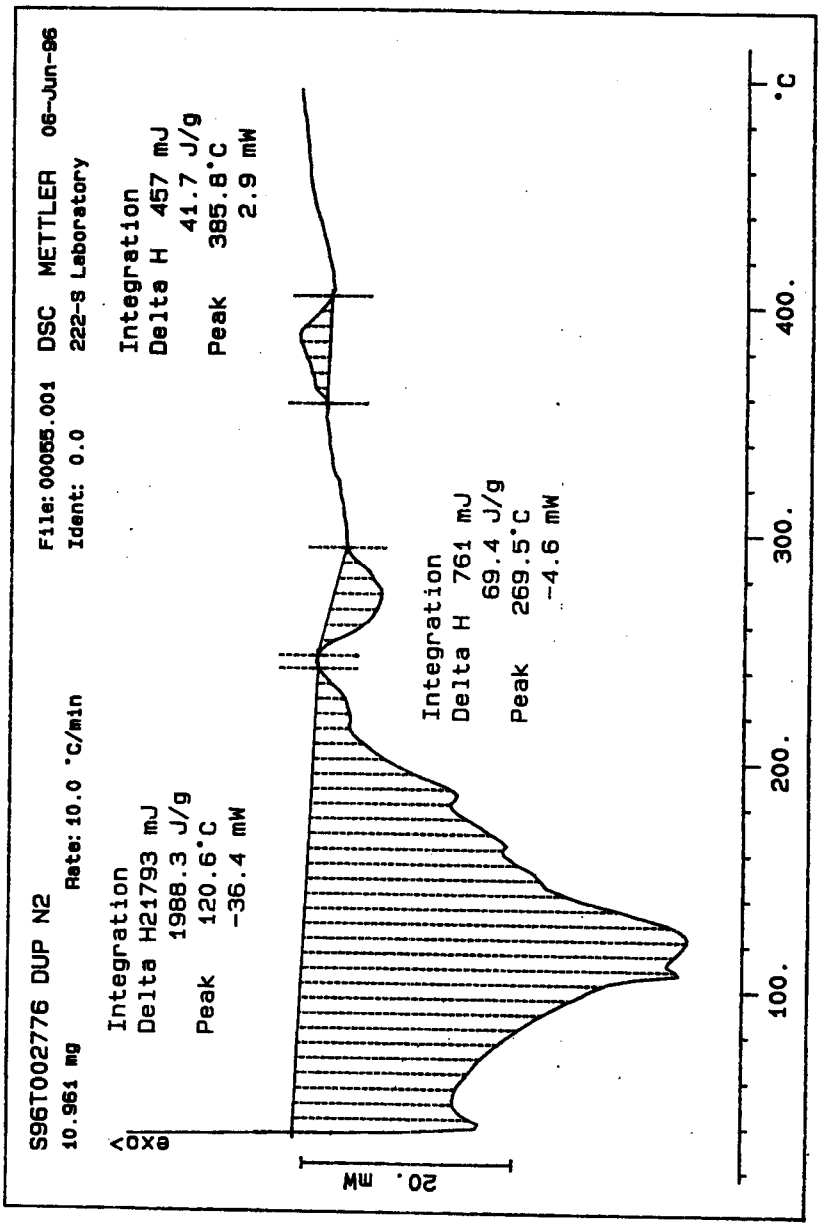
Data Entry Comments:

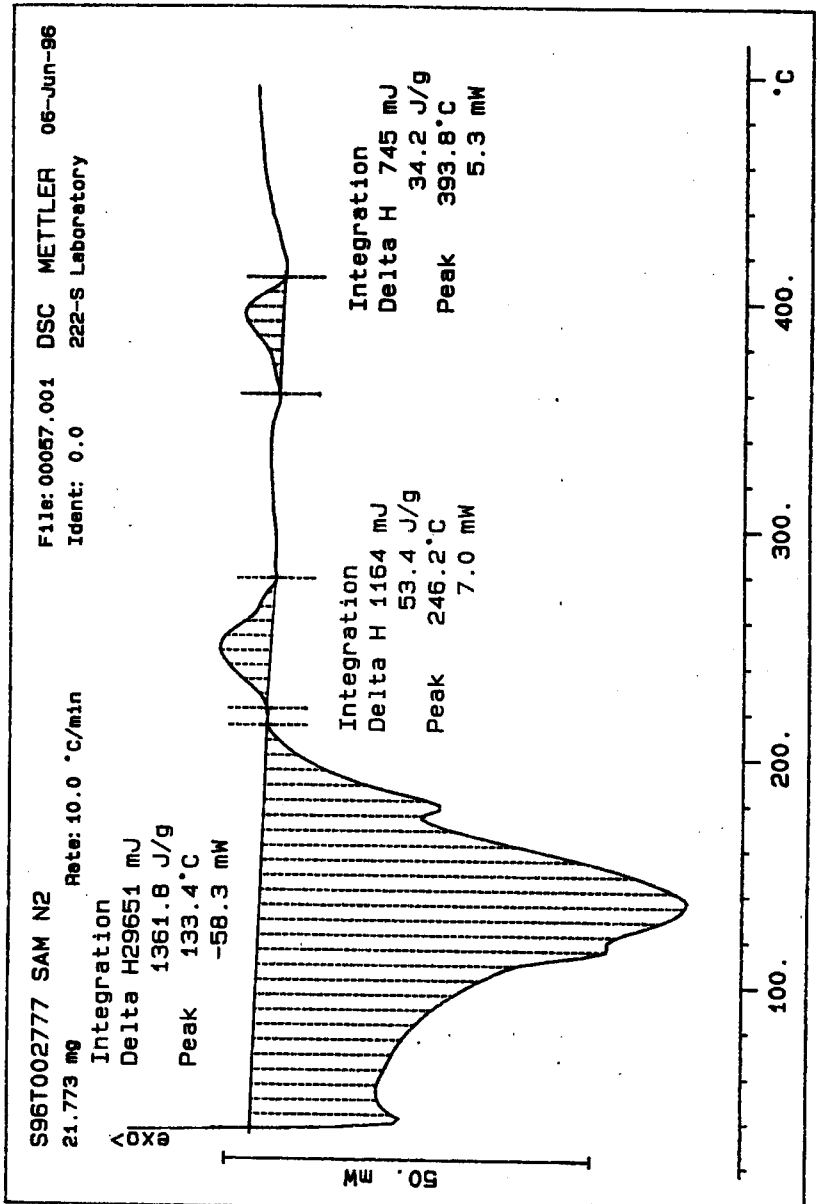
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

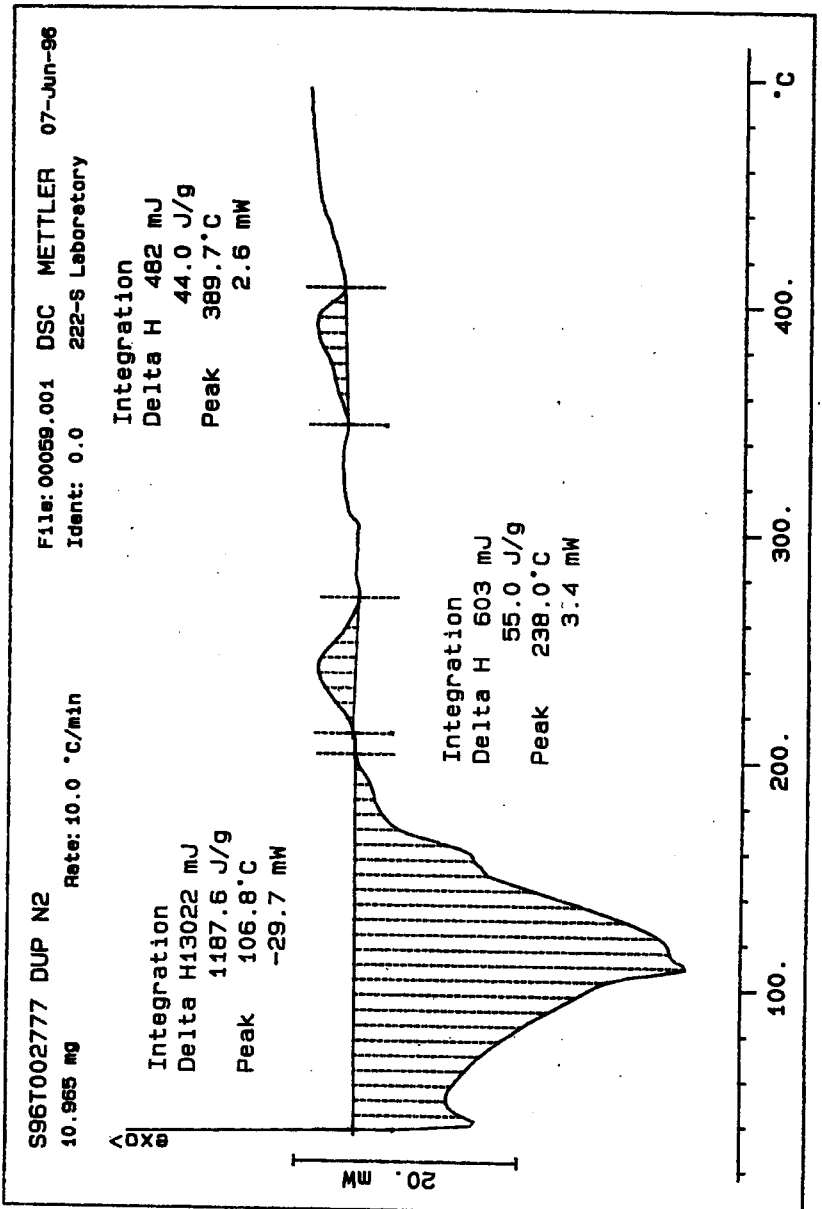
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 142 TO 146




S96T002776 SAM N2
15.126 mg
Rate: 10.0 °C/min
File: 00052.001
Ident: 0.0
DSC METTLER 06-Jun-96
222-S Laboratory
Integration
Delta H 668 mJ
44.2 J/g
Peak 267.5°C
-4.1 mW
Integration
Delta H23055 mJ
1524.2 J/g
Peak 104.6°C
-40.1 mW
Integration
Delta H 451 mJ
29.8 J/g
Peak 387.8°C
2.8 mW
exo
20. mW
100.
200.
300.
400.
°C


S96T002776 DUP N2
10.961 mg
Rate: 10.0 °C/min
File: 00055.001
Ident: 0.0
DSC METTLER 06-Jun-96
222-S Laboratory
Integration
Delta H 457 mJ
41.7 J/g
Peak 385.8°C
2.9 mW
Integration
Delta H21793 mJ
1988.3 J/g
Peak 120.6°C
-36.4 mW
Integration
Delta H 761 mJ
69.4 J/g
Peak 269.5°C
-4.6 mW
exo>
20. mW
100.
200.
300.
400.
°C


S96T002777 SAM N2
21.773 mg
Rate: 10.0 °C/min
File: 00057.001 DSC METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H29651 mJ
1361.8 J/g
Peak 133.4°C
-58.3 mW
Integration
Delta H 1164 mJ
53.4 J/g
Peak 246.2°C
7.0 mW
Integration
Delta H 745 mJ
34.2 J/g
Peak 393.8°C
5.3 mW
exo
50. mW
100.
200.
300.
400.
°C


S96T002777 DUP N2
10.965 mg
Rate: 10.0 °C/min
File: 00059.001 DSC METTLER 07-Jun-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 482 mJ
44.0 J/g
Peak 389.7°C
2.6 mW
Integration
Delta H13022 mJ
1187.6 J/g
Peak 106.8°C
-29.7 mW
Integration
Delta H 603 mJ
55.0 J/g
Peak 238.0°C
3.4 mW
20. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9547

Analyst: RR **Instrument:** DSC0 1 **Book #** 12114-13

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

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	32.2*	N/A	Joules/g
96000569	U-102	2 SAMPLE	S96T002778	0		DSC-01	SOLID	N/A	139		Joules/g
96000569	U-102	3 DUP	S96T002778	0		DSC-01	SOLID	139	59.5	N/A	Joules/g
96000569	U-102	4 SAMPLE	S96T002779	0		DSC-01	SOLID	N/A	63.2		Joules/g
96000569	U-102	5 DUP	S96T002779	0		DSC-01	SOLID	63.2	76.6	N/A	Joules/g

Final page for worklist # 9547

Analyst Signature 6/8/96 Date

Analyst Signature 6-12-96 Date

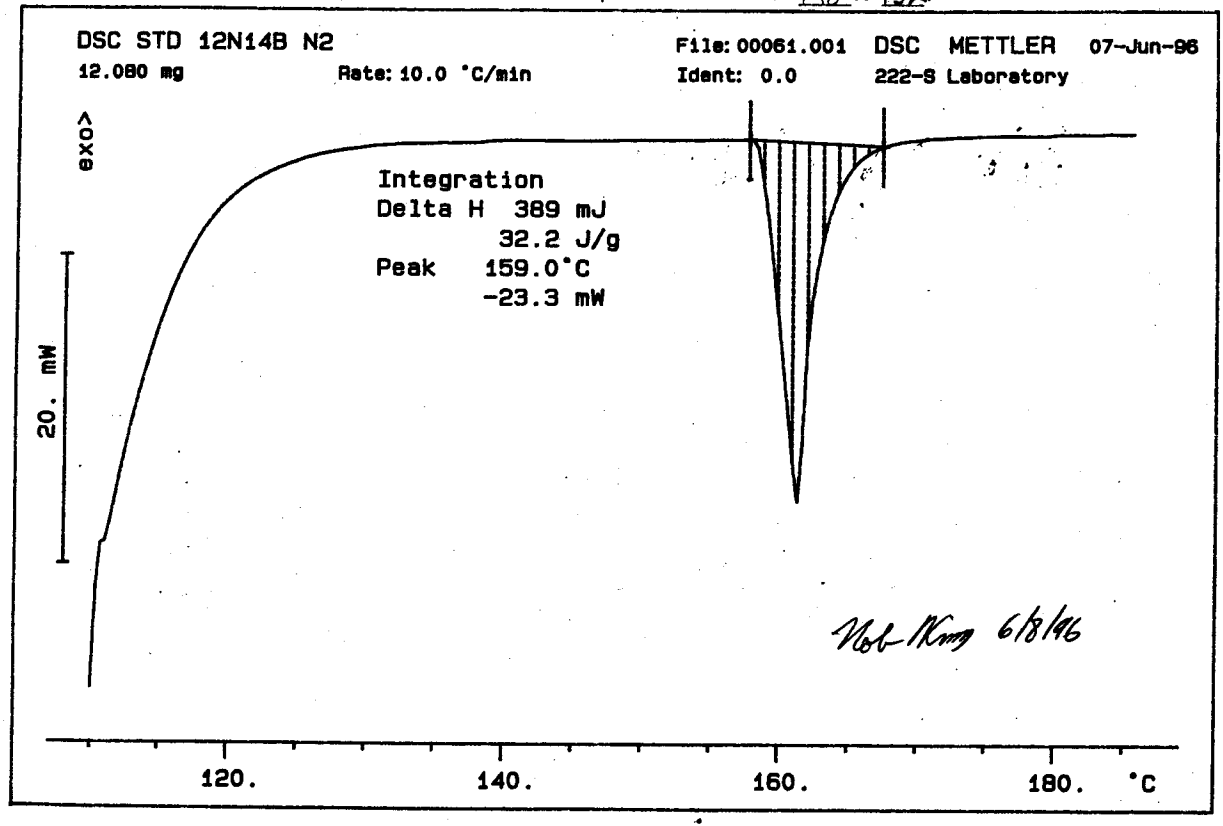
Verified/Validated by
Blandina Valenzuela 6/13/96

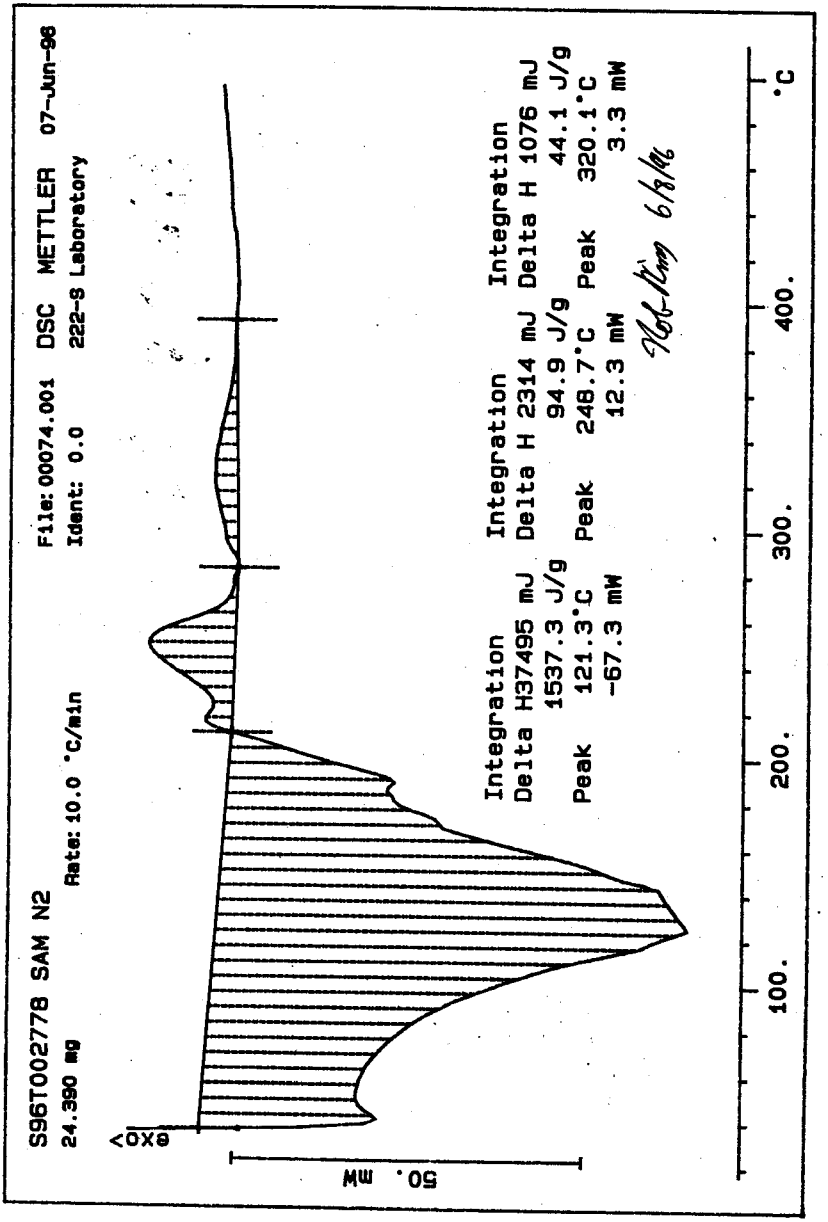
S96T002778 results are the sum of two exotherms. A triplicate wasn't run because results were not close to the notification limi

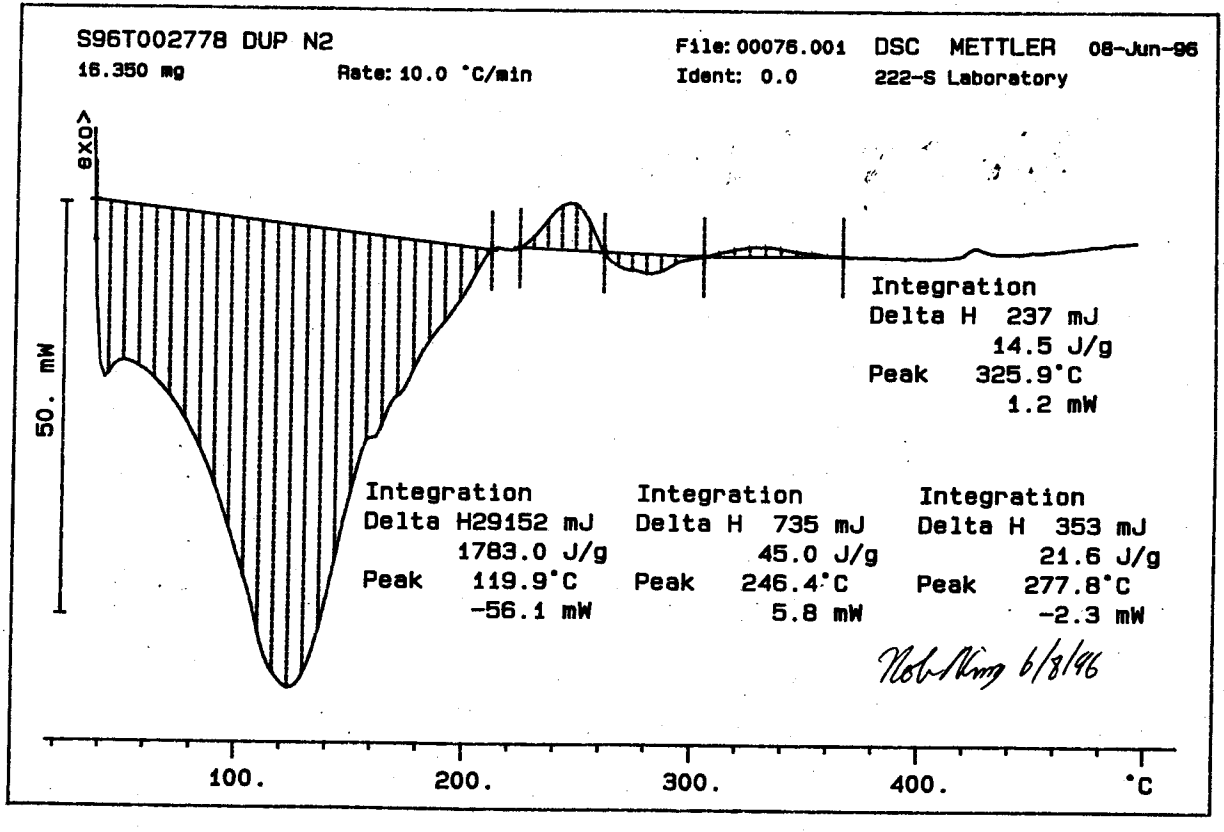
Data Entry Comments: S96T002779 results are the sum of two exotherms.

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.

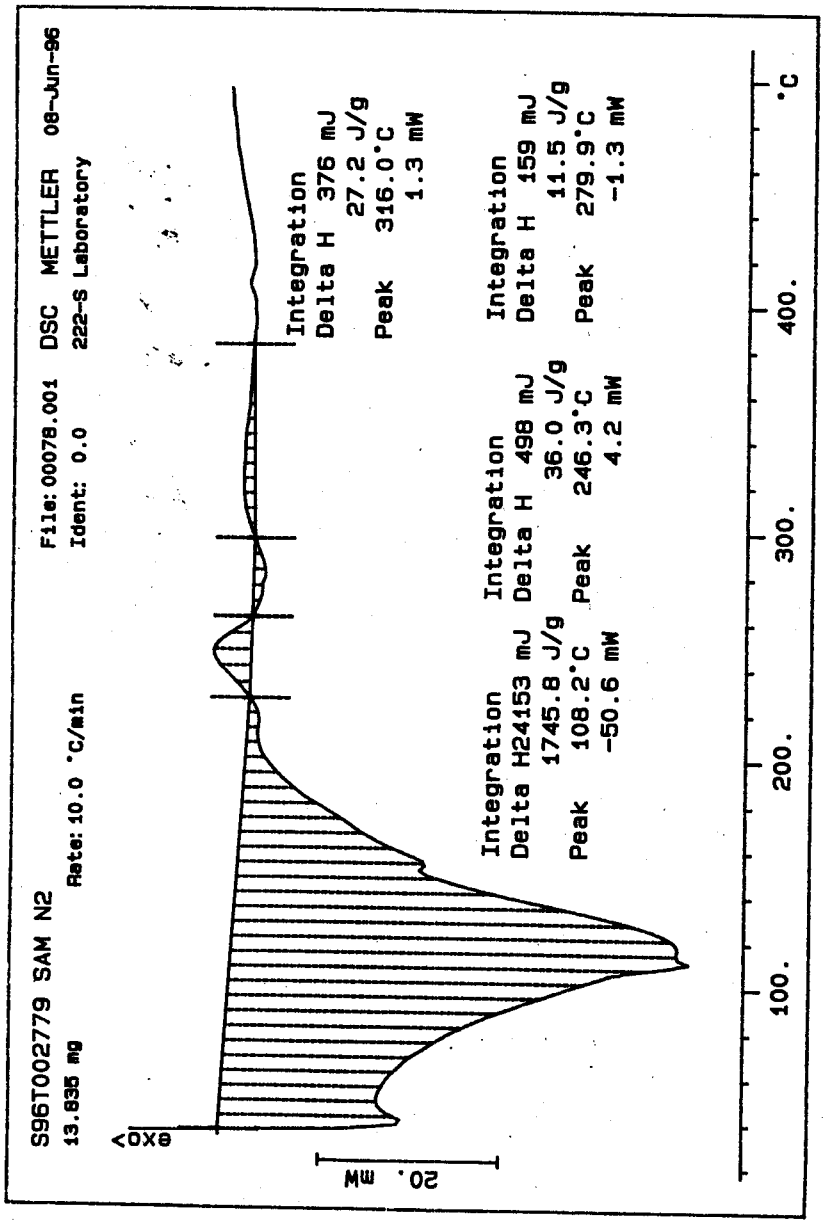
SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 148 TO 152.

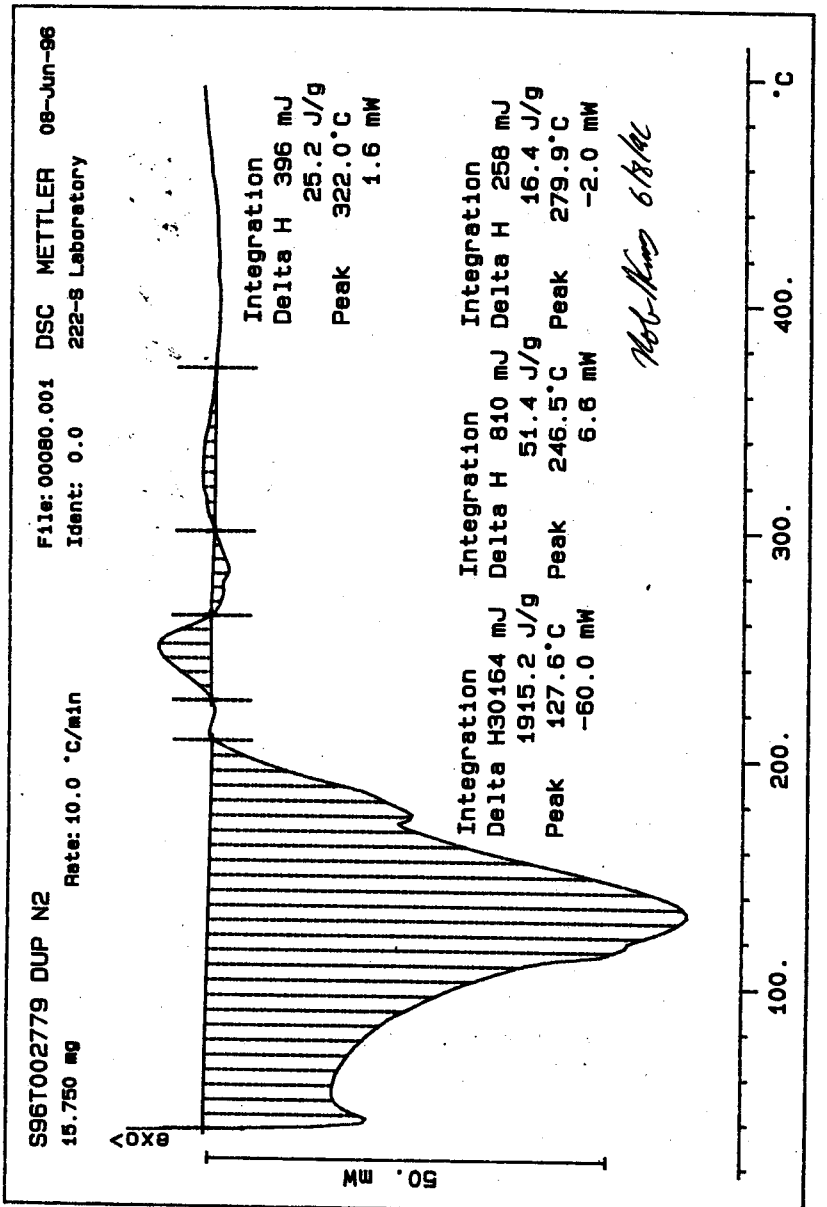



S96T002778 SAM N2
24.390 mg
Rate: 10.0 °C/min
File: 00074.001 DSC METTLER 07-Jun-96
Ident: 0.0 222-S Laboratory
exo>
50. mW
100.
200.
300.
400.
°C
Integration Integration Integration
Delta H37495 mJ Delta H 2314 mJ Delta H 1076 mJ
1537.3 J/g 94.9 J/g 44.1 J/g
Peak 121.3°C Peak 248.7°C Peak 320.1°C
-67.3 mW 12.3 mW 3.3 mW
6/8/96


S96T002778 DUP N2
16.350 mg
Rate: 10.0 °C/min
File: 00076.001 DSC METTLER 08-Jun-96
Ident: 0.0 222-S Laboratory
exo>
50. mW
Integration
Delta H 237 mJ
14.5 J/g
Peak 325.9°C
1.2 mW
Integration
Delta H29152 mJ
1783.0 J/g
Peak 119.9°C
-56.1 mW
Integration
Delta H 735 mJ
45.0 J/g
Peak 246.4°C
5.8 mW
Integration
Delta H 353 mJ
21.6 J/g
Peak 277.8°C
-2.3 mW
Rob King 6/8/96
100.
200.
300.
400.
°C

150


S96T002779 SAM N2
13.835 mg
Rate: 10.0 °C/min
File: 00078.001
Ident: 0.0
DSC METTLER 08-Jun-96
222-S Laboratory
exo>
20. mW
100.
200.
300.
400.
°C
Integration
Delta H 376 mJ
27.2 J/g
Peak 316.0°C
1.3 mW
Integration
Delta H 159 mJ
11.5 J/g
Peak 279.9°C
-1.3 mW
Integration
Delta H 498 mJ
36.0 J/g
Peak 246.3°C
4.2 mW
Integration
Delta H24153 mJ
1745.8 J/g
Peak 108.2°C
-50.6 mW


S96T002779 DUP N2
15.750 mg
Rate: 10.0 °C/min
File: 00080.001
Ident: 0.0
DSC METTLER 08-Jun-96
222-S Laboratory
Integration
Delta H 396 mJ
25.2 J/g
Peak 322.0°C
1.6 mW
Integration
Delta H30164 mJ
1915.2 J/g
Peak 127.6°C
-60.0 mW
Integration
Delta H 810 mJ
51.4 J/g
Peak 246.5°C
6.8 mW
Integration
Delta H 258 mJ
16.4 J/g
Peak 279.9°C
-2.0 mW
6/18/96
50. mW
exo>
100.
200.
300.
400.
°C

worklistrpt Version 2.1 05/15/95
06/03/96 14:53

LABCORE Data Entry Template for Worklist# 9548

Analyst: DcD **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-102 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	31.5	N/A	Joules/g
96000569	U-102	2	SAMPLE	S96T002780	0		DSC-01	SOLID	N/A	14.4		Joules/g
96000569	U-102	3	DUP	S96T002780	0		DSC-01	SOLID	14.4	19.8	N/A	Joules/g

Final page for worklist # 9548

Daniel K Dunham 6-11-96
Analyst Signature **Date**

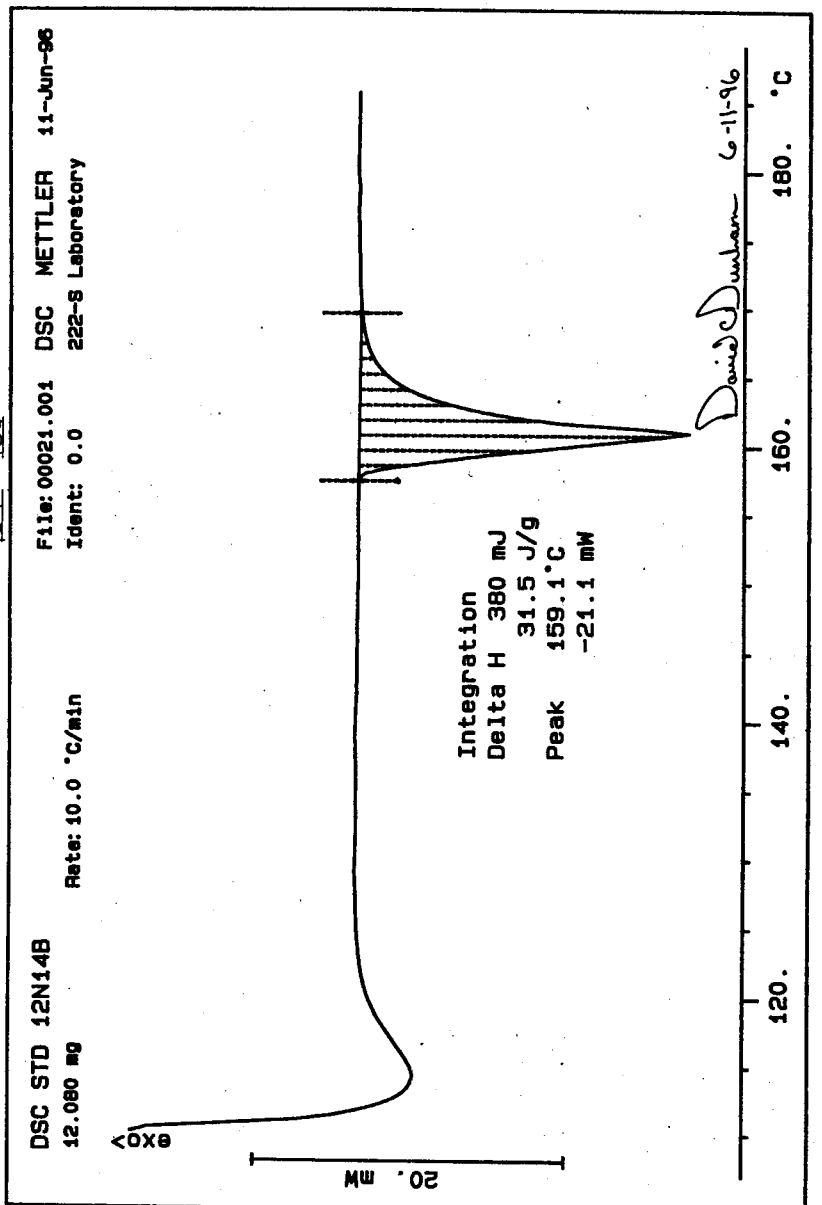
RLBlack 6-13-96
Analyst Signature **Date**

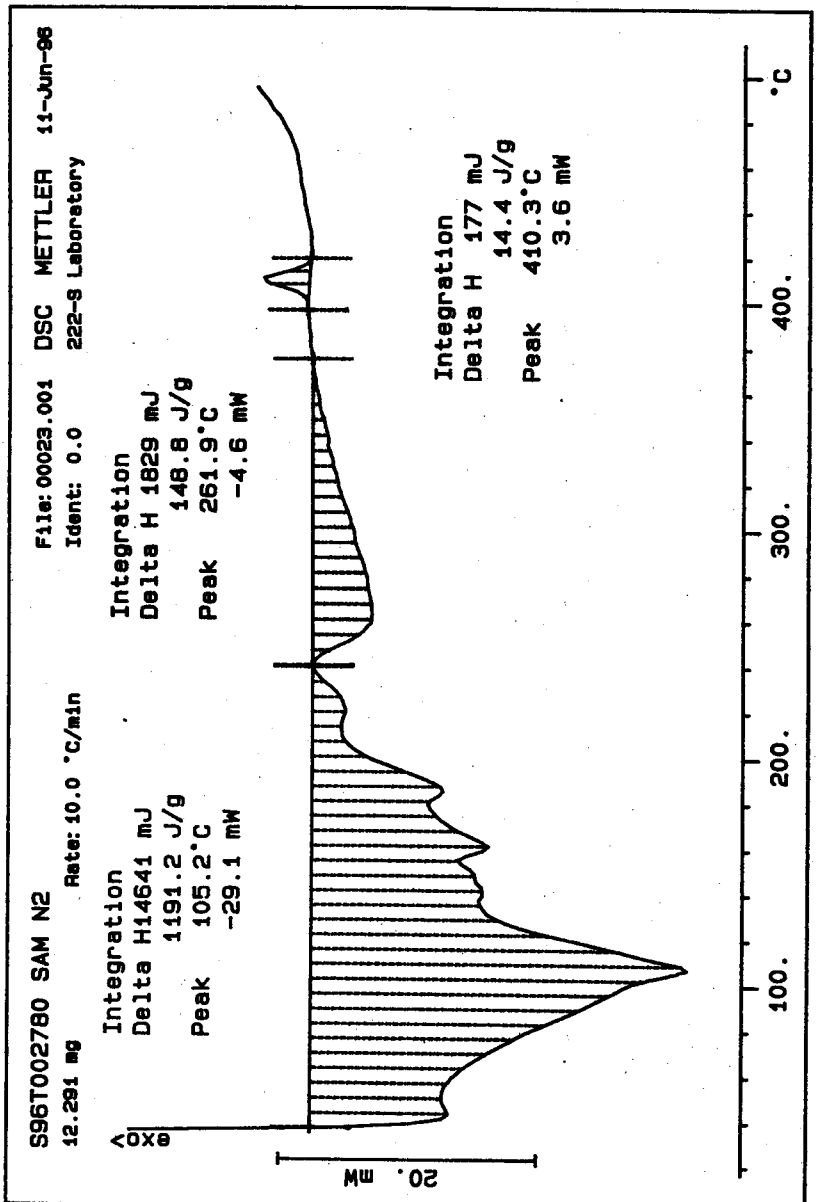
Verified / Validated by
Blandina Valenzuela 6/14/96

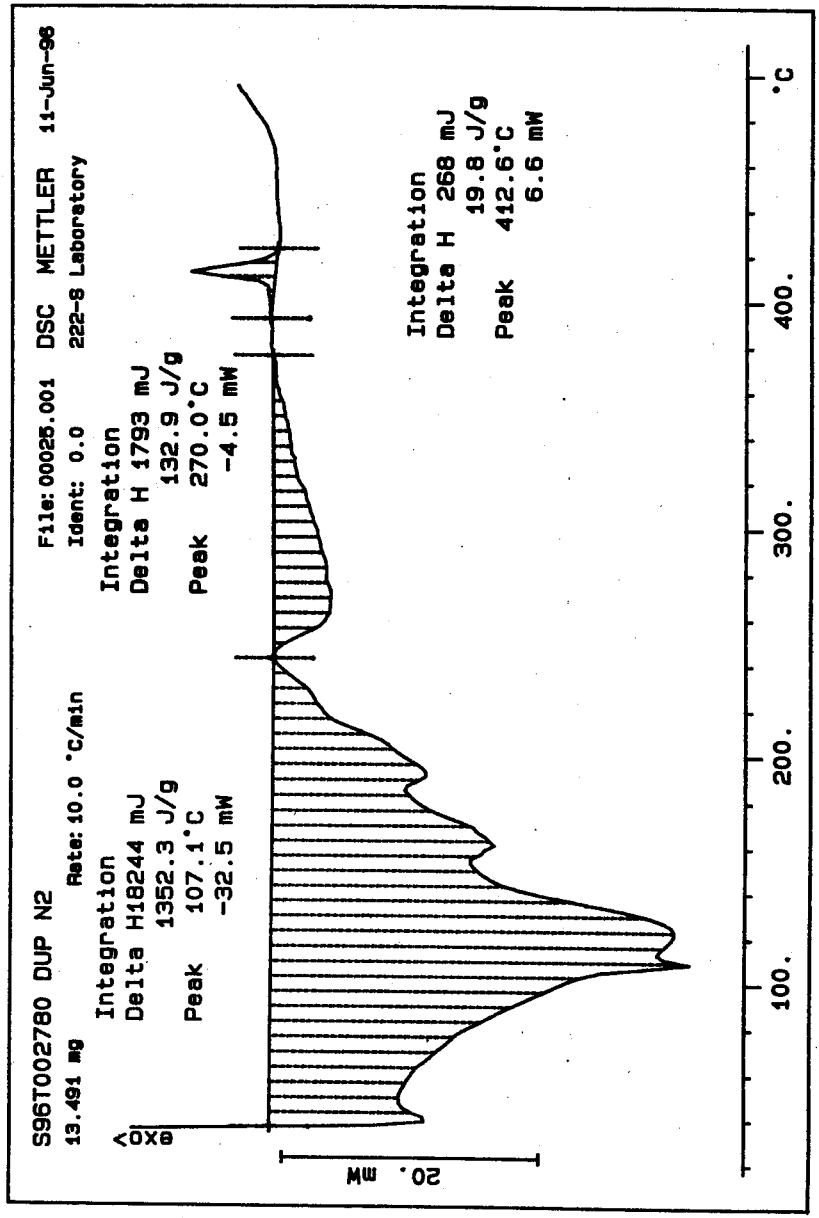
Data Entry Comments:

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 154 TO 156




S96T002780 SAM N2
12.291 mg
Rate: 10.0 °C/min
File: 00023.001
Ident: 0.0
DSC METTLER 11-Jun-96
222-S Laboratory
Integration
Delta H1464l mJ
1191.2 J/g
Peak 105.2°C
-29.1 mW
Integration
Delta H 1829 mJ
148.8 J/g
Peak 261.9°C
-4.6 mW
Integration
Delta H 177 mJ
14.4 J/g
Peak 410.3°C
3.6 mW
exo
20. mW
100.
200.
300.
400.
°C


S96T002780 DUP N2
13.491 mg
Rate: 10.0 °C/min
File: 00025.001 DSC METTLER 11-Jun-96
Ident: 0.0 222-8 Laboratory
Integration
Delta H18244 mJ
1352.3 J/g
Peak 107.1°C
-32.5 mW
Integration
Delta H 1793 mJ
132.9 J/g
Peak 270.0°C
-4.5 mW
Integration
Delta H 268 mJ
19.8 J/g
Peak 412.6°C
6.6 mW
exo
20. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 10073

Analyst: EAL **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: DSC U-102 Reruns Run under N2. RUSH

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-03	SOLID	28.45	27.01 *	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002665	1		DSC-03	SOLID	N/A	164.3		Joules/g
96000536	U-102	3 DUP	S96T002665	1		DSC-03	SOLID	164.3	141.5	N/A	Joules/g

Final page for worklist # 10073

See attached for signatures
Analyst Signature Date 6-20-96

Analyst Signature Date 6-21-96

Verified/Validated by
Blandina Valenzuela
6-24-96

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# 10073

Analyst: EAL **Instrument:** DSC0 _____ **Book #** 12N14-B

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

Worklist Comment: DSC U-102 Reruns Run under N2. RUSH

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	_____	_____	N/A	Joules/g
96000536	U-102	2 SAMPLE	S96T002665	1		DSC-01	SOLID	N/A	_____	_____	Joules/g
96000536	U-102	3 DUP	S96T002665	1		DSC-01	SOLID	_____	_____	N/A	Joules/g

Final page for worklist # 10073

A Lambel 06-19-96
Analyst Signature **Date**

_____
Analyst Signature **Date**

DSC-03 instrument
was used.
6-20-96
Blandina
Valenzuela

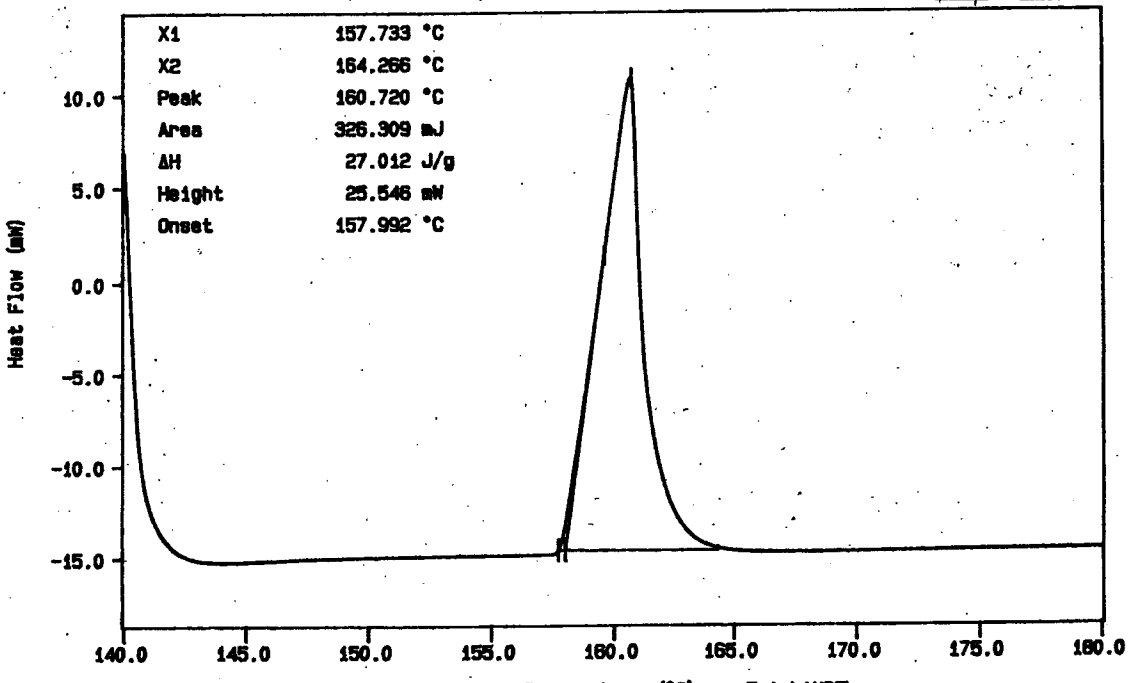
Data Entry Comments:

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.

A Lambel 06.19.96

Curve 1: DSC
File info: SAM061901 Wed Jun 19 05:52:55 1996
Sample Weight: 12.080 mg
12N14-B INDIUM AT 10C\MIN

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 159 TO 161.



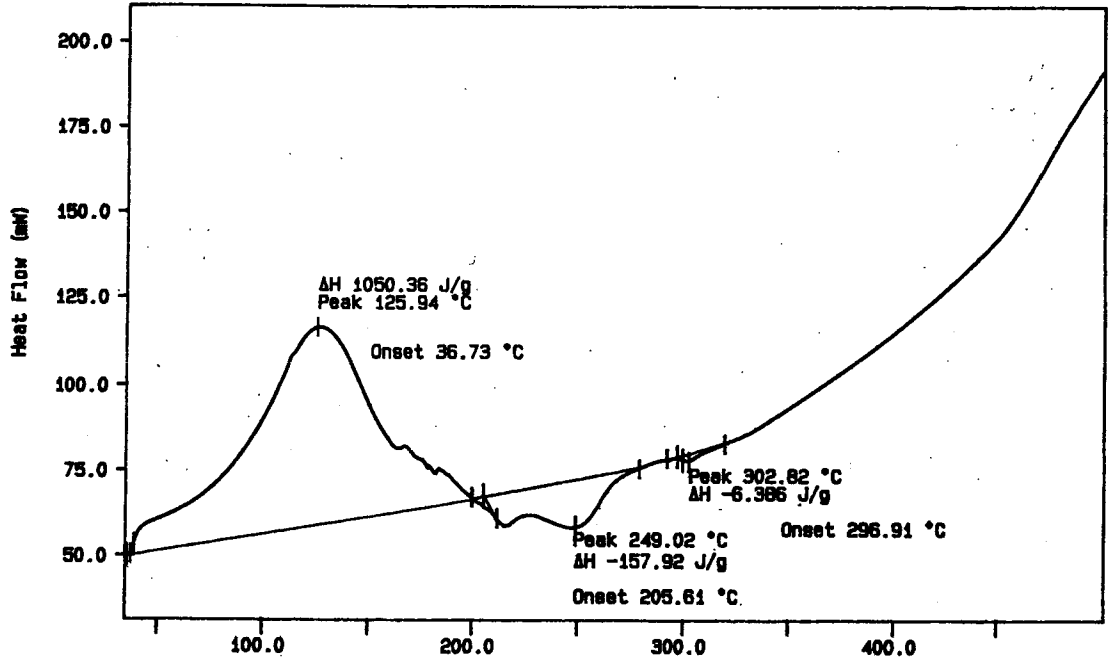
N2, EXOTHERM DOWN
TEMP: 140.0 C TIME: 0.0 min RATE: 10.0 C/min
TEMP: 180.0 C

E A LAMBEL
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 19 06:09:34 1996

159

WMC-SD-WM-DP-189, REV 0

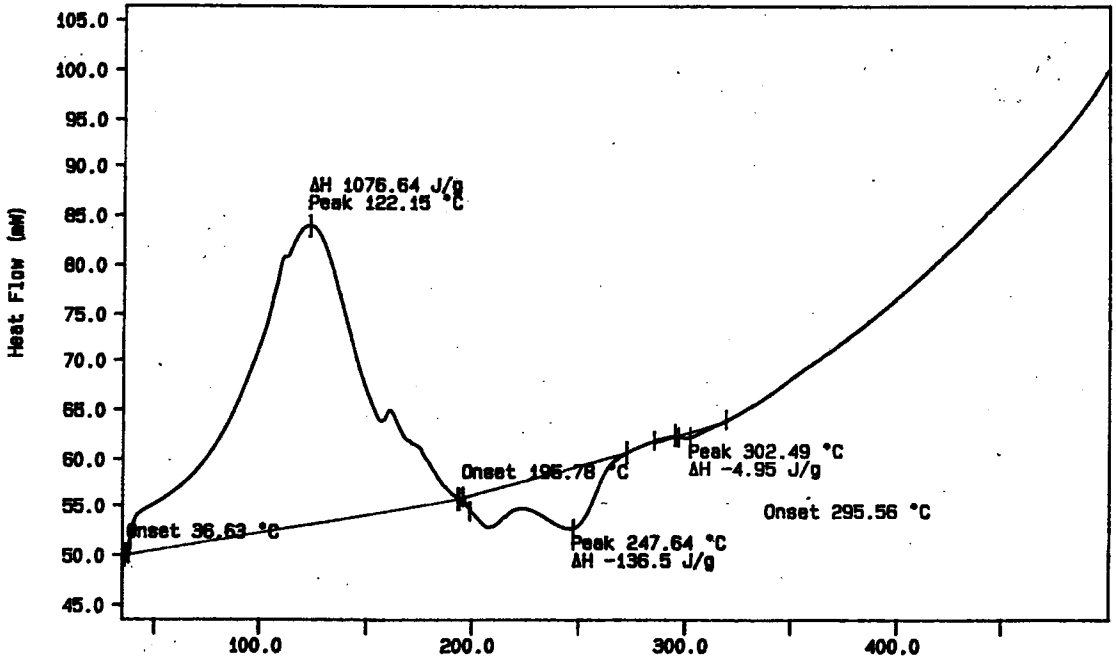
Curve 1: DSC
File info: SAM061905 Wed Jun 19 12:00:33 1996
Sample Weight: 23.120 mg
S96T002665



160

WHC-SD-WM-DP-169, REV. 0

Curve 1: DSC
File info: SAM061906 Wed Jun 19 13:52:46 1996
Sample Weight: 11.430 mg
S96T002665 DUP



191

WMC-SOWMP-169, REV. 0

LABCORE Data Entry Template for Worklist# 10099

Analyst: Hea **Instrument:** DSC01 **Book #** N/A

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

Worklist Comment: U-102 Dry DSCs.

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
96000569	U-102	1 SAMPLE	S96T002776	0		DSC-02	SOLID	N/A	42.57		Joules/g Dry
96000569	U-102	2 DUP	S96T002776	0		DSC-02	SOLID	42.57	59.57	N/A	Joules/g Dry
96000569	U-102	3 SAMPLE	S96T002777	0		DSC-02	SOLID	N/A	134.4		Joules/g Dry
96000569	U-102	4 DUP	S96T002777	0		DSC-02	SOLID	134.4	151.8	N/A	Joules/g Dry
96000569	U-102	5 SAMPLE	S96T002778	0		DSC-02	SOLID	N/A	226.2		Joules/g Dry
96000569	U-102	6 DUP	S96T002778	0		DSC-02	SOLID	226.2	96.81	N/A	Joules/g Dry
96000569	U-102	7 SAMPLE	S96T002779	0		DSC-02	SOLID	N/A	133.8		Joules/g Dry
96000569	U-102	8 DUP	S96T002779	0		DSC-02	SOLID	133.8	162.2	N/A	Joules/g Dry
96000569	U-102	9 SAMPLE	S96T002780	0		DSC-02	SOLID	N/A	25.94		Joules/g Dry
96000569	U-102	10 DUP	S96T002780	0		DSC-02	SOLID	25.94	35.67	N/A	Joules/g Dry
96000569	U-102	11 SAMPLE	S96T002647	0		DSC-02	SOLID	N/A	20.13		Joules/g Dry
96000569	U-102	12 DUP	S96T002647	0		DSC-02	SOLID	20.13	32.55	N/A	Joules/g Dry
96000569	U-102	13 SAMPLE	S96T002775	0		DSC-02	SOLID	N/A	45.17		Joules/g Dry
96000569	U-102	14 DUP	S96T002775	0		DSC-02	SOLID	45.17	46.32	N/A	Joules/g Dry

Final page for worklist # 10099

H Anastos 6-20-96
Analyst Signature **Date**

Analyst Signature **Date**

Validated 6-20-96 Hea

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# 10100

Analyst: Hea **Instrument:** DSC01 **Book #** N/A

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

Worklist Comment: U-102 Dry DSCs.

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
96000536	U-102	1 SAMPLE	S96T002500	0		DSC-02	SOLID	N/A	19.79		Joules/g Dry
96000536	U-102	2 DUP	S96T002500	0		DSC-02	SOLID	19.79	18.47	N/A	Joules/g Dry
96000536	U-102	3 SAMPLE	S96T002501	0		DSC-02	SOLID	N/A	22.93		Joules/g Dry
96000536	U-102	4 DUP	S96T002501	0		DSC-02	SOLID	22.93	18.71	N/A	Joules/g Dry
96000536	U-102	5 SAMPLE	S96T002666	0		DSC-02	SOLID	N/A	175.8		Joules/g Dry
96000536	U-102	6 DUP	S96T002666	0		DSC-02	SOLID	175.8	201.8	N/A	Joules/g Dry
96000536	U-102	7 SAMPLE	S96T002755	0		DSC-02	SOLID	N/A	119.4		Joules/g Dry
96000536	U-102	8 DUP	S96T002755	0		DSC-02	SOLID	119.4	105.8	N/A	Joules/g Dry
96000569	U-102	9 SAMPLE	S96T002632	0		DSC-02	SOLID	N/A	80.15		Joules/g Dry
96000569	U-102	10 DUP	S96T002632	0		DSC-02	SOLID	80.15	69.24	N/A	Joules/g Dry
96000569	U-102	11 SAMPLE	S96T002633	0		DSC-02	SOLID	N/A	104.4		Joules/g Dry
96000569	U-102	12 DUP	S96T002633	0		DSC-02	SOLID	104.4	102.8	N/A	Joules/g Dry
96000569	U-102	13 SAMPLE	S96T002636	0		DSC-02	SOLID	N/A	24.07		Joules/g Dry
96000569	U-102	14 DUP	S96T002636	0		DSC-02	SOLID	24.07	29.36	N/A	Joules/g Dry
96000569	U-102	15 SAMPLE	S96T002646	0		DSC-02	SOLID	N/A	53.04		Joules/g Dry
96000569	U-102	16 DUP	S96T002646	0		DSC-02	SOLID	53.04	2.18	N/A	Joules/g Dry

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# 10100

GROUP	PROJECT	S TYPE	SAMPLE#	R A -------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT

Final page for worklist # 10100

H Ornato 6-20-96
Analyst Signature Date

Analyst Signature Date

Validated 6-20-96 HEA

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# 10101

Analyst: Hea **Instrument:** DSC01 **Book #** N/A

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

Worklist Comment: U-102 Dry DSCs

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
96000536	U-102	1 SAMPLE	S96T002326	0		DSC-02	SOLID	N/A	118.1		Joules/g Dry
96000536	U-102	2 DUP	S96T002326	0		DSC-02	SOLID	118.1	112.7	N/A	Joules/g Dry
96000536	U-102	3 SAMPLE	S96T002332	0		DSC-02	SOLID	N/A	480.8		Joules/g Dry
96000536	U-102	4 DUP	S96T002332	0		DSC-02	SOLID	480.8	587.9	N/A	Joules/g Dry
96000536	U-102	5 SAMPLE	S96T002335	0		DSC-02	SOLID	N/A	611.2		Joules/g Dry
96000536	U-102	6 DUP	S96T002335	0		DSC-02	SOLID	611.2	624.1	N/A	Joules/g Dry
96000536	U-102	7 SAMPLE	S96T002338	0		DSC-02	SOLID	N/A	107.5		Joules/g Dry
96000536	U-102	8 DUP	S96T002338	0		DSC-02	SOLID	107.5	114.2	N/A	Joules/g Dry
96000536	U-102	9 SAMPLE	S96T002341	0		DSC-02	SOLID	N/A	97.17		Joules/g Dry
96000536	U-102	10 DUP	S96T002341	0		DSC-02	SOLID	97.17	127.9	N/A	Joules/g Dry
96000536	U-102	11 SAMPLE	S96T002347	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
96000536	U-102	12 DUP	S96T002347	0		DSC-02	SOLID	Ø	104.0	N/A	Joules/g Dry

Final page for worklist # 10101

HAnasto 6-20-96
Analyst Signature **Date**

Analyst Signature **Date**

Validated 6-20-96 Hea

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.

worklistrpt Version 2.1 05/15/95
06/20/96 14:15

LABCORE Data Entry Template for Worklist# 10117

Analyst: BDV **Instrument:** DSC01 **Book #** —

Method: LA-514-113 Rev/Mod —

Worklist Comment: Dry DSC for U-102. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
96000536	U-102	1	SAMPLE	S96T002329	0		DSC-02	SOLID	N/A	109.6		Joules/g Dry
96000536	U-102	2	DUP	S96T002329	0		DSC-02	SOLID	109.6	106.8	N/A	Joules/g Dry
96000536	U-102	3	SAMPLE	S96T002344	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
96000536	U-102	4	DUP	S96T002344	0		DSC-02	SOLID	Ø	15.45	N/A	Joules/g Dry
96000536	U-102	5	TRIPL	S96T002344	0		DSC-02	SOLID	Ø	10.63	N/A	Joules/g Dry
96000536	U-102	6	SAMPLE	S96T002665	0		DSC-02	SOLID	N/A	305.0		Joules/g Dry
96000536	U-102	7	DUP	S96T002665	0		DSC-02	SOLID	305.0	154.4	N/A	Joules/g Dry
96000536	U-102	8	SAMPLE	S96T002665	1		DSC-02	SOLID	N/A	258.5		Joules/g Dry
96000536	U-102	9	DUP	S96T002665	1		DSC-02	SOLID	258.5	222.7	N/A	Joules/g Dry
96000536	U-102	10	SAMPLE	S96T002323	0		DSC-02	LIQUID	N/A	246.8		Joules/g Dry
96000536	U-102	11	DUP	S96T002323	0		DSC-02	LIQUID	246.8	251.3	N/A	Joules/g Dry
96000569	U-102	12	SAMPLE	S96T002549	0		DSC-02	LIQUID	N/A	207.5		Joules/g Dry
96000569	U-102	13	DUP	S96T002549	0		DSC-02	LIQUID	207.5	272.8	N/A	Joules/g Dry
96000569	U-102	14	SAMPLE	S96T002762	0		DSC-02	LIQUID	N/A	Ø		Joules/g Dry
96000569	U-102	15	DUP	S96T002762	0		DSC-02	LIQUID	Ø	Ø	N/A	Joules/g Dry

Final page for worklist # 10117

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.

worklistrpt Version 2.1 05/15/95
06/20/96 14:15

LABCORE Data Entry Template for Worklist# 10117

GROUP	PROJECT	S TYPE	SAMPLE#	R A -------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
Analyst Signature		Date			Analyst Signature			Date	

WHC-SD-WM-DP-169, REV. 0

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# 9248

Analyst: RDM **Instrument:** TGA0 1 **Book #** 92N9A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	LIQUID	59.2	~~57.67~~ 58.06 5/31/96 RDM	N/A	%
96000536	U-102	2 SAMPLE	S96T002323	0		TGA-01	LIQUID	N/A	50.93		%
96000536	U-102	3 DUP	S96T002323	0		TGA-01	LIQUID	50.93	50.28	N/A	%

Final page for worklist # 9248

RDMeyn 5/31/96
Analyst Signature **Date**

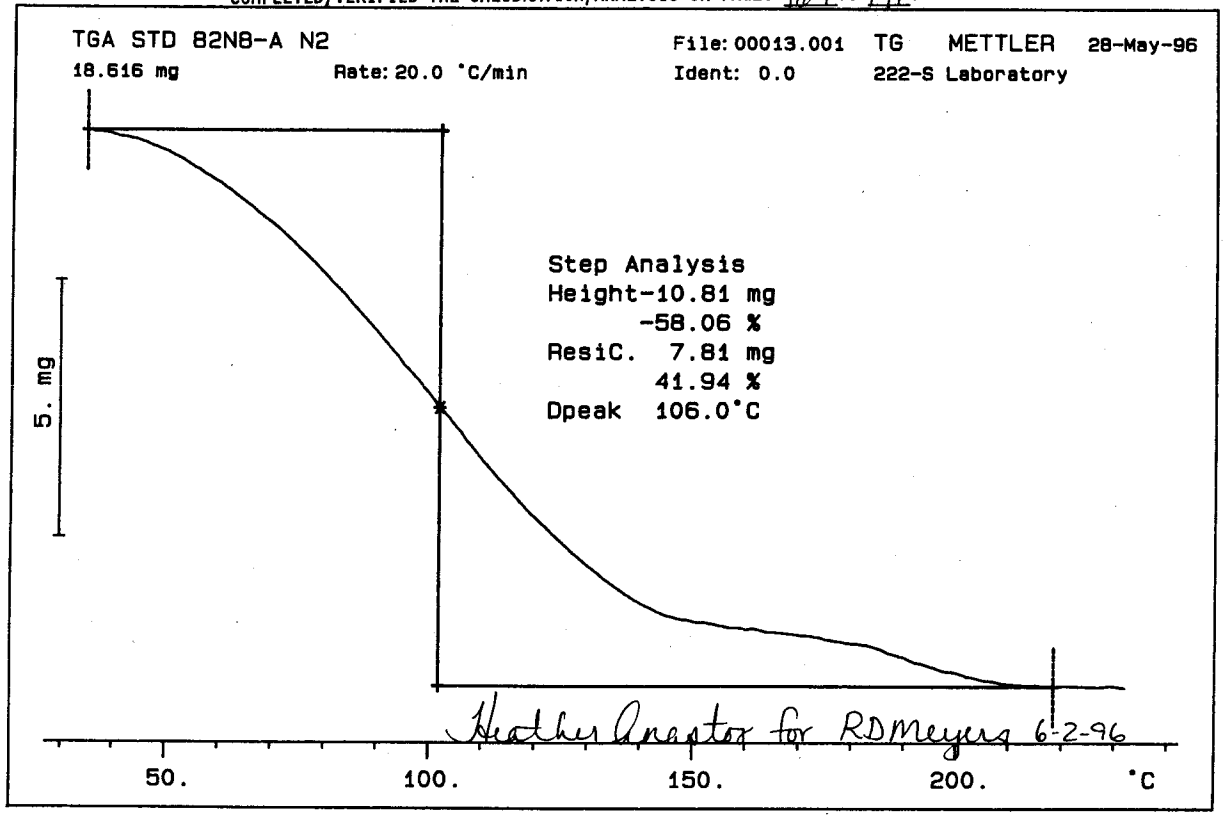
Linda Conklin 5-31-96
Analyst Signature **Date**

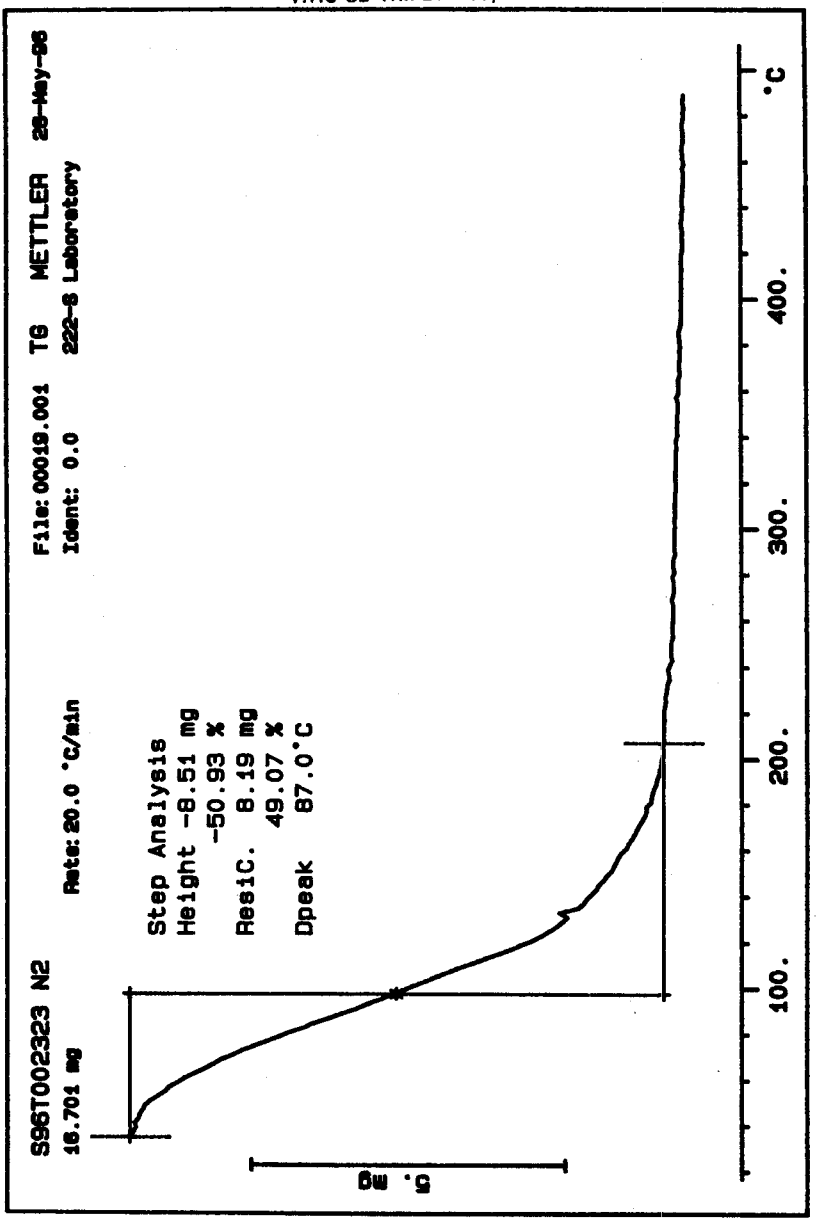
Validated by SA Anastos 6/2/96

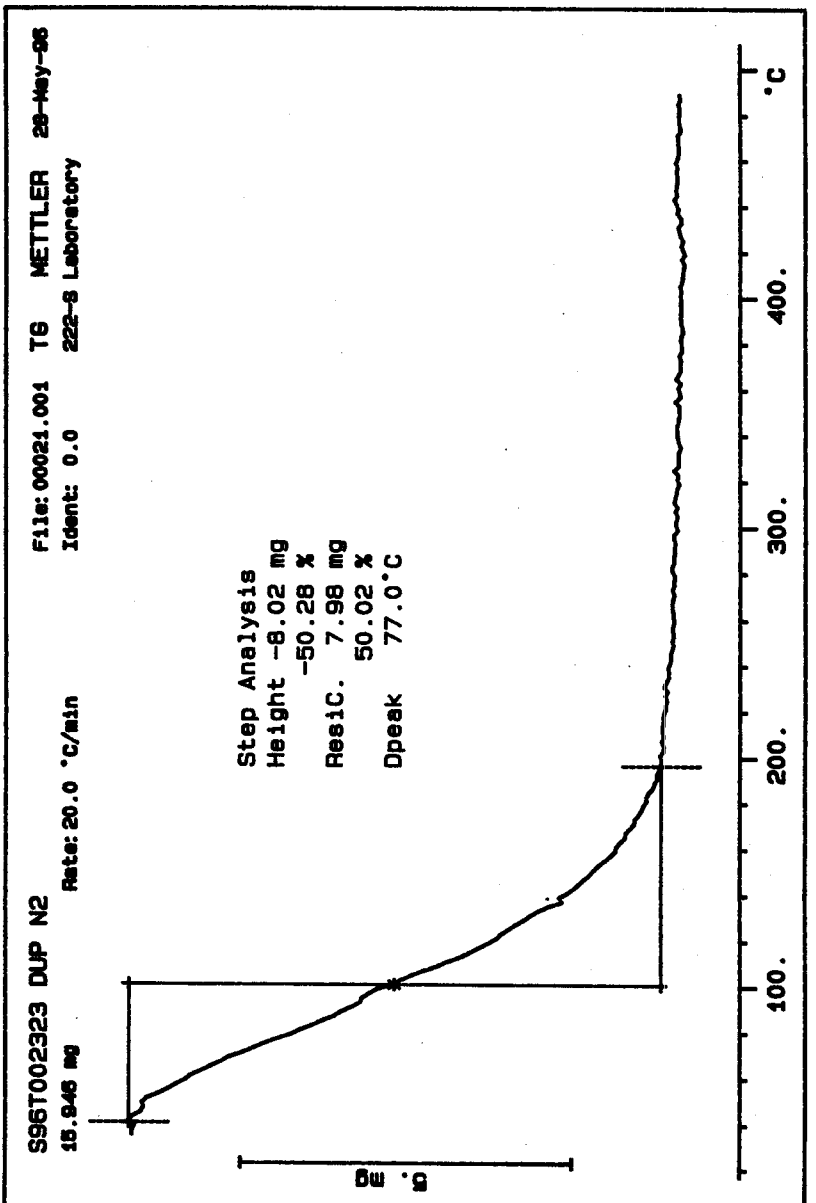
Data Entry Comments:

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 169 TO 171.




S96T002323 N2
16.701 mg
Rate: 20.0 °C/min
File: 00019.001 TG METTLER 28-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -8.51 mg
-50.93 %
ResiC. 8.19 mg
49.07 %
Dpeak 87.0°C
5. mg
100.
200.
300.
400.
°C


S96T002323 DUP N2
15.946 mg
Rate: 20.0 °C/min
File: 00021.001 TG METTLER 29-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -8.02 mg
-50.28 %
ResiC. 7.98 mg
50.02 %
Dpeak 77.0°C
mg
100.
200.
300.
400.
°C

WHC-SD-WM-DP-189, REV. 0

LABCORE Data Entry Template for Worklist# 9249

Analyst: PJM **Instrument:** TGA0 3 **Book #** 82N8A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.2	58.79	N/A	%
96000536	U-102	4	SAMPLE	S96T002329	0		TGA-03	SOLID	N/A	51.79		%
96000536	U-102	5	DUP	S96T002329	0		TGA-03	SOLID	51.79	51.35	N/A	%

Final page for worklist # 9249

Blandina Valenzuela for RJ McCown 6-20-96 (6-20-96 BDV)
Analyst Signature **Date**

Steve Peterson 6-20-96
Analyst Signature **Date**

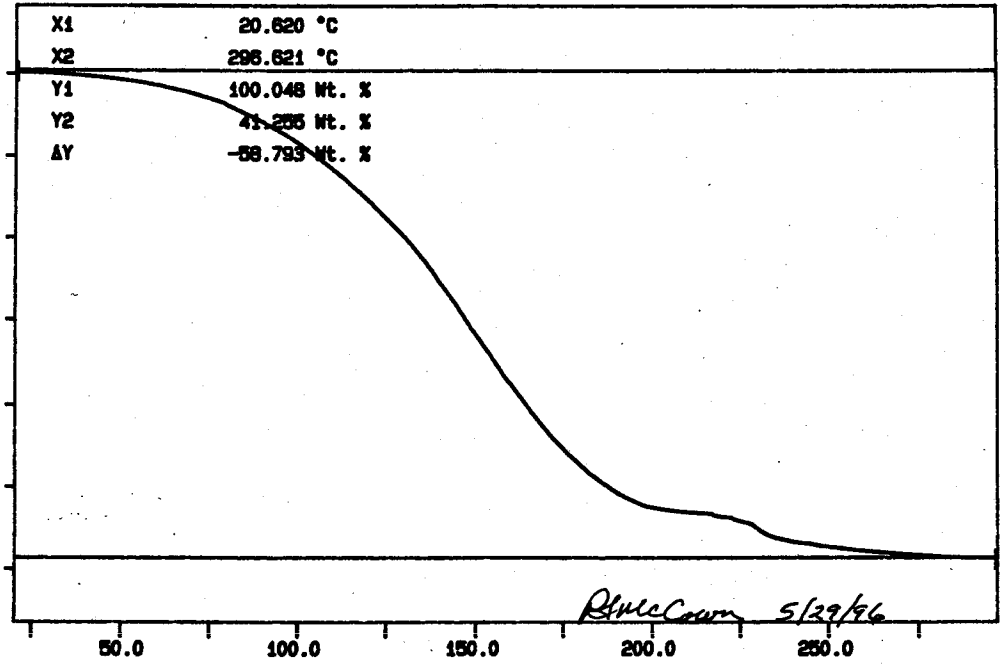
Reviewed 6/20/96

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: TER052901 Wed May 29 08:57:41 1996
Sample Weight: 23.086 mg
TGA STD 82N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 173 TO 175.



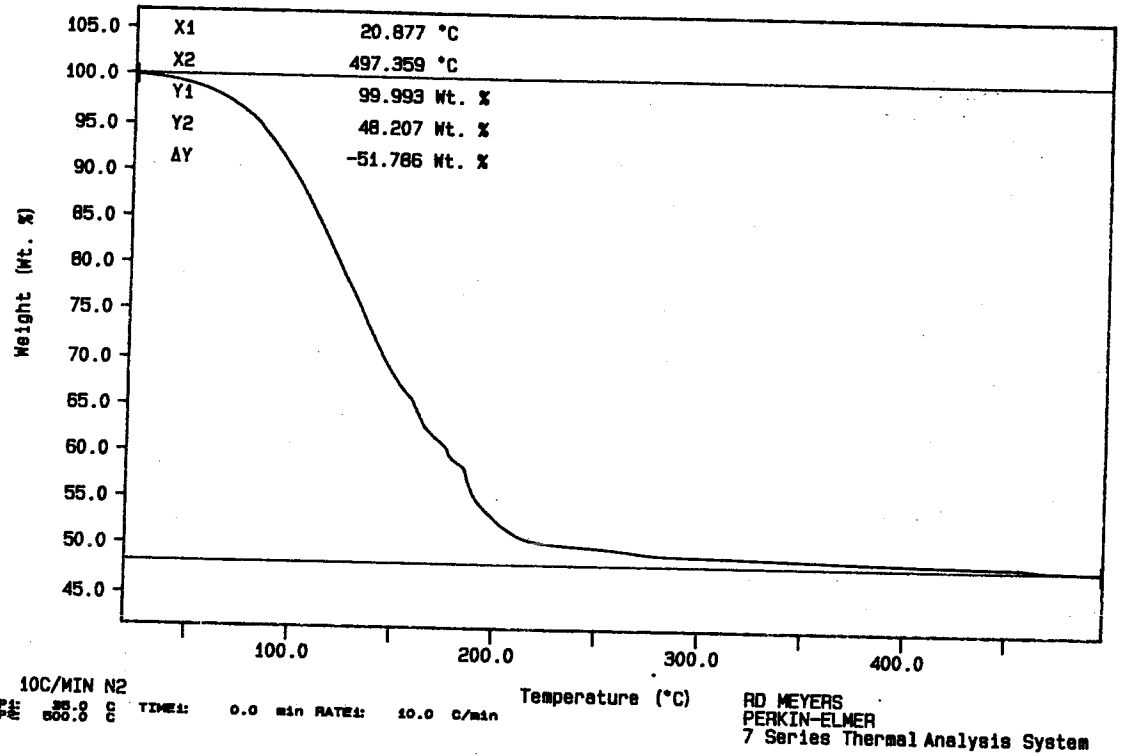
R McCann 5/29/96

N2 10C/MIN
TEMP: 35.8 °C TIME: 0.0 min RATE: 10.0 °C/min
PJ MCCONN
PERKIN-ELMER
7 Series Thermal Analysis System

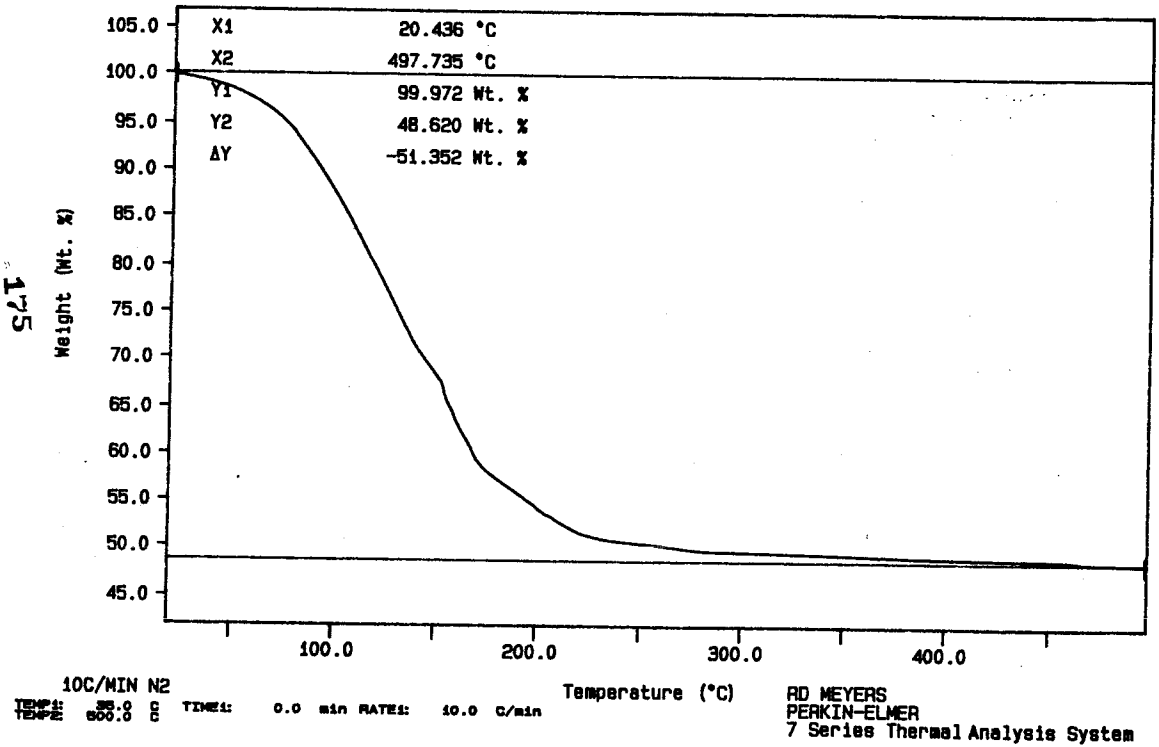
173

WHC-SD-WM-DP-189, REV.0

Curve 1: TGA
File info: SAM052907 Wed May 29 22:36:57 1996
Sample Weight: 13.661 mg
S96T002329



Curve 1: TGA
File info: SAM053001 Thu May 30 02:04:32 1996
Sample Weight: 11.674 mg
S96T002329DUP



1.75

LABCORE Data Entry Template for Worklist# 9250

Analyst: [illegible] **Instrument:** TGA0 1 **Book #** 92NBA

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND *	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	57.98	N/A	%
96000536	U-102	2	SAMPLE	S96T002332	0		TGA-01	SOLID	N/A	50.30		%
96000536	U-102	3	DUP	S96T002332	0		TGA-01	SOLID	50.30	51.41	N/A	%
96000536	U-102	4	SAMPLE	S96T002335	0		TGA-01	SOLID	N/A	50.52		%
96000536	U-102	5	DUP	S96T002335	0		TGA-01	SOLID	50.52	48.92	N/A	%

Final page for worklist # 9250

[signature] 5/30/96
Analyst Signature **Date**

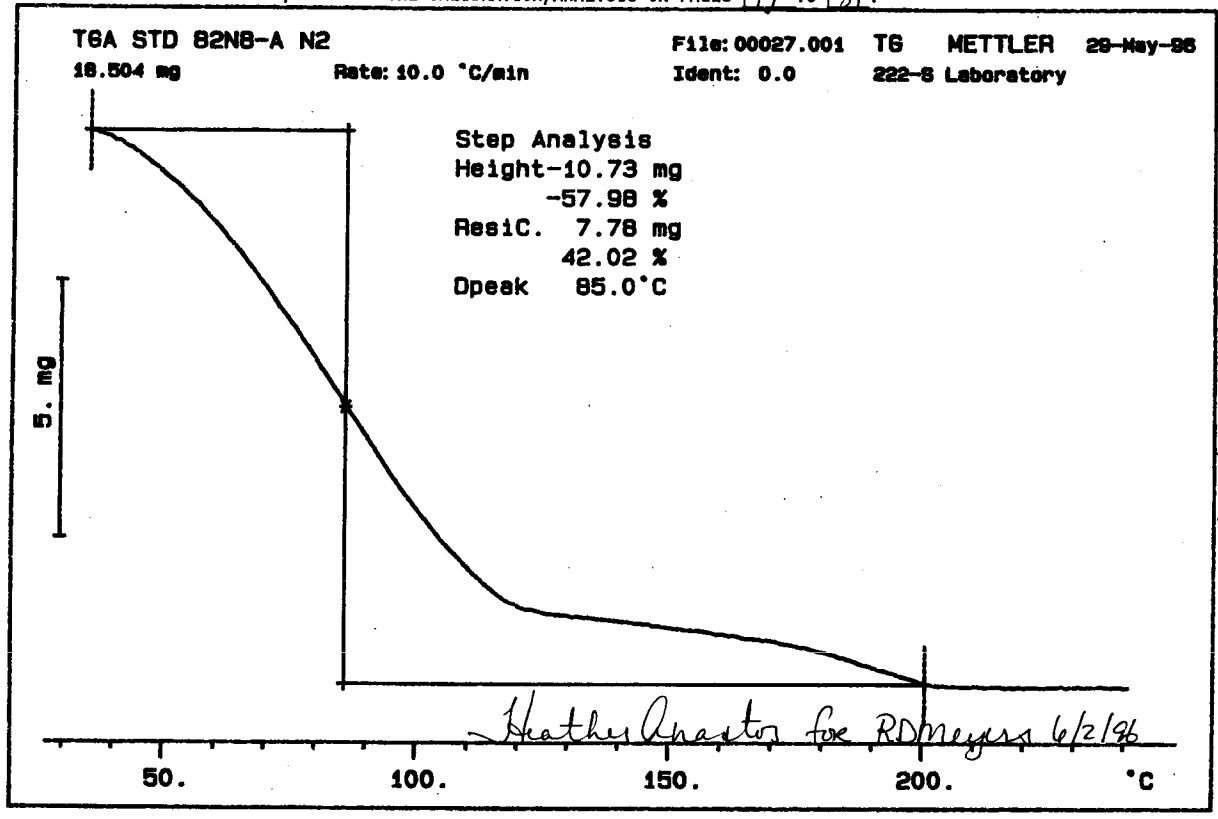
[signature] 6-1-96
Analyst Signature **Date**

Validated by HAnastas 6/2/96

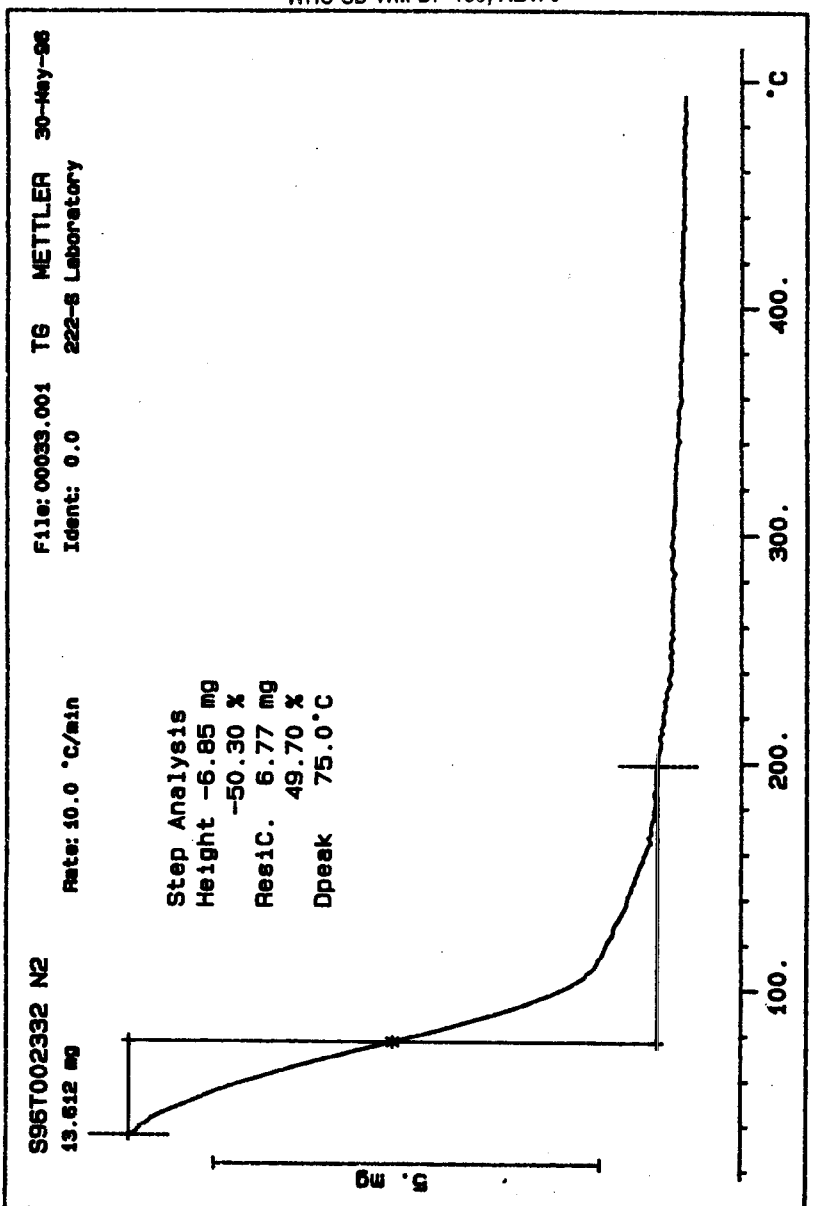
Data Entry Comments:

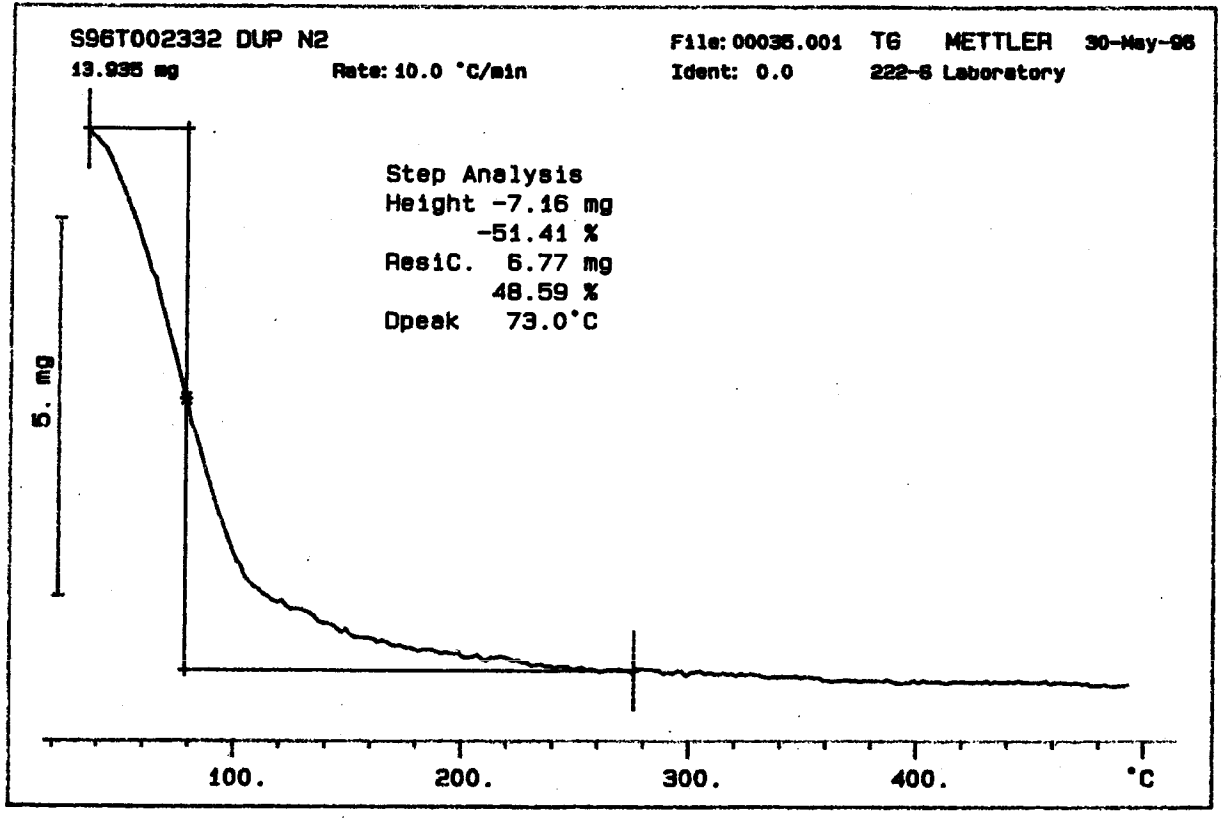
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

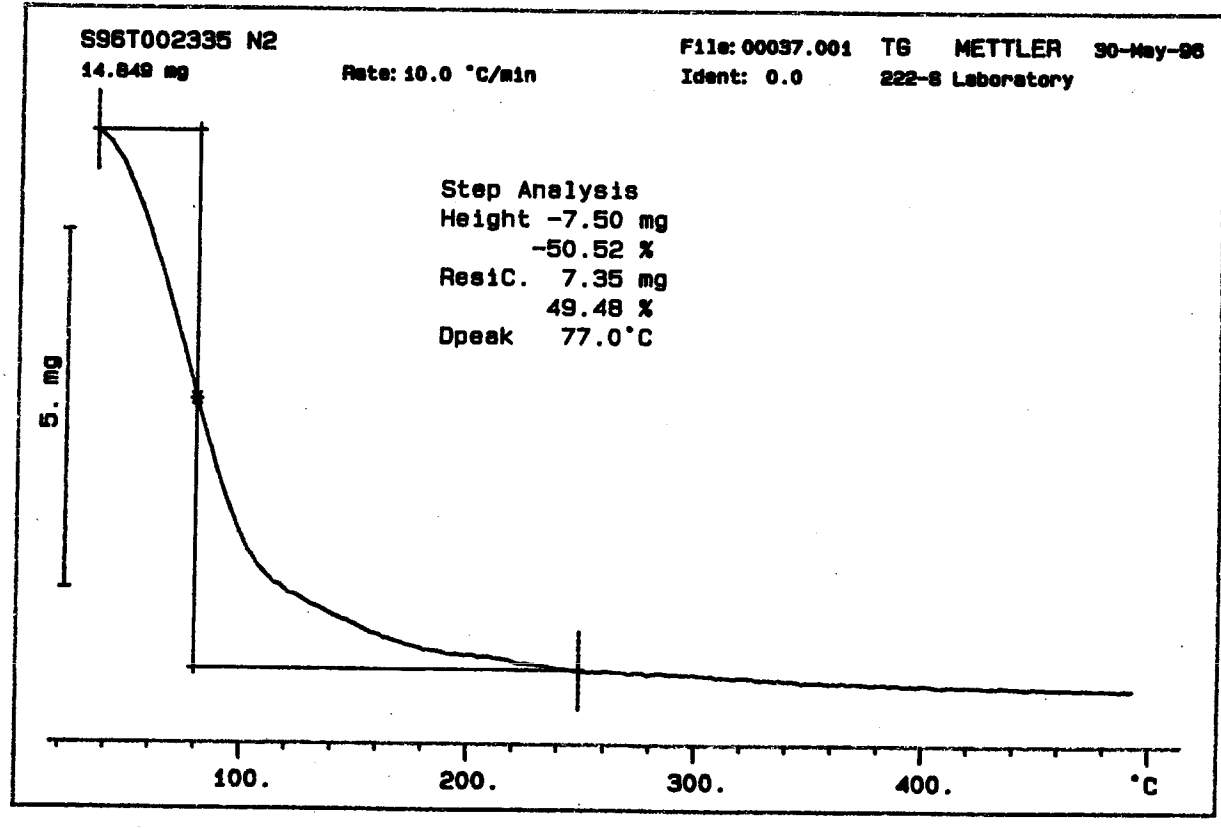
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 177 TO 181.

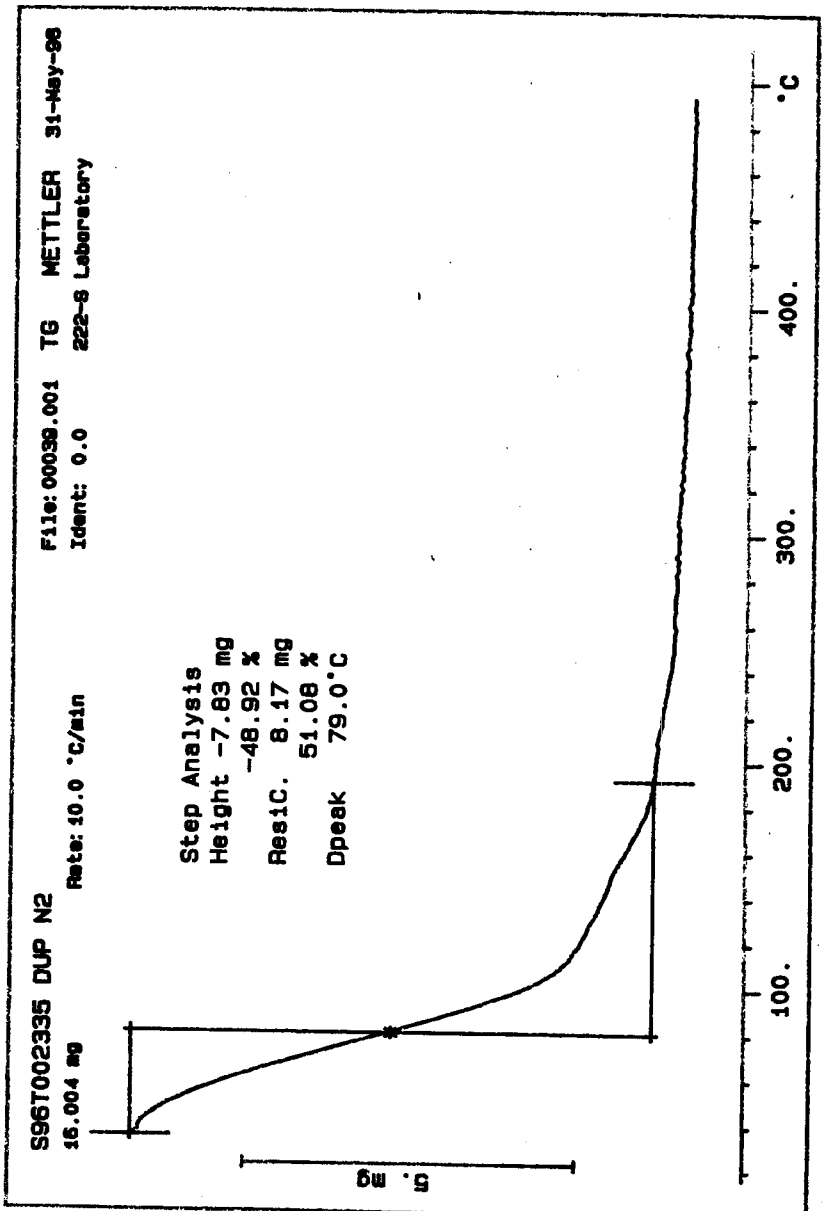


177


S95T002332 N2
13.612 mg
Rate: 10.0 °C/min
File: 00033.001 TG METTLER 30-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -6.85 mg
-50.30 %
ResiC. 6.77 mg
49.70 %
Dpeak 75.0°C
5. mg
100.
200.
300.
400.
°C


S96T002332 DUP N2
13.935 mg
Rate: 10.0 °C/min
File: 00036.001 TG METTLER 30-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -7.16 mg
-51.41 %
ResiC. 6.77 mg
48.59 %
Dpeak 73.0°C
5. mg
100.
200.
300.
400.
°C


S96T002335 N2
14.849 mg
Rate: 10.0 °C/min
File: 00037.001 TG METTLER 30-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -7.50 mg
-50.52 %
ResiC. 7.35 mg
49.48 %
Dpeak 77.0°C
5. mg
100.
200.
300.
400.
°C


S96T002335 DUP N2
16.004 mg
Rate: 10.0 °C/min
File: 00038.001 TG METTLER 31-May-96
Ident: 0.0 222-8 Laboratory
Step Analysis
Height -7.83 mg
-48.92 %
ResiC. 8.17 mg
51.08 %
Dpeak 79.0°C
mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9251

Analyst: KRM **Instrument:** TGA0 1 **Book #** 82N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.2	58.56 *	N/A	%
96000536	U-102	2 SAMPLE	S96T002338	0		TGA-01	SOLID	N/A	42.94		%
96000536	U-102	3 DUP	S96T002338	0		TGA-01	SOLID	42.94	43.60	N/A	%
96000536	U-102	4 SAMPLE	S96T002341	0		TGA-01	SOLID	N/A	31.61		%
96000536	U-102	5 DUP	S96T002341	0		TGA-01	SOLID	31.61	33.17	N/A	%

Final page for worklist # 9251

[signature] 5-31-96
Analyst Signature **Date**

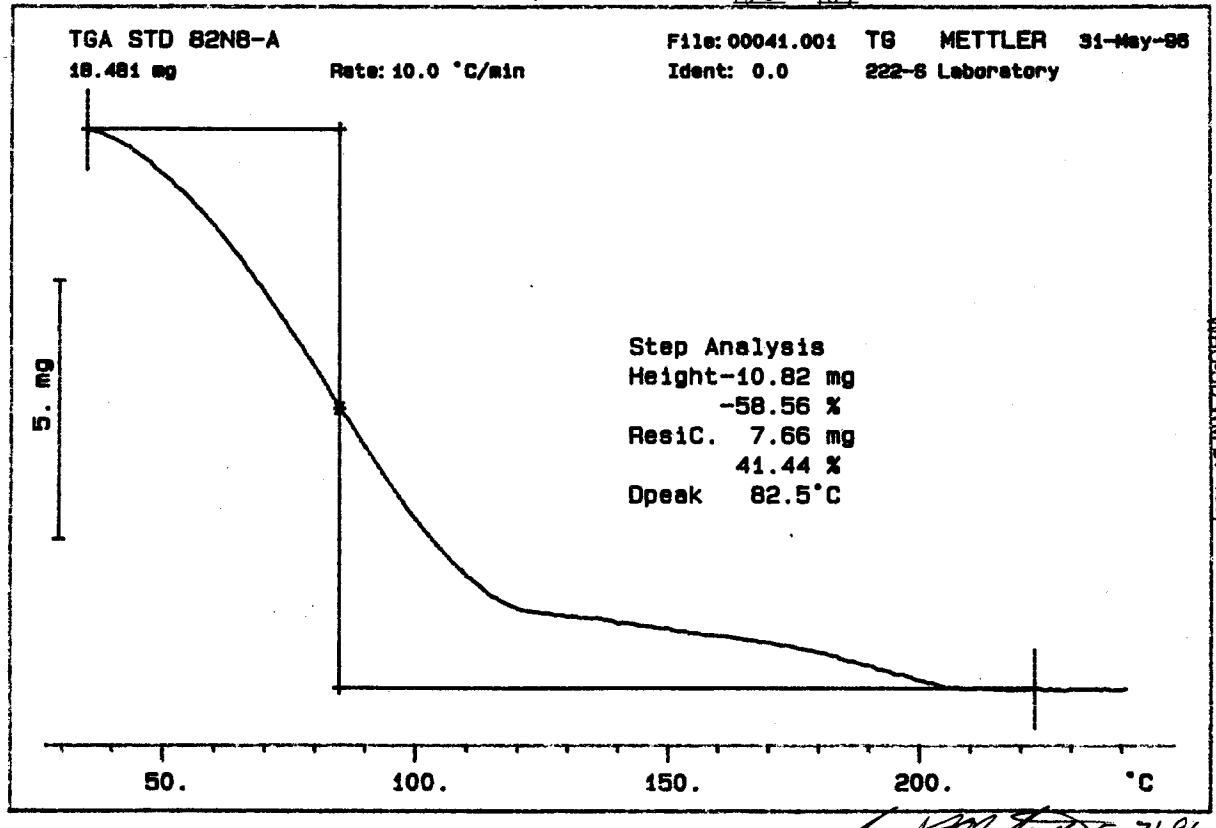
RHtech 6-4-96
Analyst Signature **Date**

Validated by HLA 6/4/96

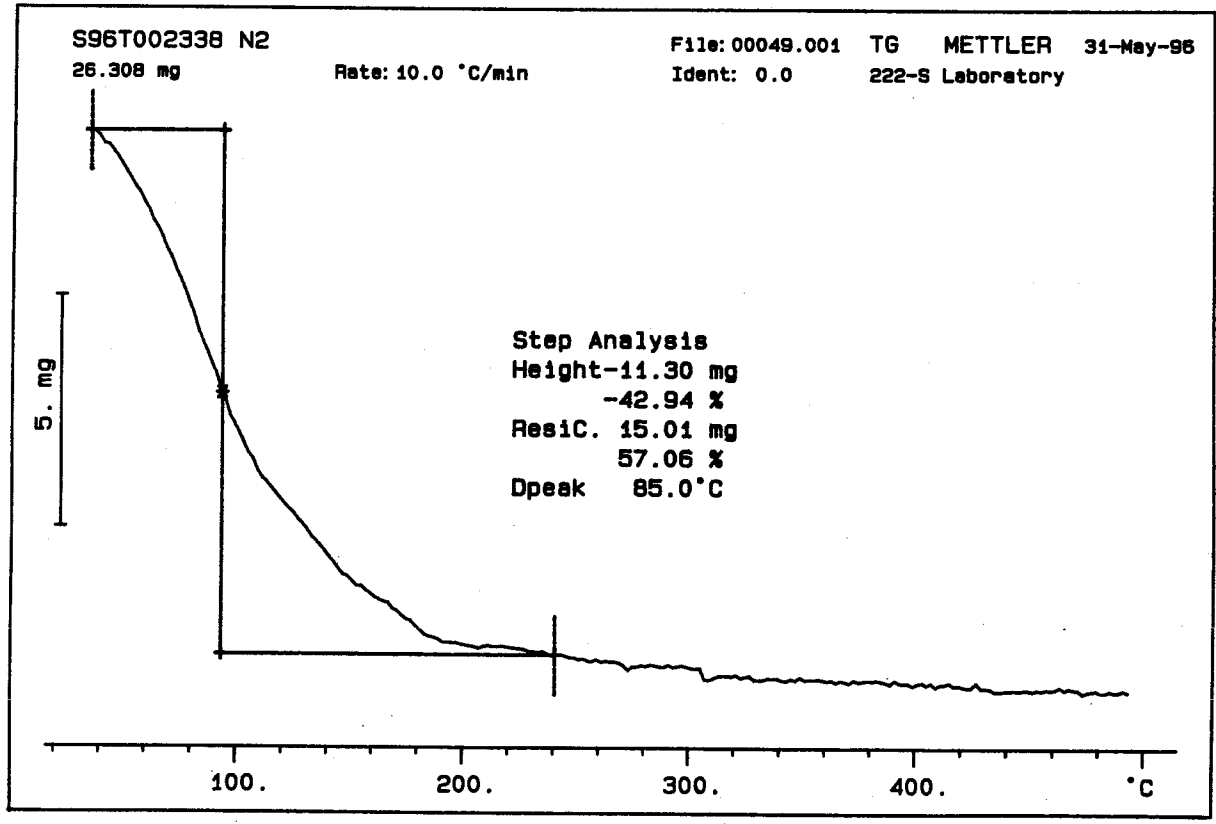
Data Entry Comments:

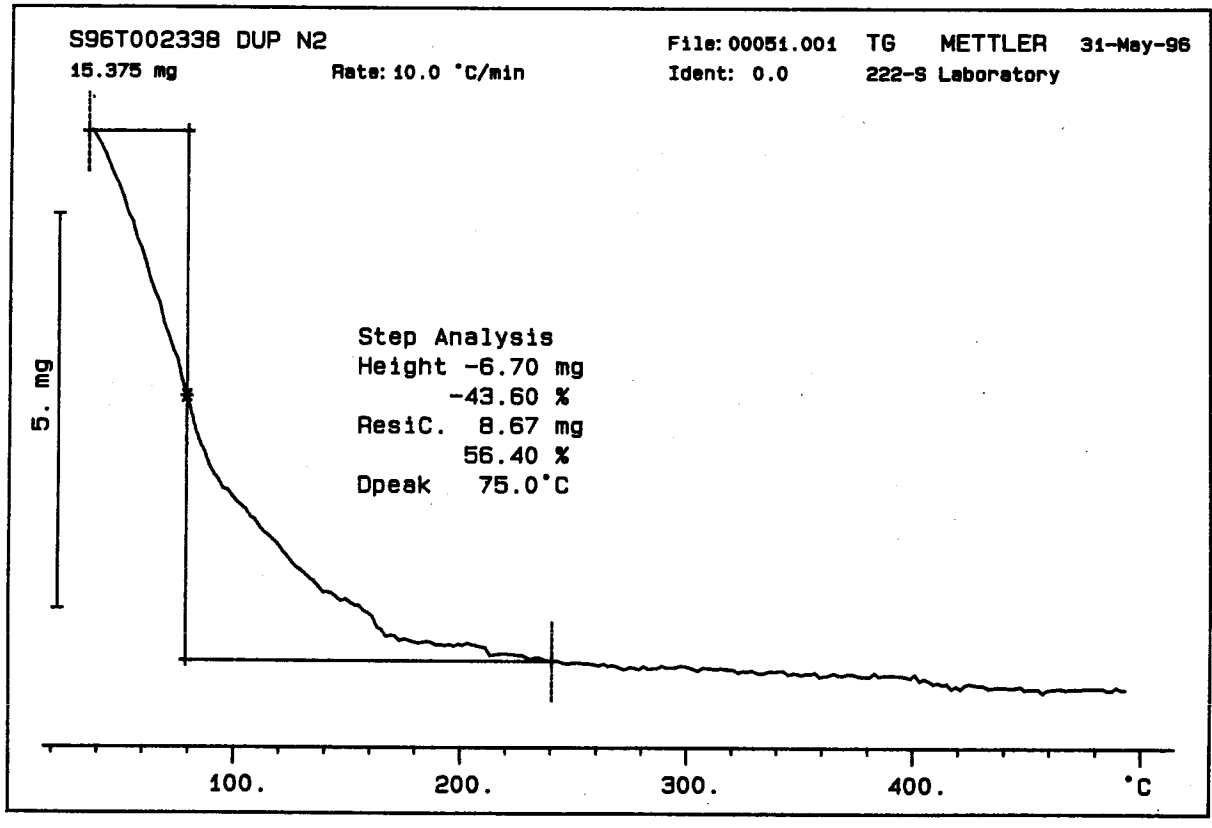
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

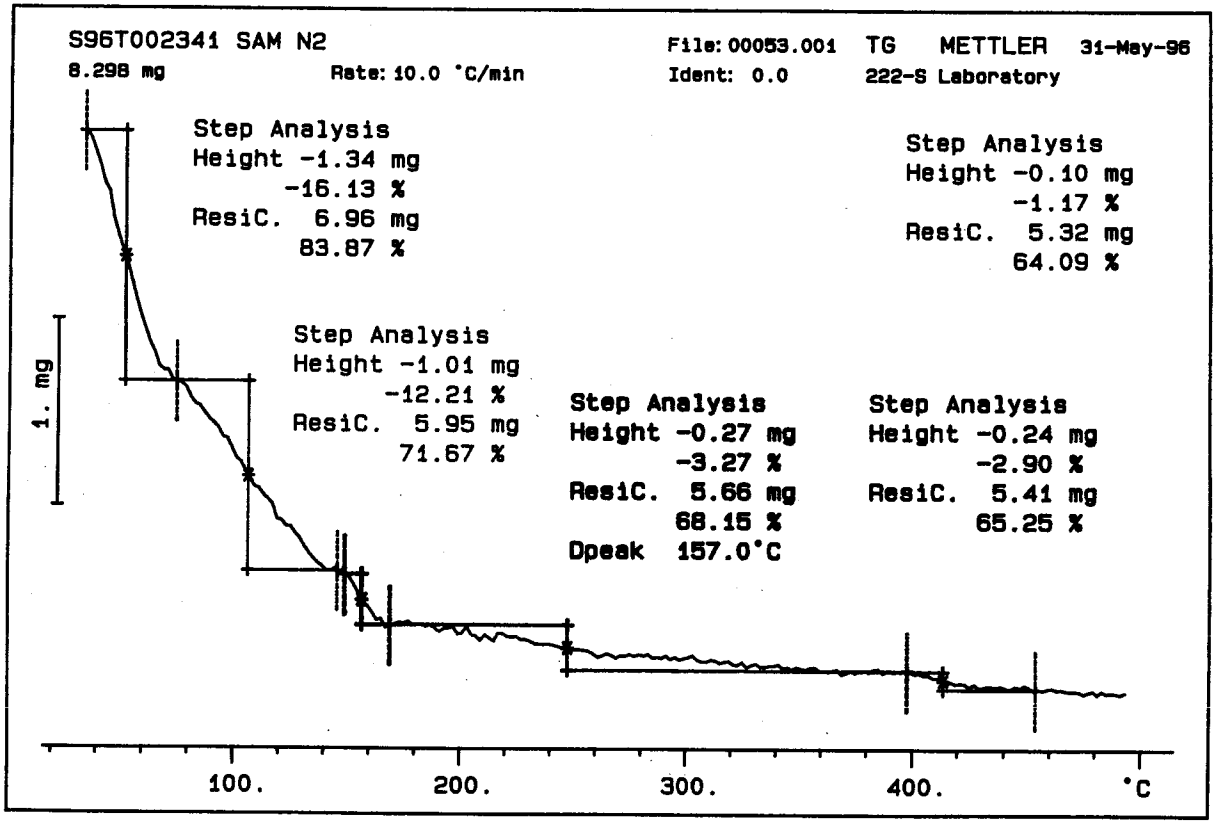
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 183 TO 187.

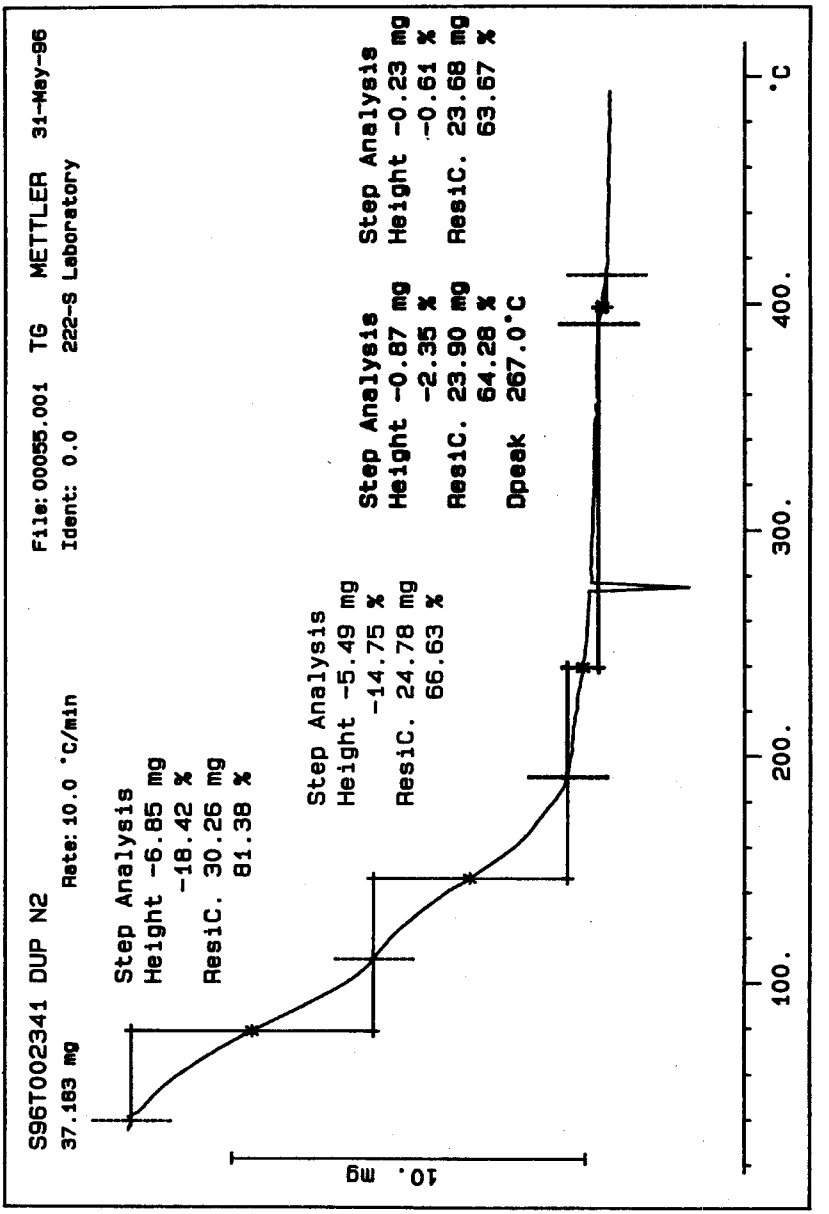


5-31-96


S96T002338 N2
26.308 mg
Rate: 10.0 °C/min
File: 00049.001 TG METTLER 31-May-96
Ident: 0.0 222-S Laboratory
5. mg
Step Analysis
Height-11.30 mg
-42.94 %
ResiC. 15.01 mg
57.06 %
Dpeak 85.0°C
100.
200.
300.
400.
°C


S96T002338 DUP N2
15.375 mg
Rate: 10.0 °C/min
File: 00051.001 TG METTLER 31-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -6.70 mg
-43.60 %
ResiC. 8.67 mg
56.40 %
Dpeak 75.0°C
5. mg
100.
200.
300.
400.
°C


S96T002341 SAM N2
8.298 mg
Rate: 10.0 °C/min
File: 00053.001
Ident: 0.0
TG METTLER 31-May-96
222-S Laboratory
Step Analysis
Height -1.34 mg
-16.13 %
ResiC. 6.96 mg
83.87 %
Step Analysis
Height -0.10 mg
-1.17 %
ResiC. 5.32 mg
64.09 %
Step Analysis
Height -1.01 mg
-12.21 %
ResiC. 5.95 mg
71.67 %
Step Analysis
Height -0.27 mg
-3.27 %
ResiC. 5.66 mg
68.15 %
Dpeak 157.0°C
Step Analysis
Height -0.24 mg
-2.90 %
ResiC. 5.41 mg
65.25 %
1. mg
100.
200.
300.
400.
°C


S96T002341 DUP N2
37.183 mg
Rate: 10.0 °C/min
File: 00055.001 TG METTLER 31-May-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -6.85 mg
-18.42 %
ResiC. 30.26 mg
81.38 %
Step Analysis
Height -5.49 mg
-14.75 %
ResiC. 24.78 mg
66.63 %
Step Analysis
Height -0.87 mg
-2.35 %
ResiC. 23.90 mg
64.28 %
Dpeak 267.0°C
Step Analysis
Height -0.23 mg
-0.61 %
ResiC. 23.68 mg
63.67 %
10. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9252

Analyst: ADP **Instrument:** TGA0 3 **Book #** 82N8A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-03	SOLID	59.2	58.29*	N/A	%
96000536	U-102	2 SAMPLE	S96T002344	0		TGA-03	SOLID	N/A	22.44		%
96000536	U-102	3 DUP	S96T002344	0		TGA-03	SOLID	22.44	14.78	N/A	%
96000536	U-102	4 SAMPLE	S96T002347	0		TGA-03	SOLID	N/A	46.82		%
96000536	U-102	5 DUP	S96T002347	0		TGA-03	SOLID	46.82	43.20	N/A	%

Final page for worklist # 9252

See attached for Signatures
Analyst Signature Date 6/3/96 BDV

Analyst Signature Date 6-5-96

Validated by JA Anastas 6-6-96

S96T002344 ~~BDV~~ 6/3/96 will be rerun because of the shape of the thermogram being so different and the high RPD.

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# 9252

Analyst: ADO **Instrument:** TGA0 _____ **Book #** 82N8A

Method: LA-560-112 Rev/Mod C-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	_____	_____	N/A	%
96000536	U-102	2	SAMPLE	S96T002344	0		TGA-01	SOLID	N/A	_____	_____	%
96000536	U-102	3	DUP	S96T002344	0		TGA-01	SOLID	_____	_____	N/A	%
96000536	U-102	4	SAMPLE	S96T002347	0		TGA-01	SOLID	N/A	_____	_____	%
96000536	U-102	5	DUP	S96T002347	0		TGA-01	SOLID	_____	_____	N/A	%

Final page for worklist # 9252

Analyst Signature Date 05-31-96

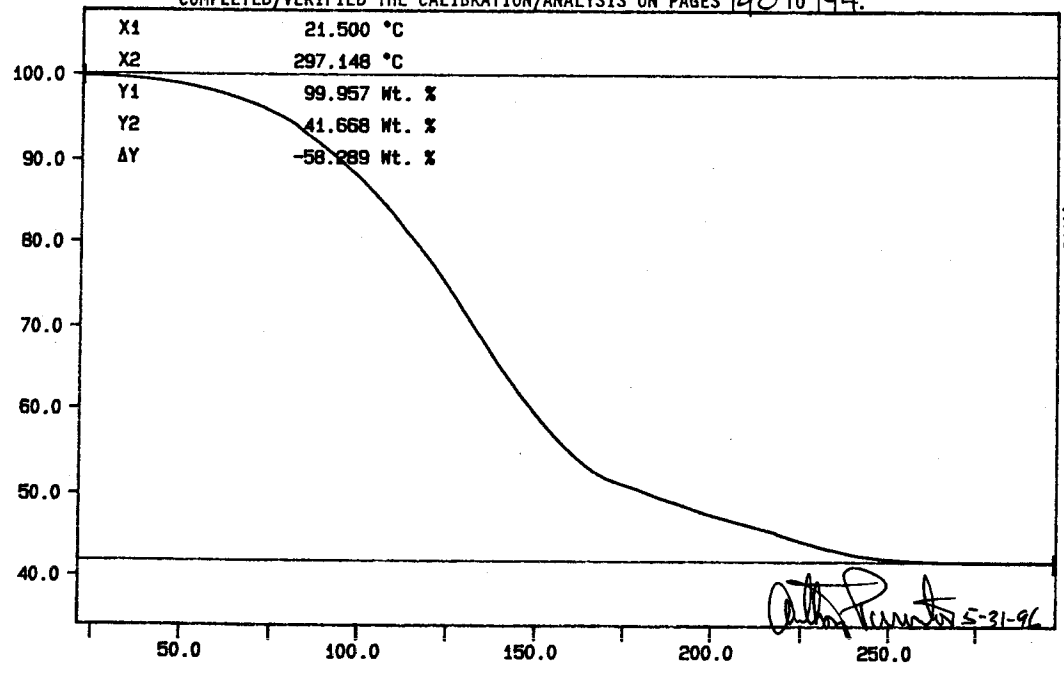
Analyst Signature Date

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: TER053101 Fri May 31 15:36:18 1996
Sample Weight: 14.833 mg
TGA STD 82N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 190 TO 194.



5-31-96

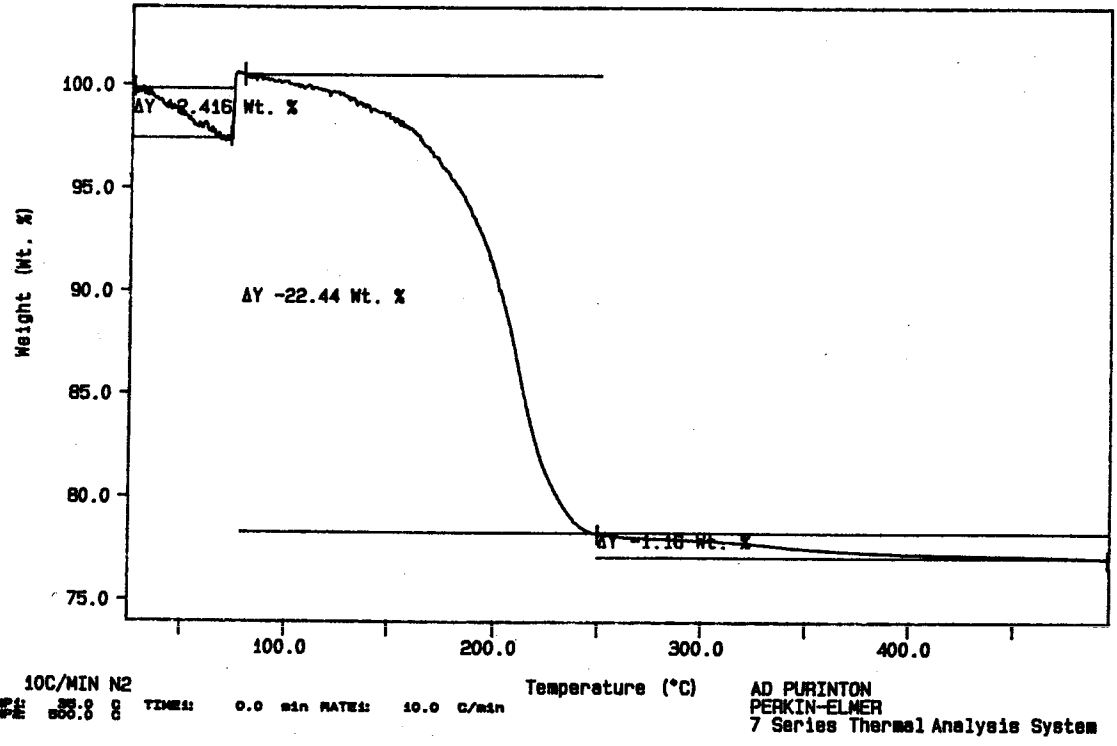
N2 10C/MIN
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System

190

WHC-SD-WM-DP-189, REV. 0

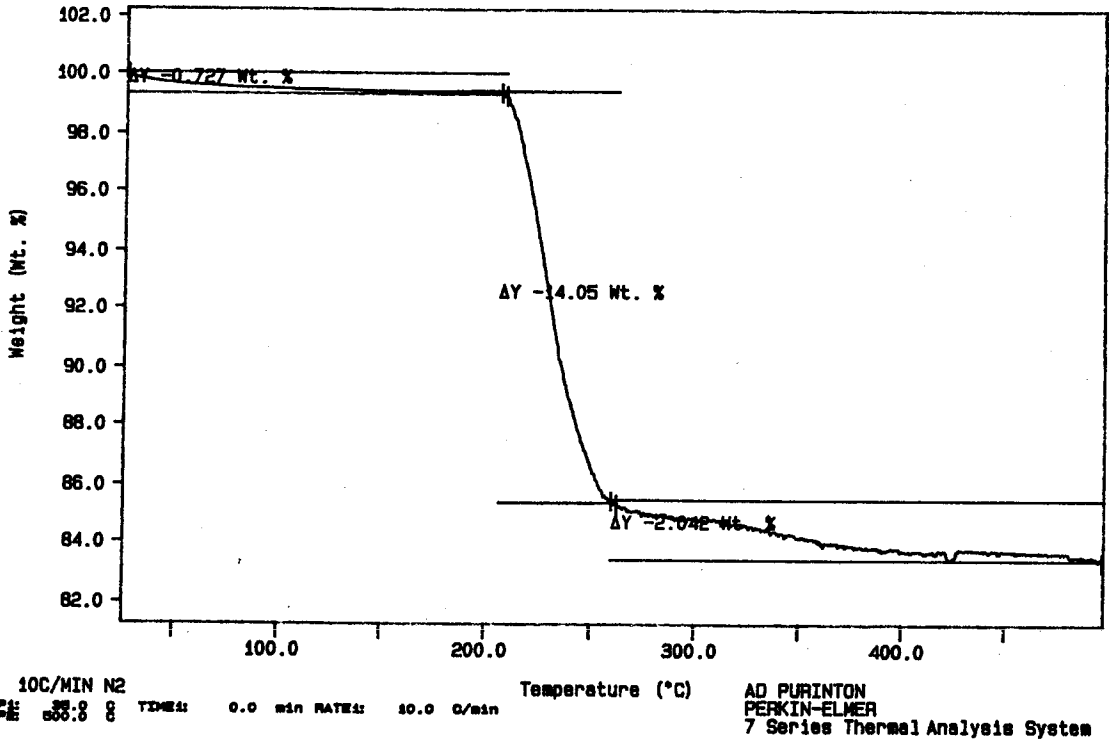
Curve 1: TGA
File info: SAM053106 Sat Jun 1 02:55:02 1996
Sample Weight: 29.404 mg
S96T002344 SAM



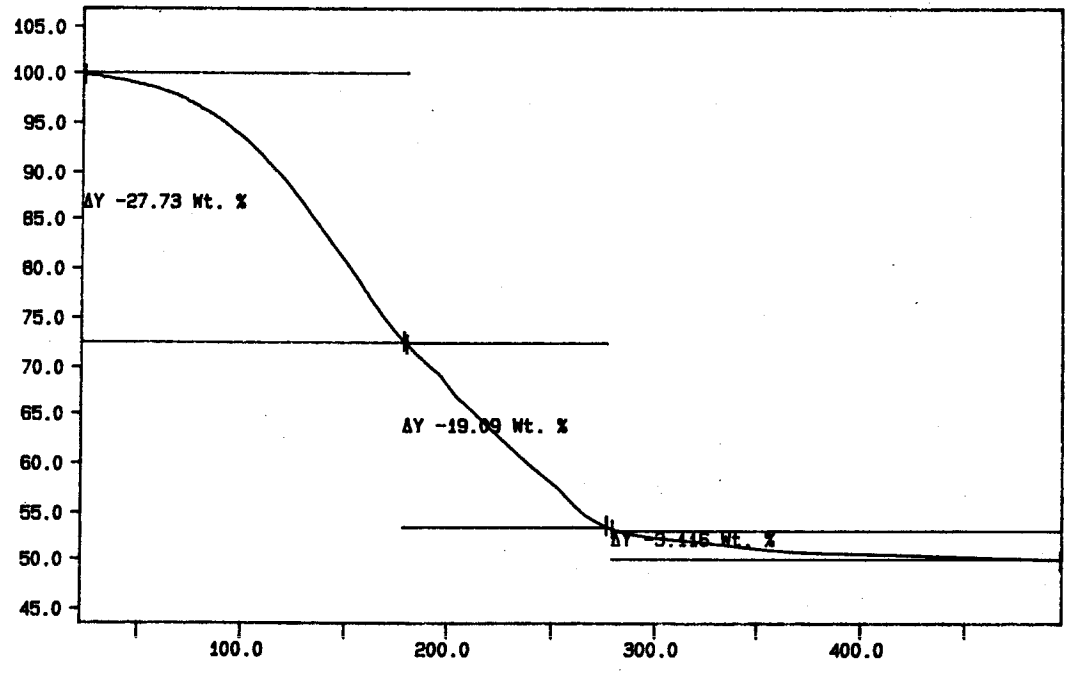
10C/MIN N2
TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min
TEMP: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System

Curve 1: TGA
File info: SAM053107 Sat Jun 1 04:06:30 1996
Sample Weight: 29.141 mg
S96T002344 SAM Ano 5-3196 Dup



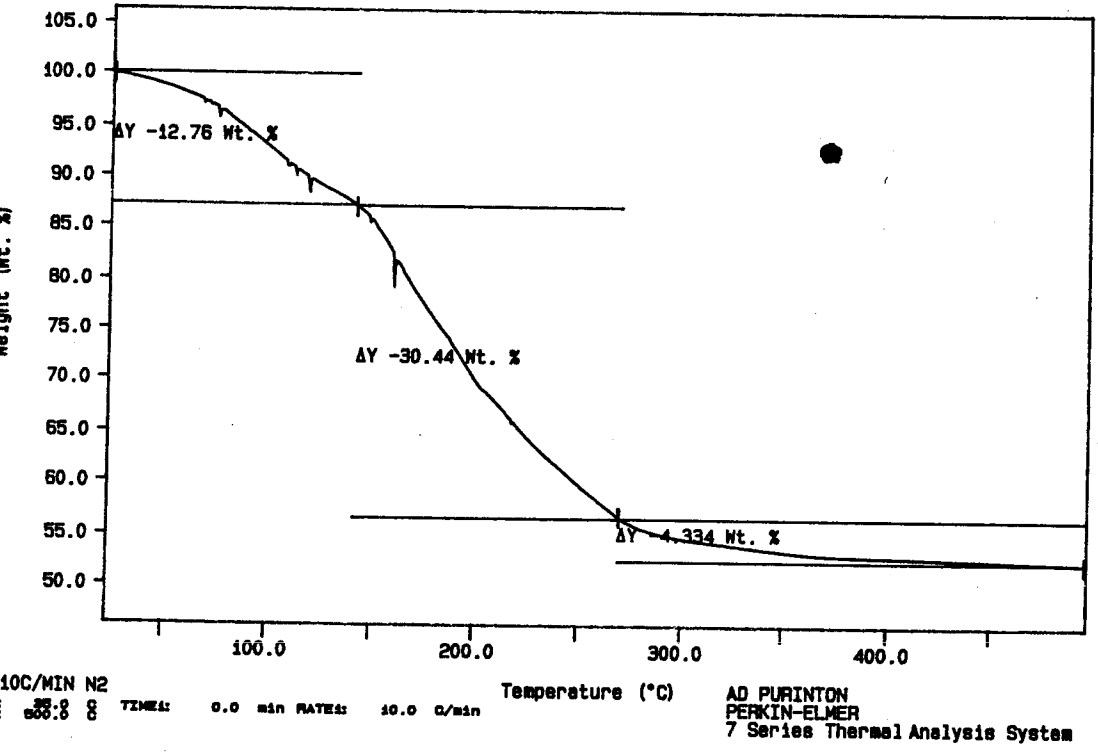
Curve 1: TGA
File info: SAM053103 Fri May 31 23:25:16 1996
Sample Weight: 21.545 mg
S96T002347 SAM



10C/MIN N2
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System

Curve 1: TGA
File info: SAM053104 Sat Jun 1 01:15:28 1996
Sample Weight: 23.128 mg
S96T002347 DUP



LABCORE Data Entry Template for Worklist# 9383

Analyst: ADO **Instrument:** TGA0 1 **Book #** 82N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.2	58.54	N/A	%
96000536	U-102	2 SAMPLE	S96T002665	0		TGA-01	SOLID	N/A	40.24		%
96000536	U-102	3 DUP	S96T002665	0		TGA-01	SOLID	40.24	32.66	N/A	%
96000536	U-102	4 SAMPLE	S96T002666	0		TGA-01	SOLID	N/A	46.26		%
96000536	U-102	5 DUP	S96T002666	0		TGA-01	SOLID	46.26	42.96	N/A	%

Final page for worklist # 9383

Analyst Signature Date 6-1-96

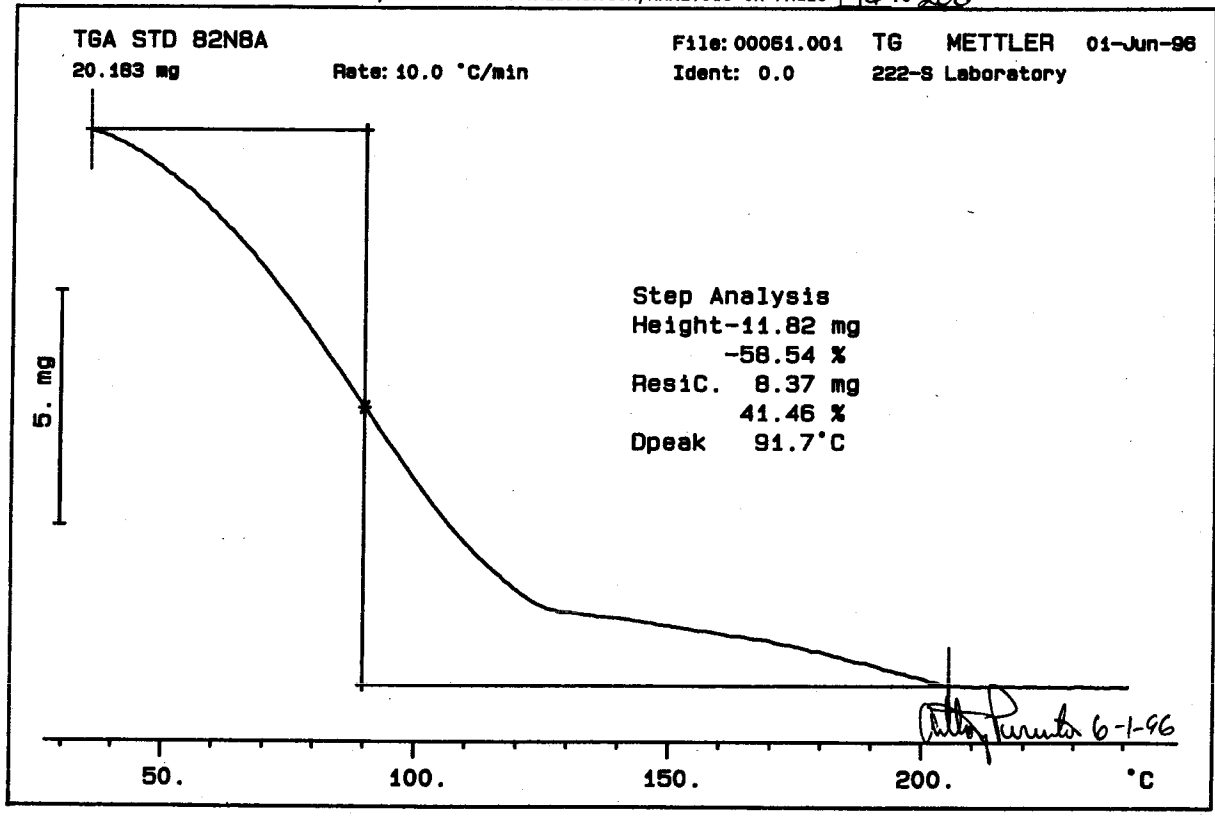
Analyst Signature Date 6-5-96

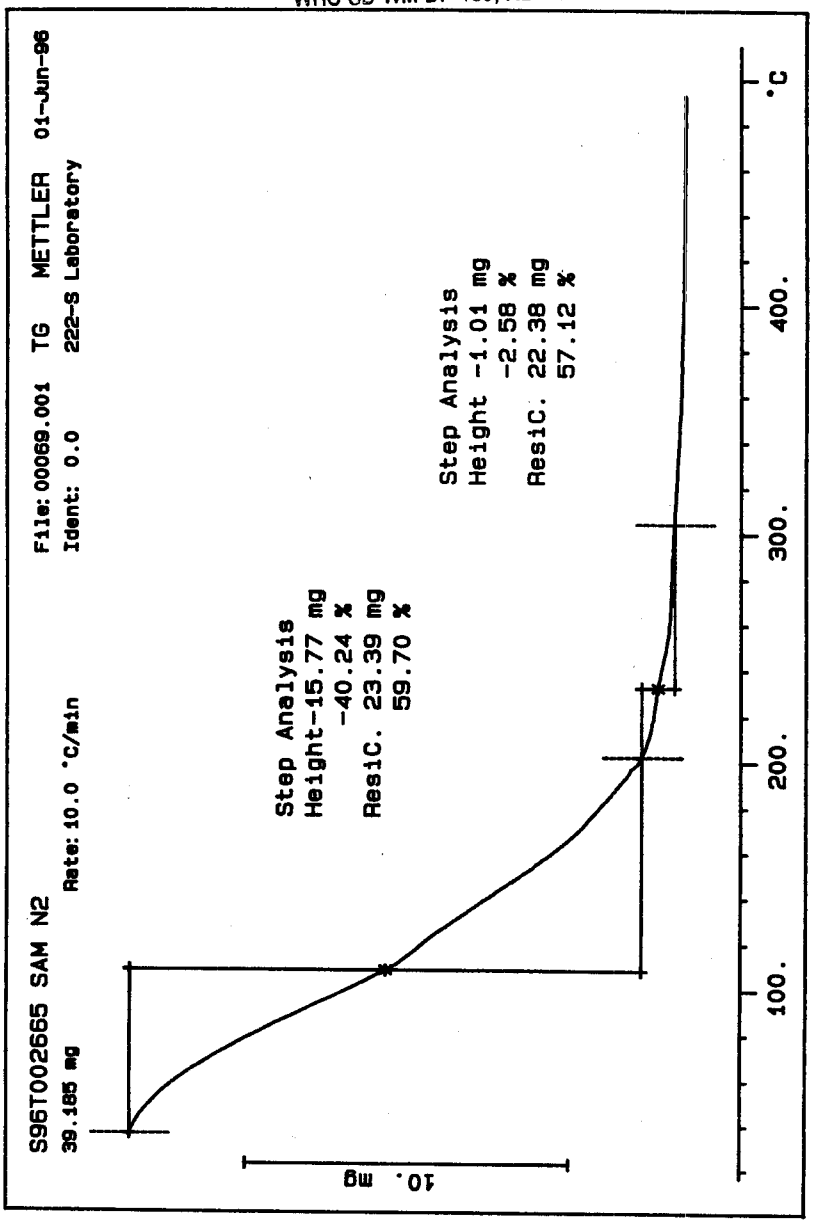
Validated by HAnastos 6.6.96

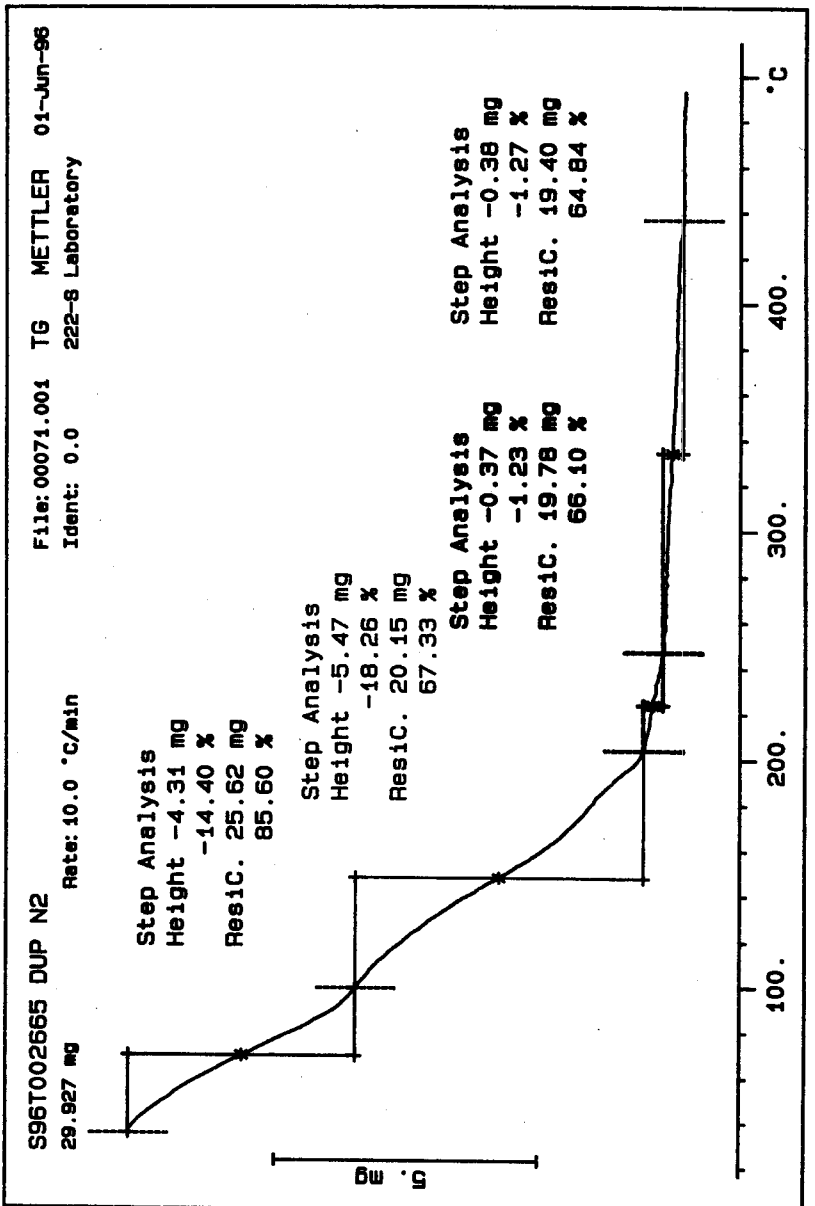
Data Entry Comments: S96T002665 duplicate results are the sum of two weight loss steps.

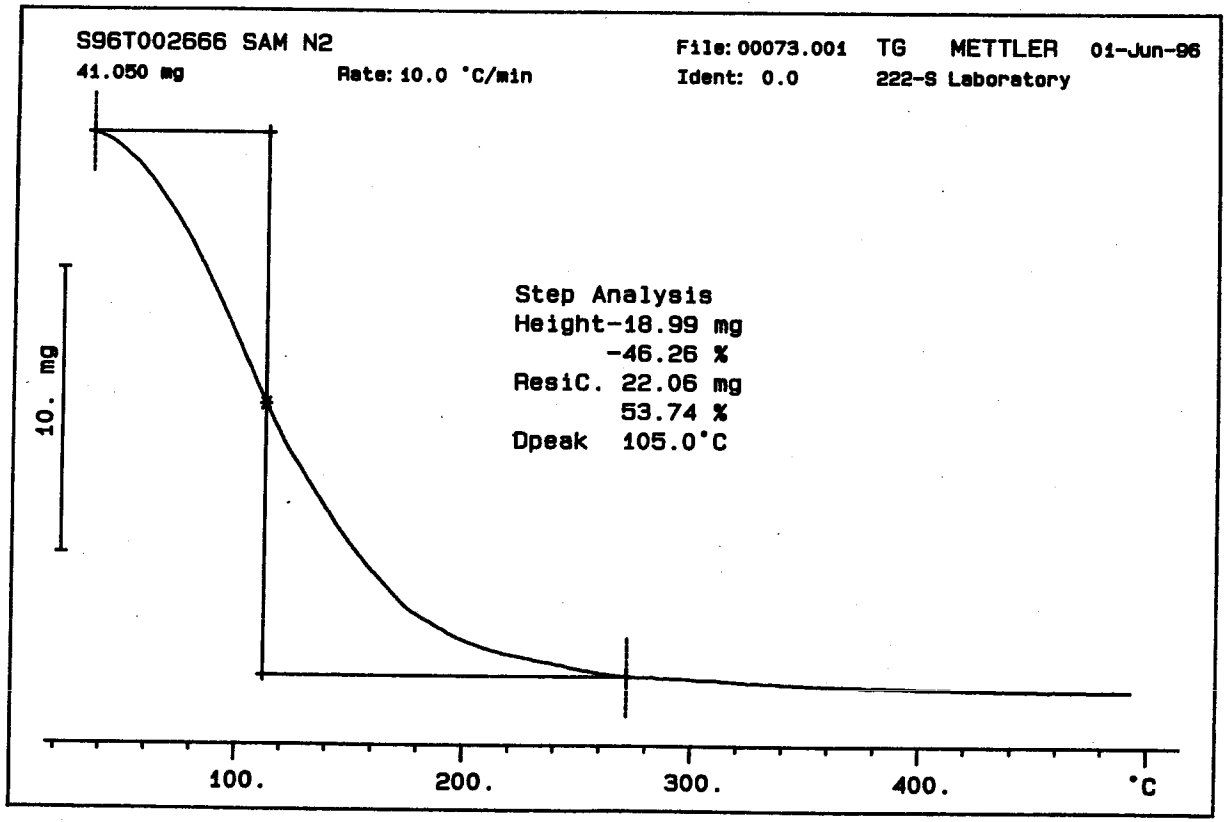
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

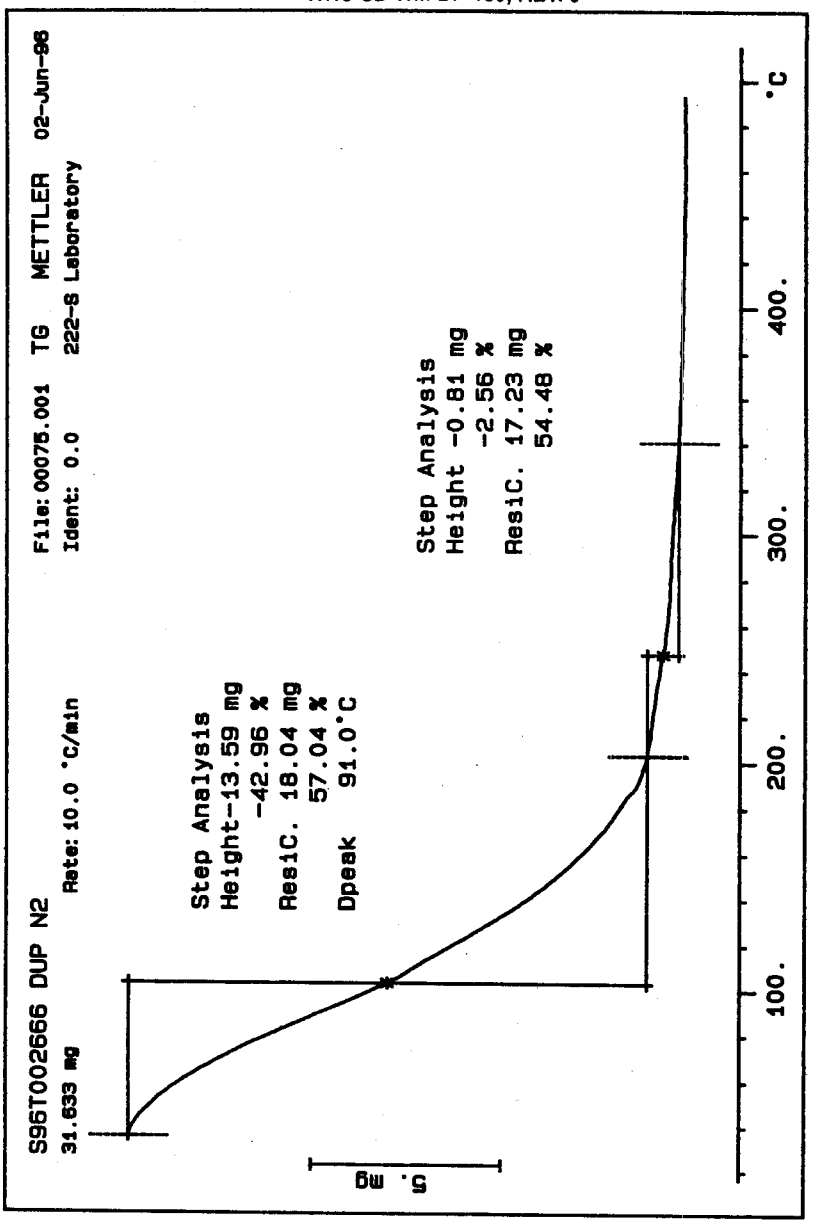
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 196 TO 200




S96T002665 SAM N2
39.185 mg
Rate: 10.0 °C/min
File: 00069.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -15.77 mg
-40.24 %
ResiC. 23.39 mg
59.70 %
Step Analysis
Height -1.01 mg
-2.58 %
ResiC. 22.38 mg
57.12 %
10. mg
100.
200.
300.
400.
°C


S96T002665 DUP N2
29.927 mg
Rate: 10.0 °C/min
File: 00071.001 TG METTLER 01-Jun-96
Ident: 0.0
222-8 Laboratory
Step Analysis
Height -4.31 mg
-14.40 %
ResiC. 25.62 mg
85.60 %
Step Analysis
Height -5.47 mg
-18.26 %
ResiC. 20.15 mg
67.33 %
Step Analysis
Height -0.37 mg
-1.23 %
ResiC. 19.78 mg
66.10 %
Step Analysis
Height -0.38 mg
-1.27 %
ResiC. 19.40 mg
64.84 %
5. mg
100.
200.
300.
400.
°C


S96T002666 SAM N2
41.050 mg
Rate: 10.0 °C/min
File: 00073.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height-18.99 mg
-46.26 %
ResiC. 22.06 mg
53.74 %
Dpeak 105.0°C
10. mg
100.
200.
300.
400.
°C


S96T002666 DUP N2
31.633 mg
Rate: 10.0 °C/min
File: 00075.001 TG METTLER 02-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -13.59 mg
-42.96 %
ResiC. 18.04 mg
57.04 %
Dpeak 91.0°C
Step Analysis
Height -0.81 mg
-2.56 %
ResiC. 17.23 mg
54.48 %
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9384

Analyst: ADP **Instrument:** TGA0 1 **Book #** 82N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.2	58.42	N/A	%
96000536	U-102	2 SAMPLE	S96T002755	0		TGA-01	SOLID	N/A	41.68		%
96000536	U-102	3 DUP	S96T002755	0		TGA-01	SOLID	41.68	40.7	N/A	%

Final page for worklist # 9384

Analyst Signature 5-31-96 Date

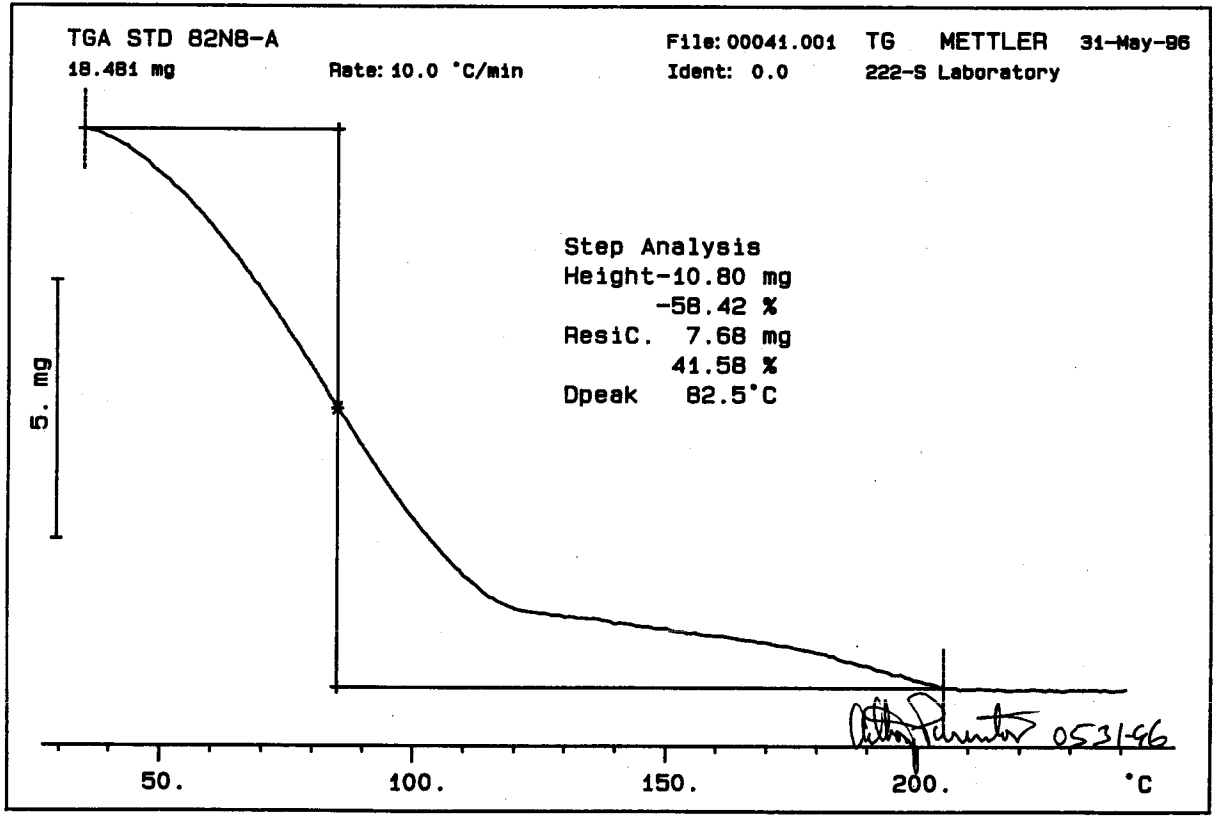
Analyst Signature 6-4-96 Date

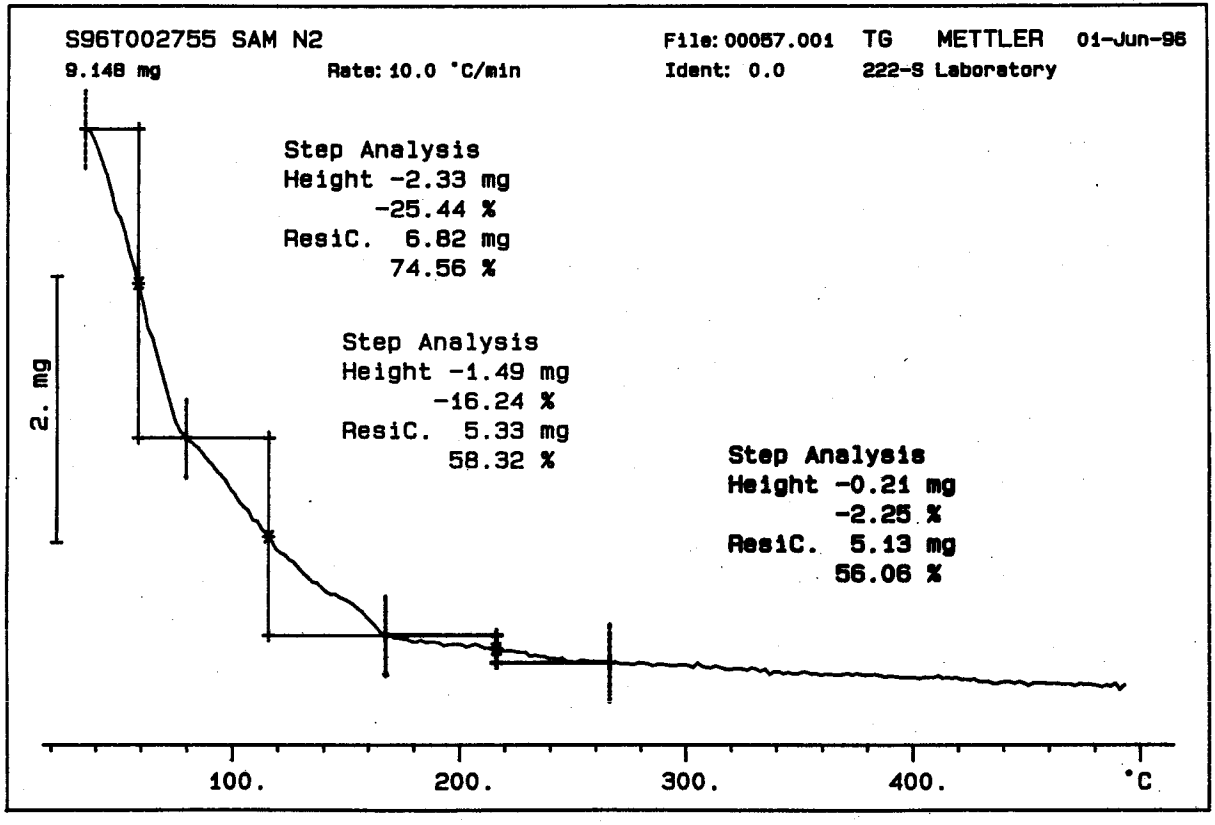
Validated by HAnastas 6/4/96

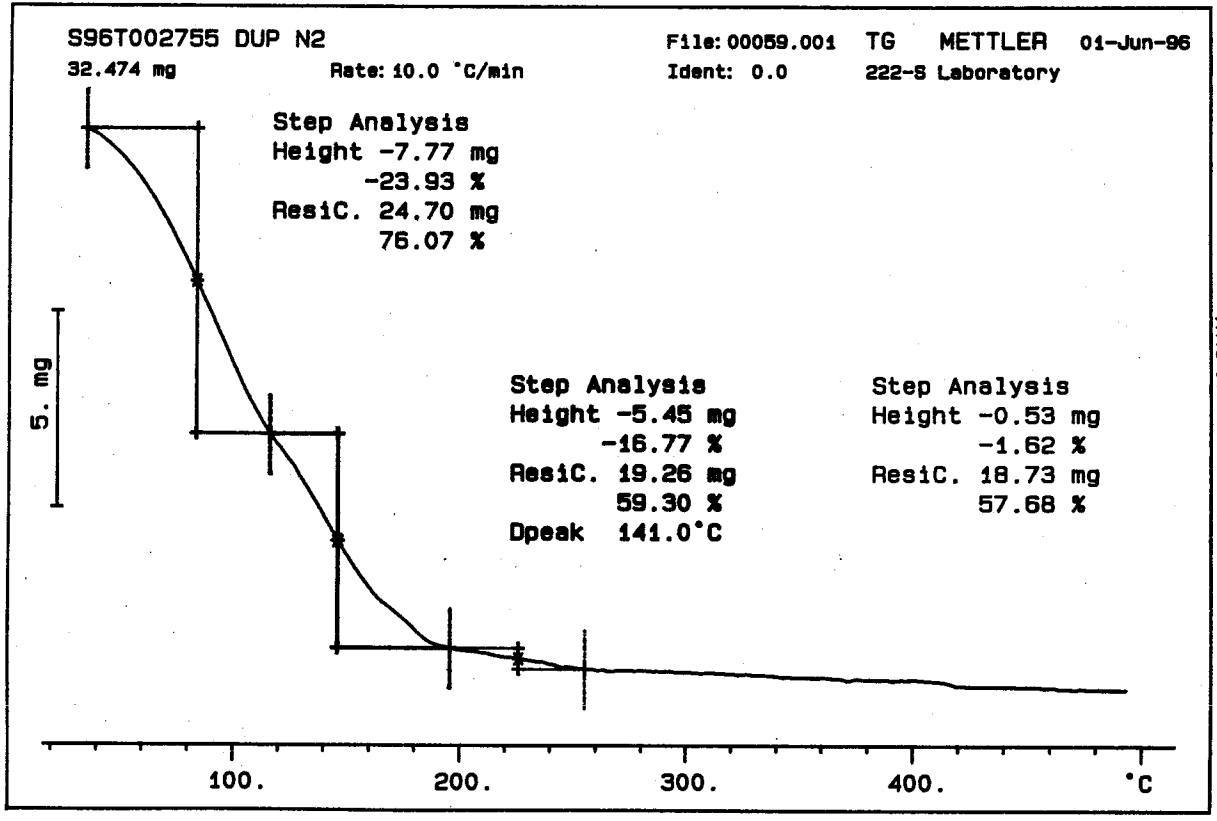
Data Entry Comments:

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 202 TO 204




S96T002755 SAM N2
9.148 mg
Rate: 10.0 °C/min
File: 00057.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -2.33 mg
-25.44 %
ResiC. 6.82 mg
74.56 %
Step Analysis
Height -1.49 mg
-16.24 %
ResiC. 5.33 mg
58.32 %
Step Analysis
Height -0.21 mg
-2.25 %
ResiC. 5.13 mg
56.06 %
2. mg
100.
200.
300.
400.
°C


S96T002755 DUP N2
32.474 mg
Rate: 10.0 °C/min
File: 00059.001
Ident: 0.0
TG METTLER 01-Jun-96
222-S Laboratory
Step Analysis
Height -7.77 mg
-23.93 %
ResiC. 24.70 mg
76.07 %
5. mg
Step Analysis
Height -5.45 mg
-16.77 %
ResiC. 19.26 mg
59.30 %
Dpeak 141.0°C
Step Analysis
Height -0.53 mg
-1.62 %
ResiC. 18.73 mg
57.68 %
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9385

Analyst: SMF **Instrument:** TGA0 1 **Book #** 8208/7

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.2	58.54	N/A	%
96000536	U-102	2 SAMPLE	S96T002500	0		TGA-01	SOLID	N/A	15.72		%
96000536	U-102	3 DUP	S96T002500	0		TGA-01	SOLID	15.72	16.48	N/A	%
96000536	U-102	4 SAMPLE	S96T002501	0		TGA-01	SOLID	N/A	17.19		%
96000536	U-102	5 DUP	S96T002501	0		TGA-01	SOLID	17.18	17.11	N/A	%

Final page for worklist # 9385

Susie M. Dalton 6-1-96
Analyst Signature Date

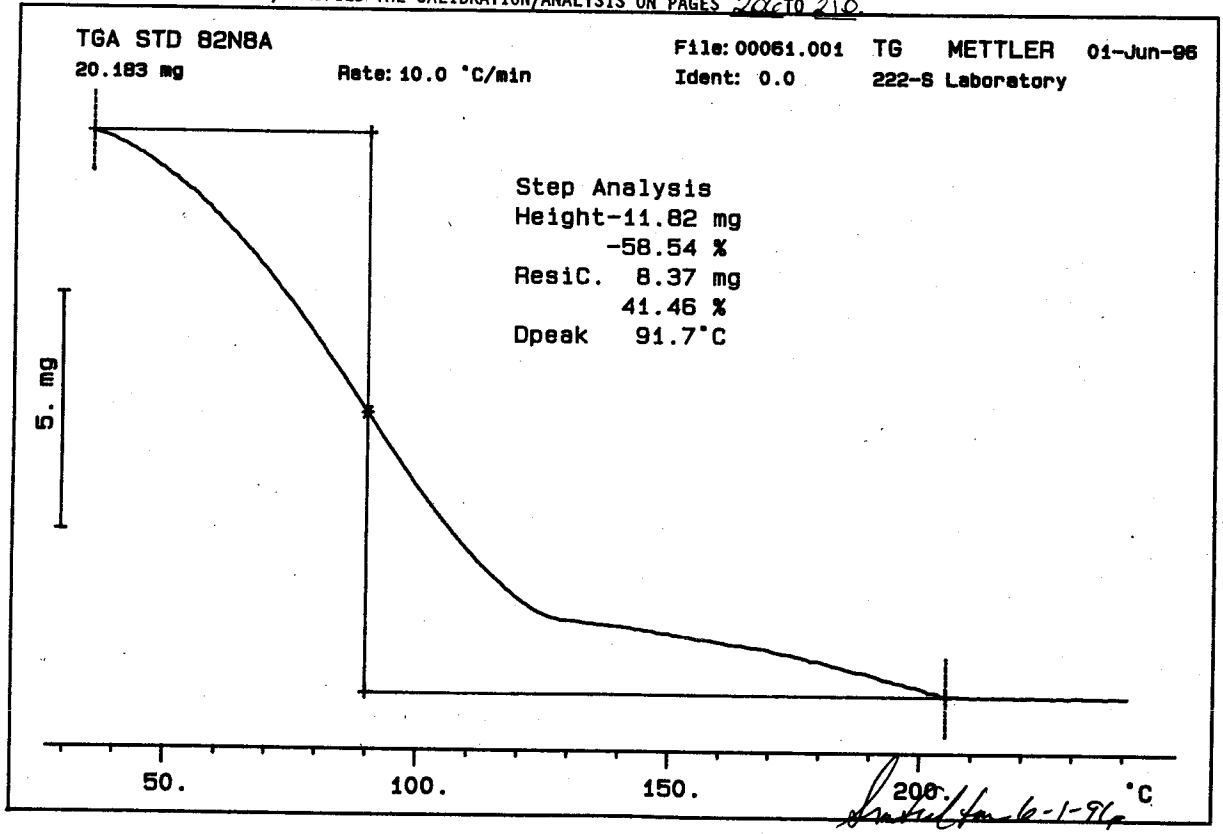
R Hobb 6-4-96
Analyst Signature Date

Validated by H Anastn 6/4/96

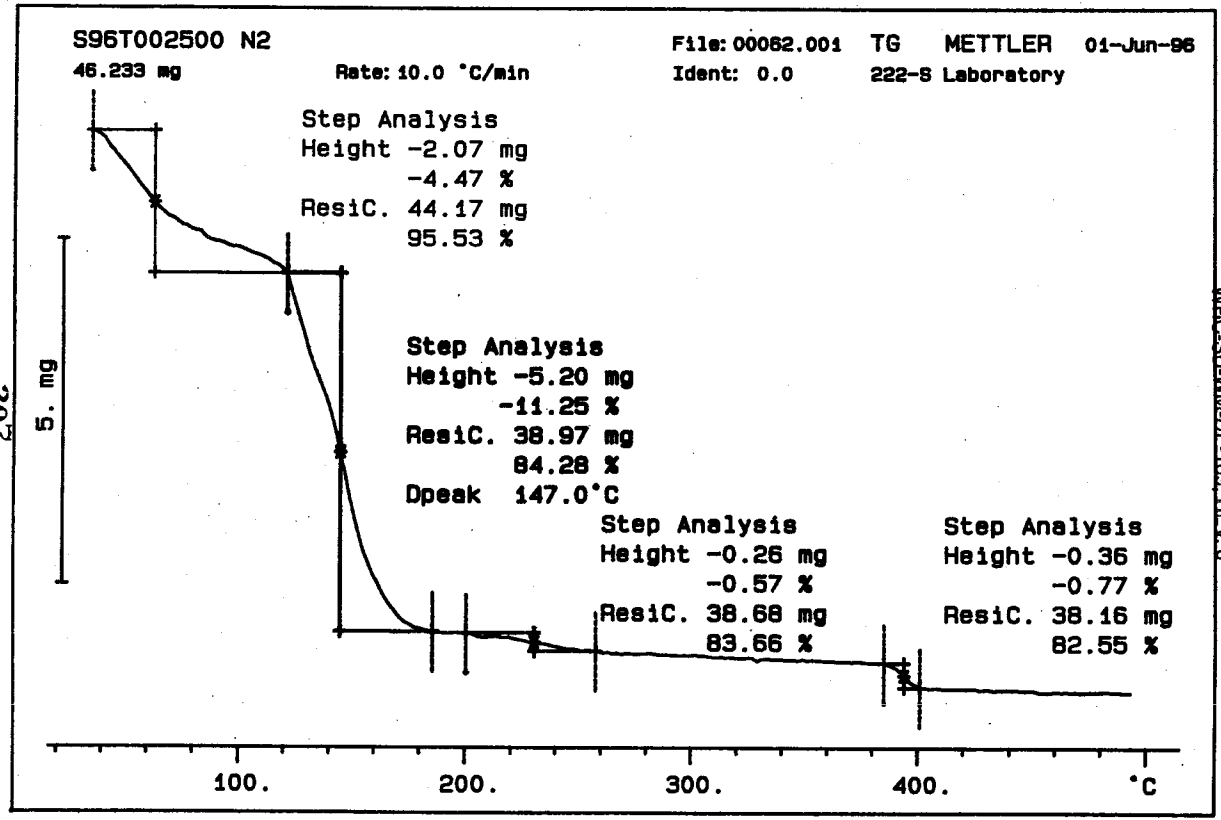
Data Entry Comments:

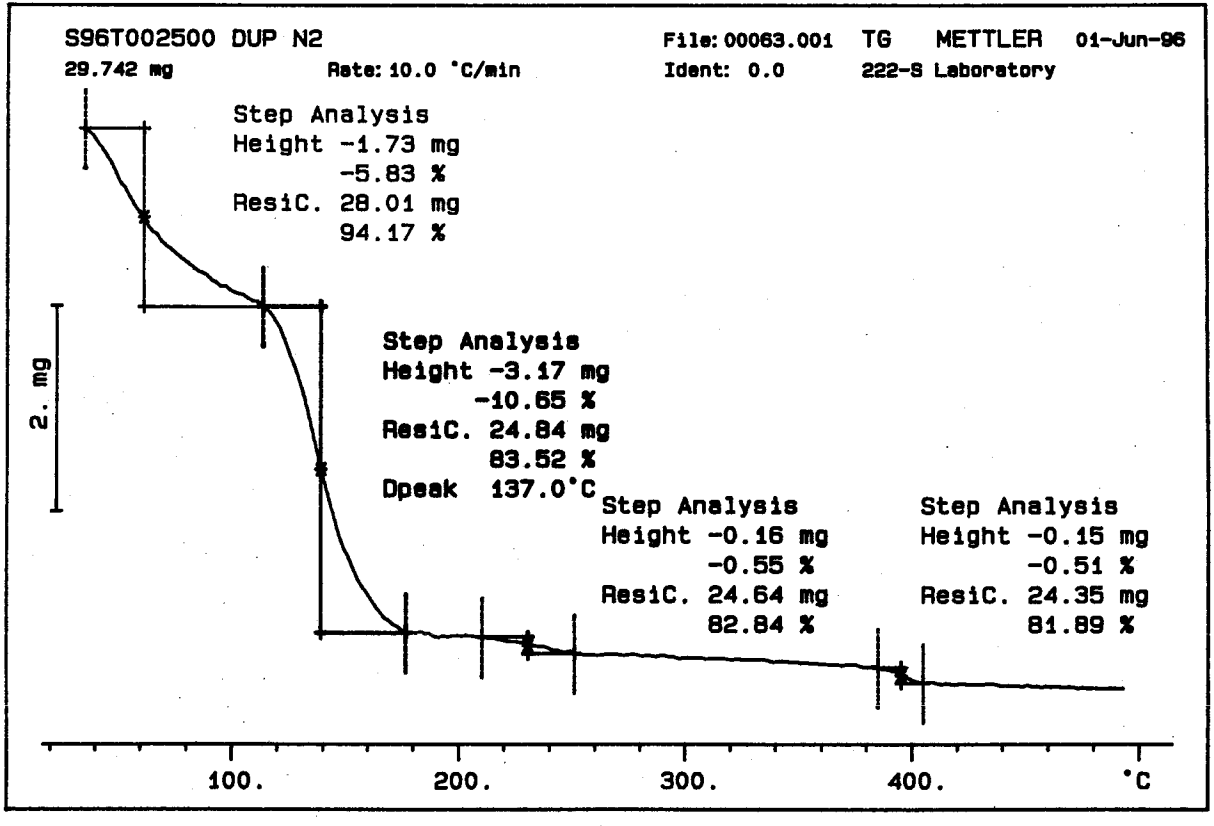
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

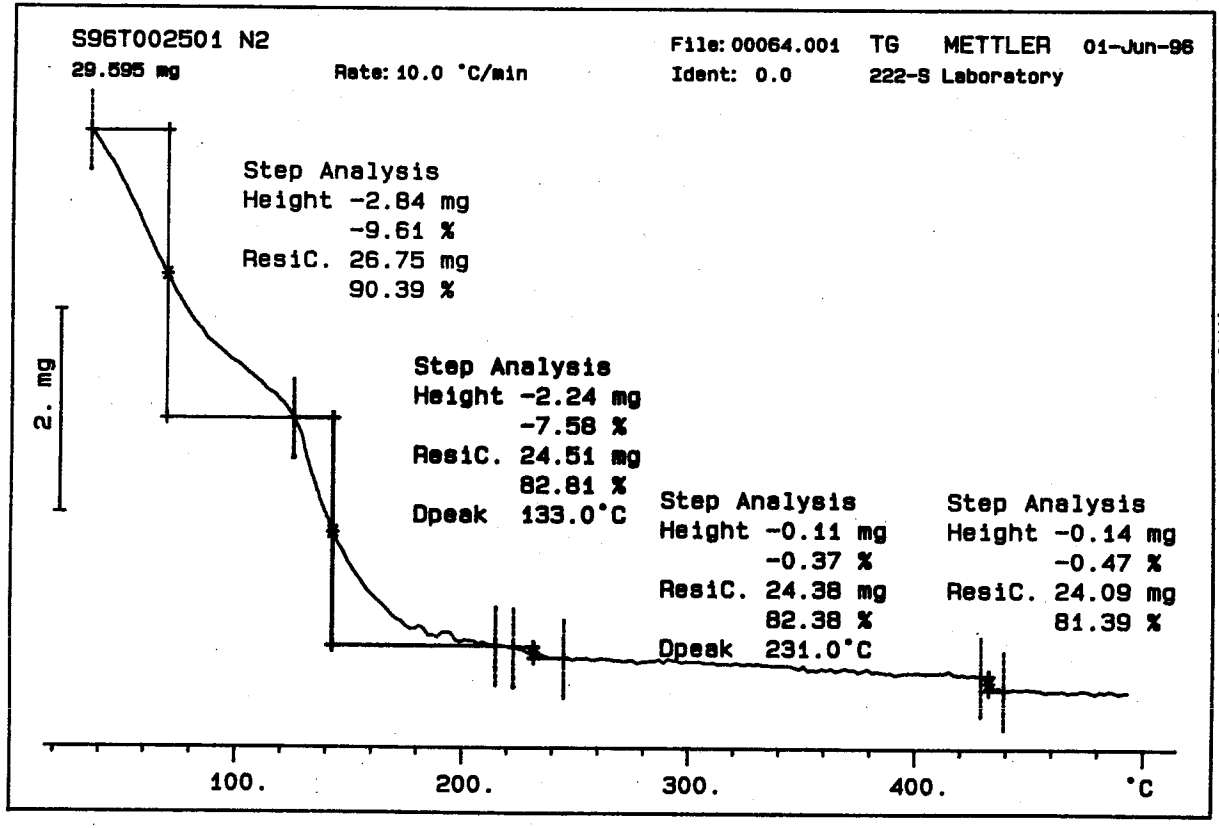
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 209 TO 210

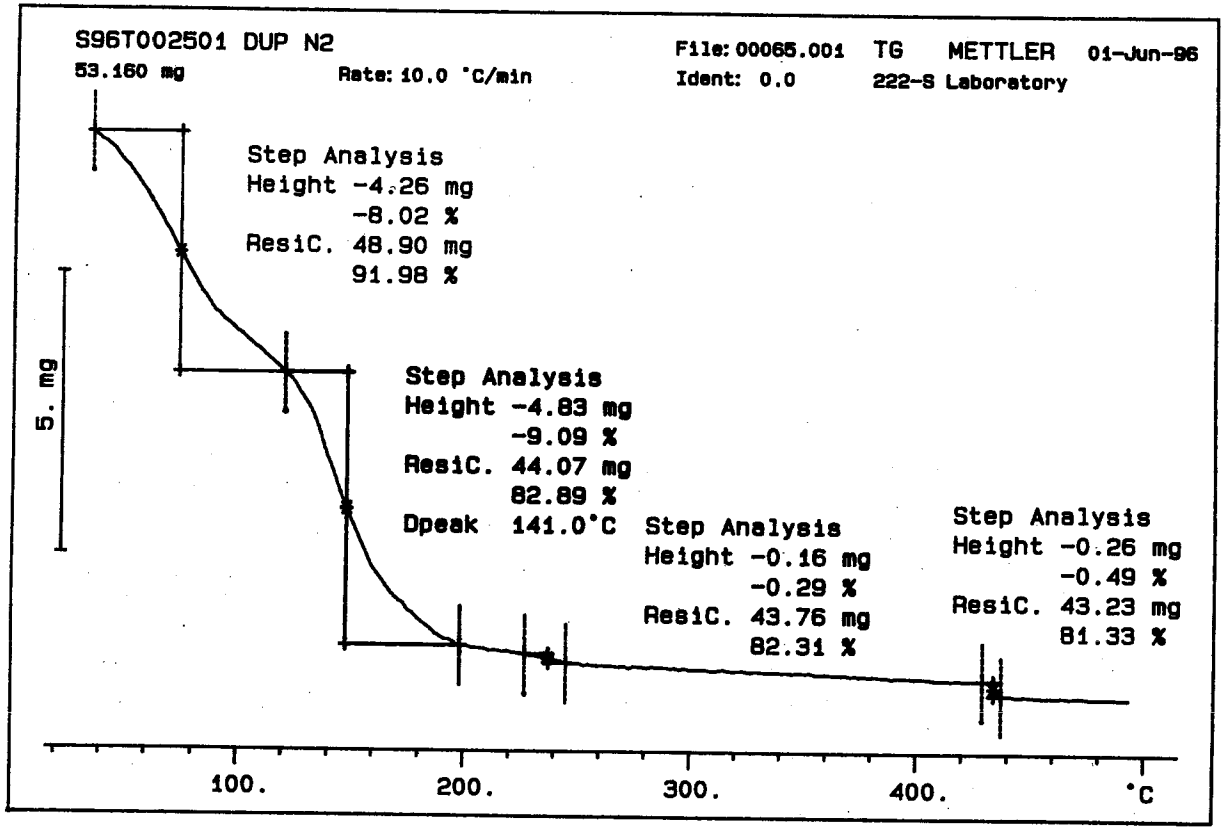


6-1-96




S96T002500 DUP N2
29.742 mg
Rate: 10.0 °C/min
File: 00063.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -1.73 mg
-5.83 %
ResiC. 28.01 mg
94.17 %
Step Analysis
Height -3.17 mg
-10.65 %
ResiC. 24.84 mg
83.52 %
Dpeak 137.0°C
Step Analysis
Height -0.16 mg
-0.55 %
ResiC. 24.64 mg
82.84 %
Step Analysis
Height -0.15 mg
-0.51 %
ResiC. 24.35 mg
81.89 %
2. mg
100.
200.
300.
400.
°C


S96T002501 N2
29.595 mg
Rate: 10.0 °C/min
File: 00064.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -2.84 mg
-9.61 %
ResiC. 26.75 mg
90.39 %
Step Analysis
Height -2.24 mg
-7.58 %
ResiC. 24.51 mg
82.81 %
Dpeak 133.0°C
Step Analysis
Height -0.11 mg
-0.37 %
ResiC. 24.38 mg
82.38 %
Dpeak 231.0°C
Step Analysis
Height -0.14 mg
-0.47 %
ResiC. 24.09 mg
81.39 %
2. mg
100.
200.
300.
400.
°C


S96T002501 DUP N2
53.160 mg
Rate: 10.0 °C/min
File: 00065.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -4.26 mg
-8.02 %
ResiC. 48.90 mg
91.98 %
Step Analysis
Height -4.83 mg
-9.09 %
ResiC. 44.07 mg
82.89 %
Dpeak 141.0°C
Step Analysis
Height -0.16 mg
-0.29 %
ResiC. 43.76 mg
82.31 %
Step Analysis
Height -0.26 mg
-0.49 %
ResiC. 43.23 mg
81.33 %
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9389

Analyst: SMF **Instrument:** TGA0 1 **Book #** 8208A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	58.54 *	N/A	%
96000536	U-102	2	SAMPLE	S96T002326	0		TGA-01	SOLID	N/A	41.5		%
96000536	U-102	3	DUP	S96T002326	0		TGA-01	SOLID	41.5	40.3	N/A	%

Final page for worklist # 9389

Susie M. Fulton 6-1-96
Analyst Signature **Date**

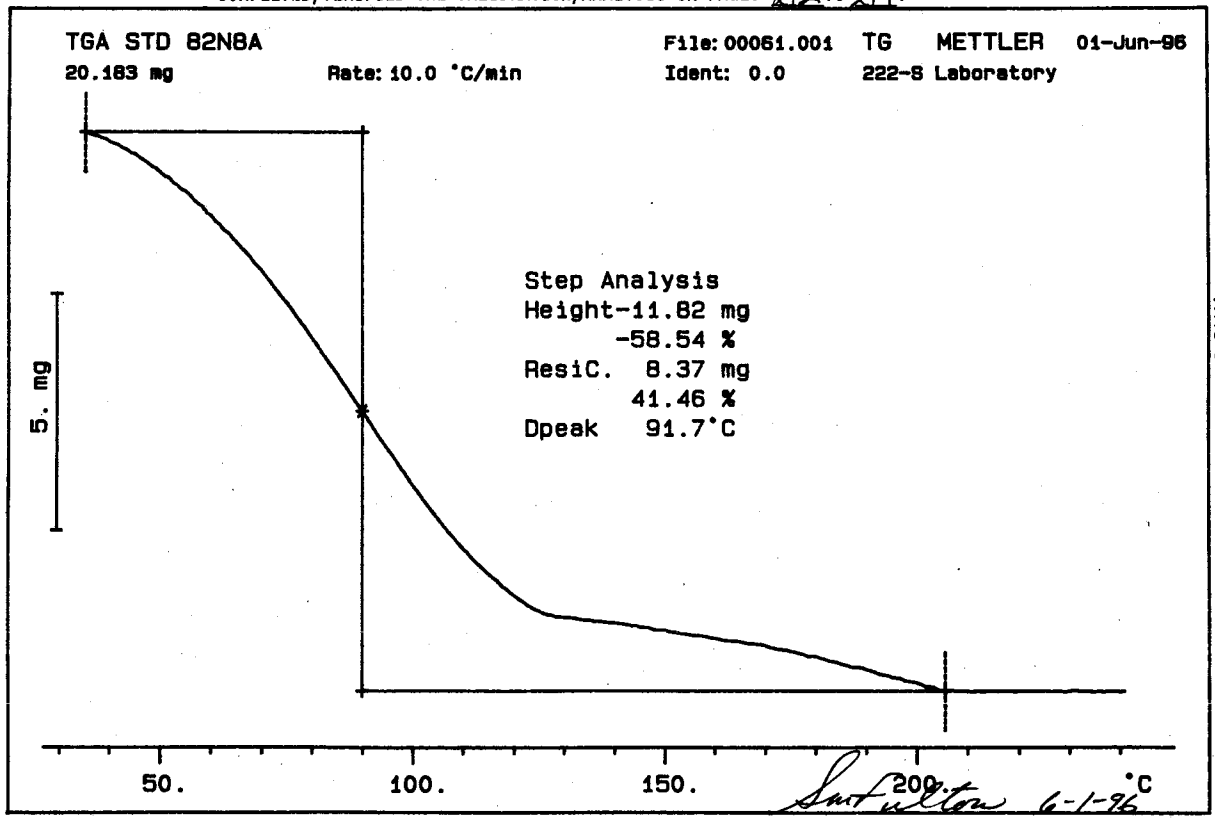
RHAnastas 6-4-96
Analyst Signature **Date**

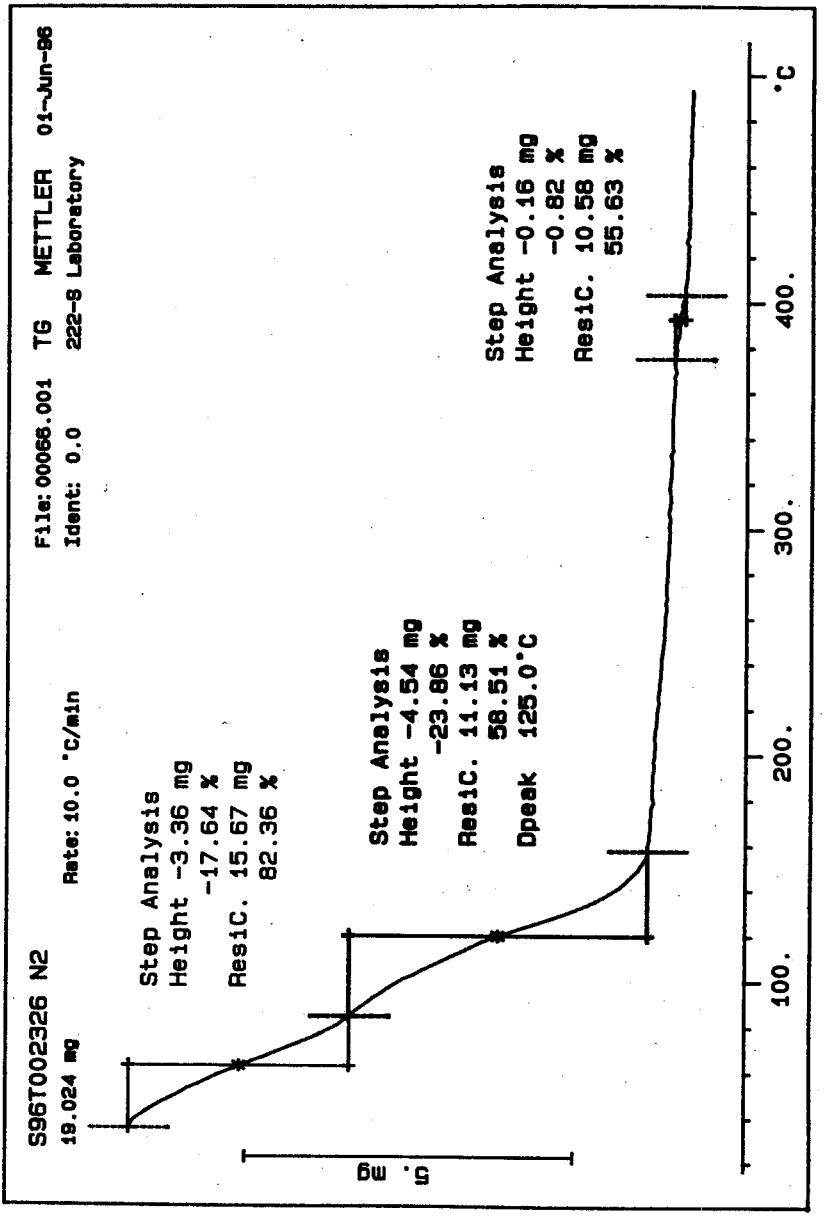
Validated by HAnastas 6/4/96

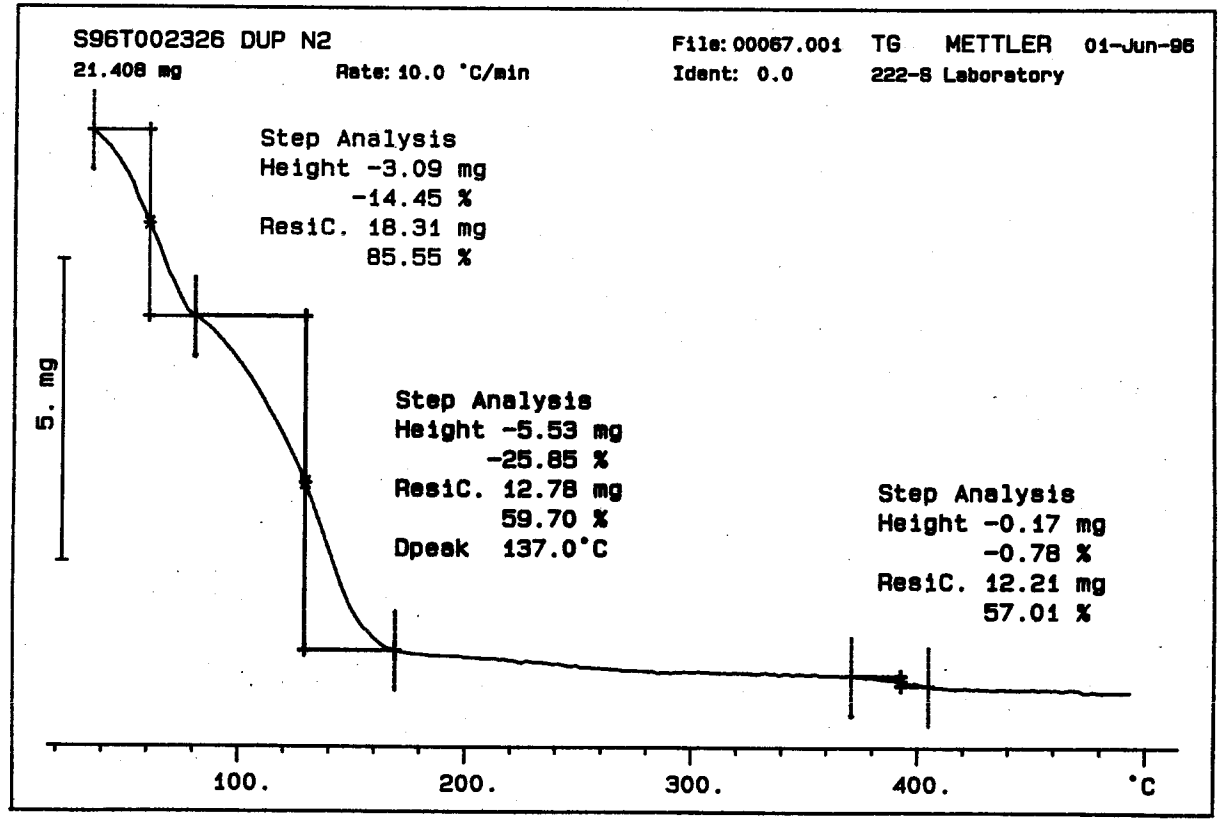
Data Entry Comments:

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 212 TO 214.




S96T002326 N2
19.024 mg
Rate: 10.0 °C/min
File: 00068.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.36 mg
-17.64 %
ResiC. 15.67 mg
82.36 %
Step Analysis
Height -4.54 mg
-23.86 %
ResiC. 11.13 mg
58.51 %
Dpeak 125.0°C
Step Analysis
Height -0.16 mg
-0.82 %
ResiC. 10.58 mg
55.63 %
5. mg
100.
200.
300.
400.
°C


S96T002326 DUP N2
21.408 mg
Rate: 10.0 °C/min
File: 00067.001 TG METTLER 01-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.09 mg
-14.45 %
ResiC. 18.31 mg
85.55 %
Step Analysis
Height -5.53 mg
-25.85 %
ResiC. 12.78 mg
59.70 %
Dpeak 137.0°C
Step Analysis
Height -0.17 mg
-0.78 %
ResiC. 12.21 mg
57.01 %
6mg 5.
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9530

Analyst: DCD **Instrument:** TGA0 1 **Book #** B2N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID	59.2	58.24 *	N/A	%
96000569	U-102	2	SAMPLE	S96T002549	0		TGA-01	LIQUID	N/A	52.29		%
96000569	U-102	3	DUP	S96T002549	0		TGA-01	LIQUID	52.29	40.23	N/A	%.
96000569	U-102	4	SAMPLE	S96T002762	0		TGA-01	LIQUID	N/A	99.03		%
96000569	U-102	5	DUP	S96T002762	0		TGA-01	LIQUID	99.03	99.87	N/A	%

Final page for worklist # 9530

David C Dunham 6-5-96
Analyst Signature Date

[signature] 6-5-96
Analyst Signature Date

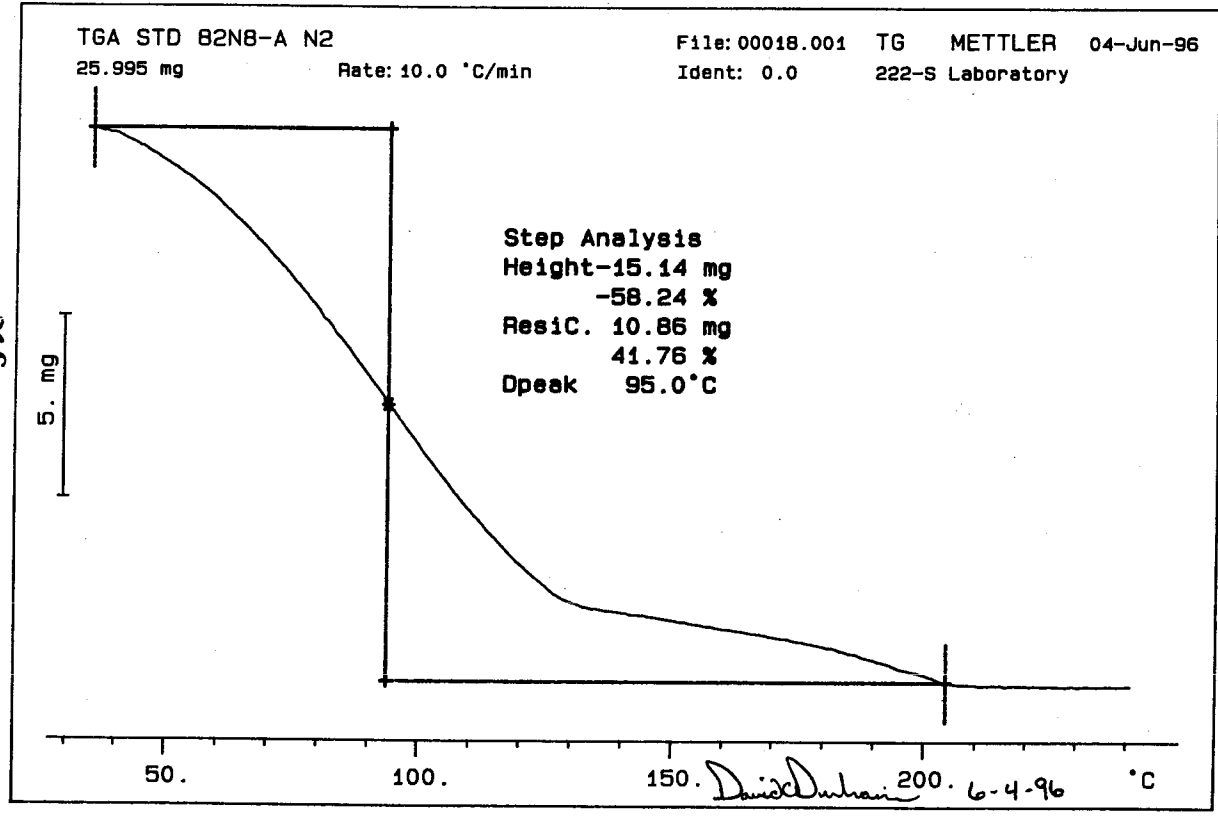
Validated by H Anastn 6.6.96

15024

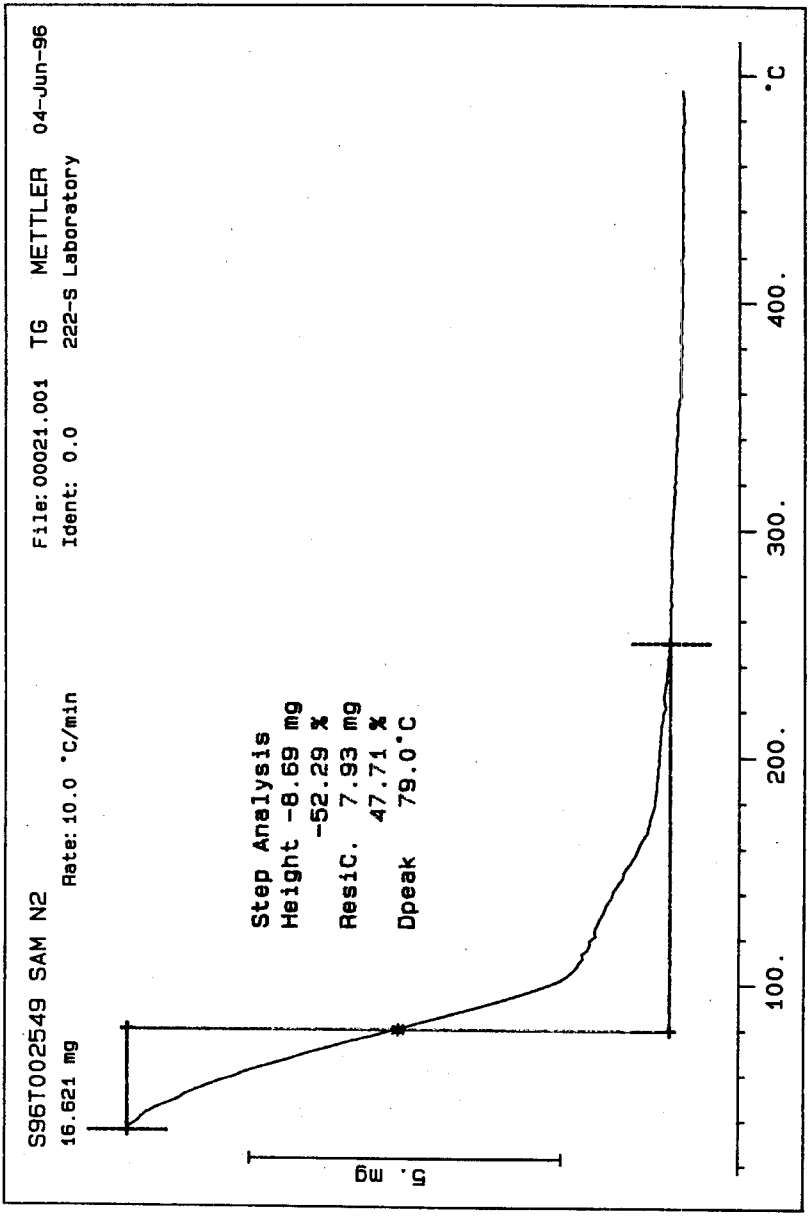
Data Entry Comments:

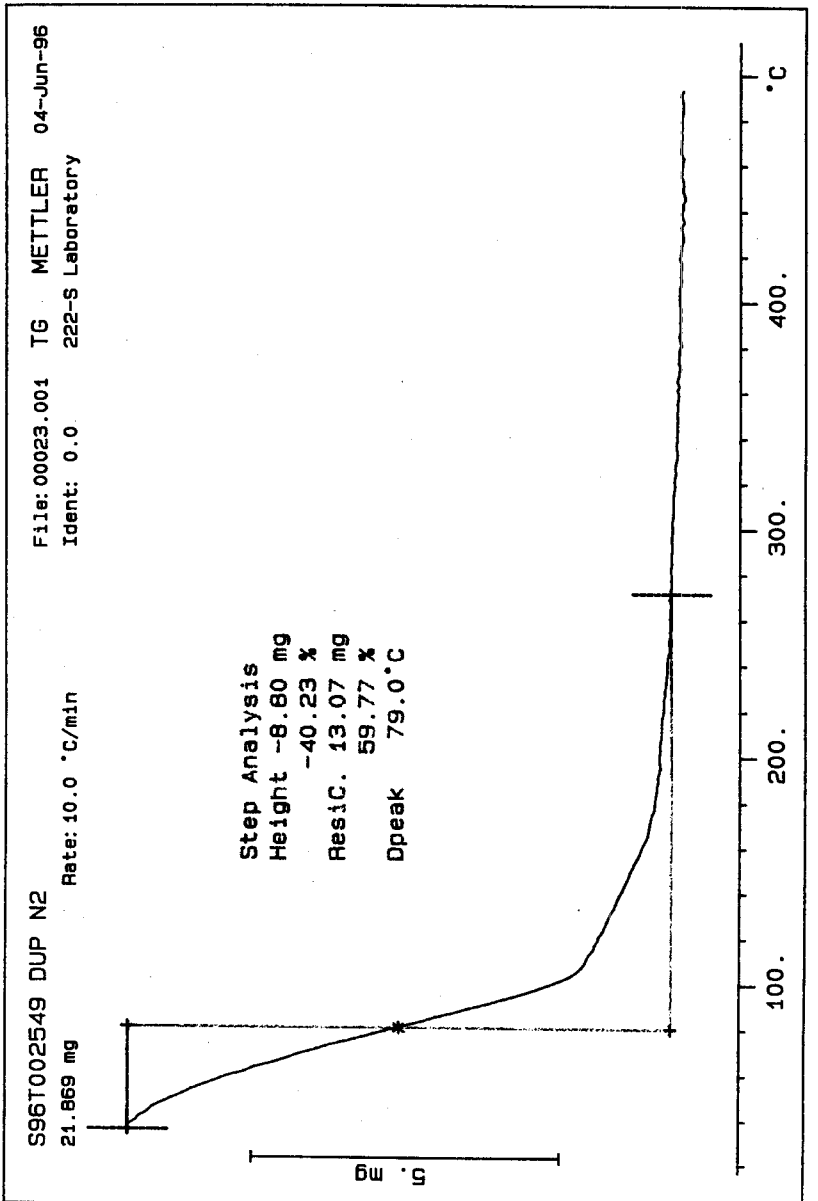
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

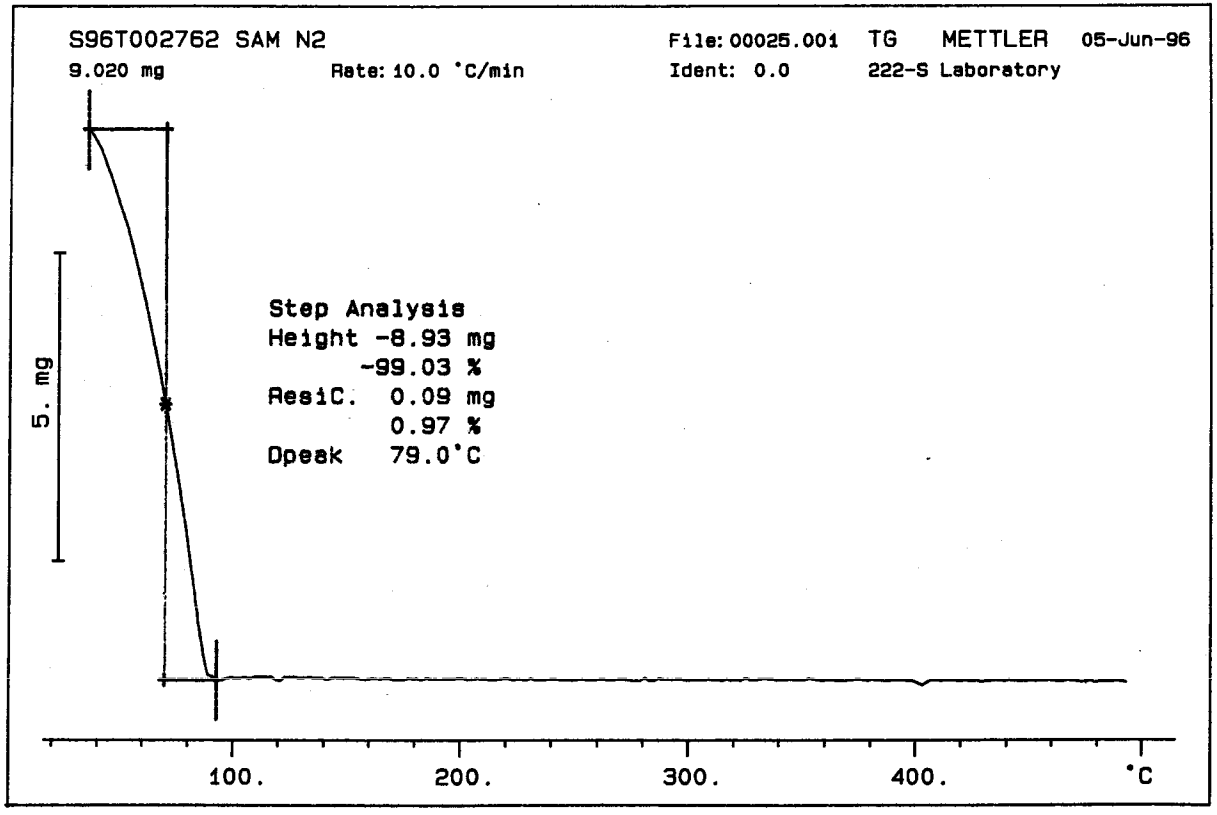
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 216 TO 220



216


S96T002549 SAM N2
16.621 mg
Rate: 10.0 °C/min
File: 00021.001 TG METTLER 04-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -8.69 mg
-52.29 %
ResiC. 7.93 mg
47.71 %
Dpeak 79.0°C
5. mg
100.
200.
300.
400.
°C


S96T002549 DUP N2
21.869 mg
Rate: 10.0 °C/min
File: 00023.001 TG METTLER 04-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -8.80 mg
-40.23 %
ResiC. 13.07 mg
59.77 %
Dpeak 79.0°C
5. mg
100.
200.
300.
400.
°C


S96T002762 SAM N2
9.020 mg
Rate: 10.0 °C/min
File: 00025.001 TG METTLER 05-Jun-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -8.93 mg
-99.03 %
ResiC. 0.09 mg
0.97 %
Dpeak 79.0°C
5. mg
100.
200.
300.
400.
°C

S96T002762 DUP N2
19.459 mg
Rate: 10.0 °C/min
File: 00027.001 TG METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -19.43 mg
-99.87 %
ResiC. 0.03 mg
0.13 %
10. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9531

Analyst: DCD **Instrument:** TGA0 1 **Book #** 8ZN8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2 6/10/96 28.45	58.23	N/A	%
96000569	U-102	2	SAMPLE	S96T002632	0		TGA-01	SOLID	N/A	40.77		%
96000569	U-102	3	DUP	S96T002632	0		TGA-01	SOLID	40.77	38.20	N/A	%
96000569	U-102	4	SAMPLE	S96T002633	0		TGA-01	SOLID	N/A	33.61		%
96000569	U-102	5	DUP	S96T002633	0		TGA-01	SOLID	33.61	33.85	N/A	%

Final page for worklist # 9531

Daina C Dunham 6-5-96
Analyst Signature Date

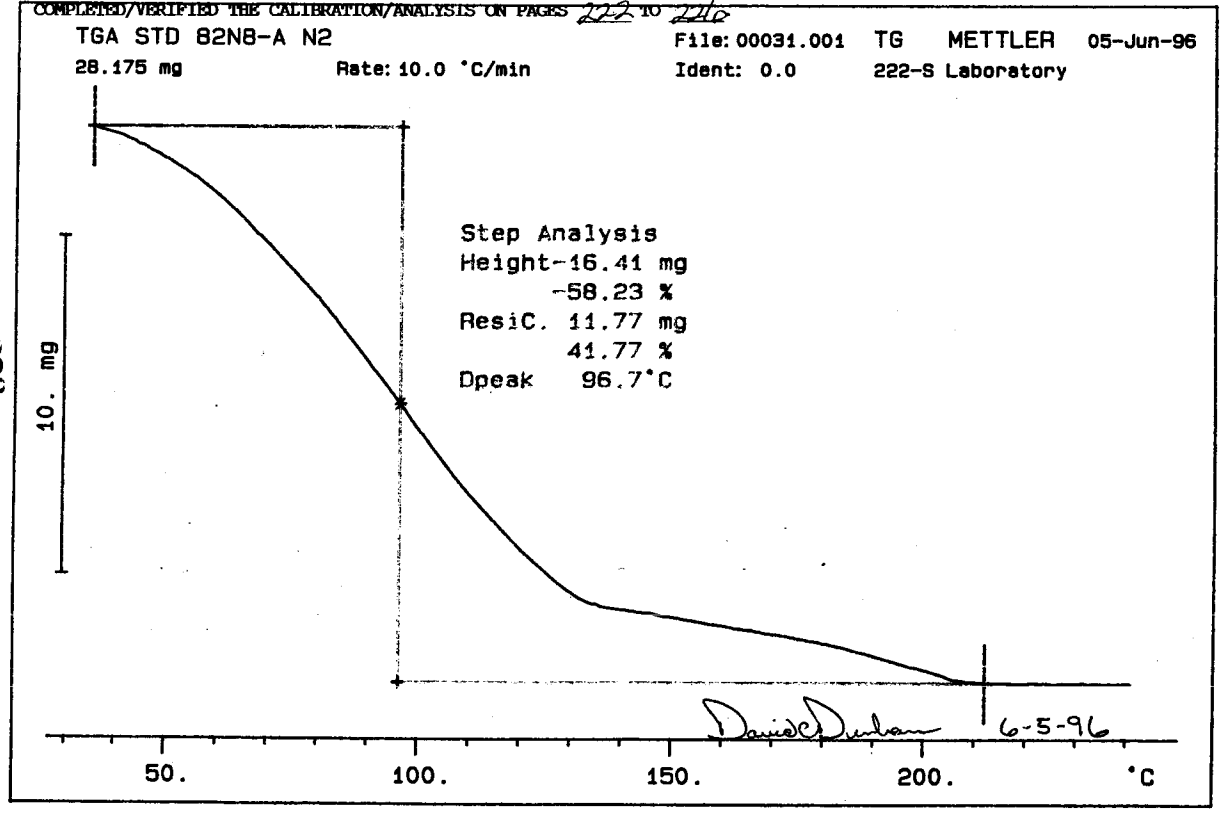
[signature] 6-11-96
Analyst Signature Date

Verified/Validated by
Blandina Valenzuela 6-12-96

Data Entry Comments:

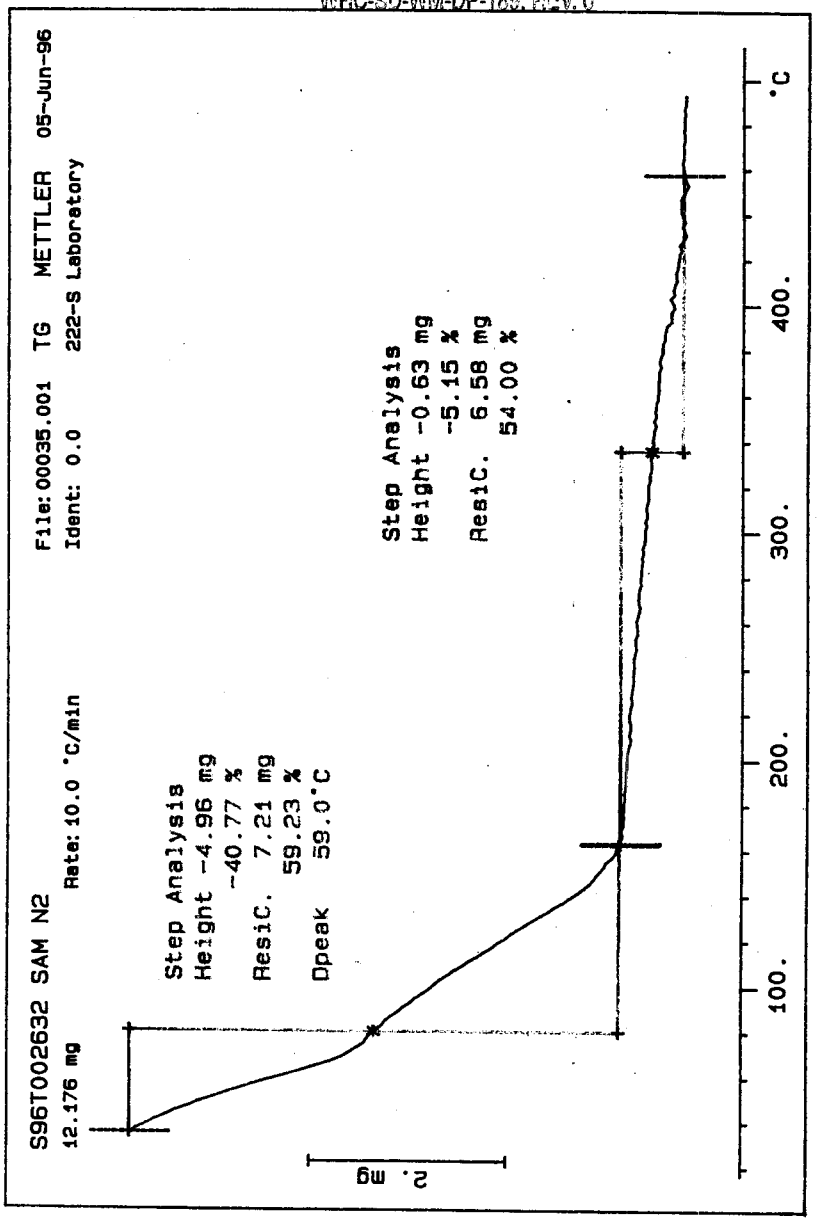
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

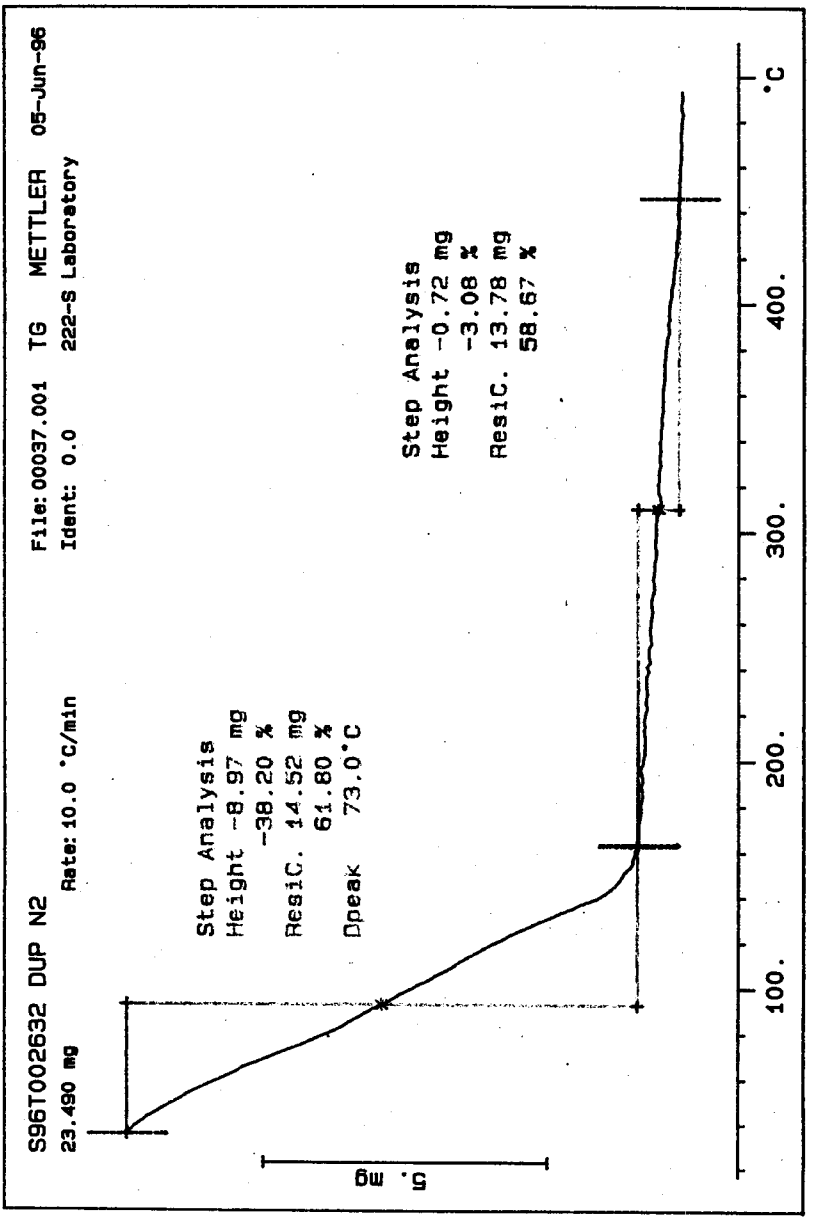
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 222 TO 226

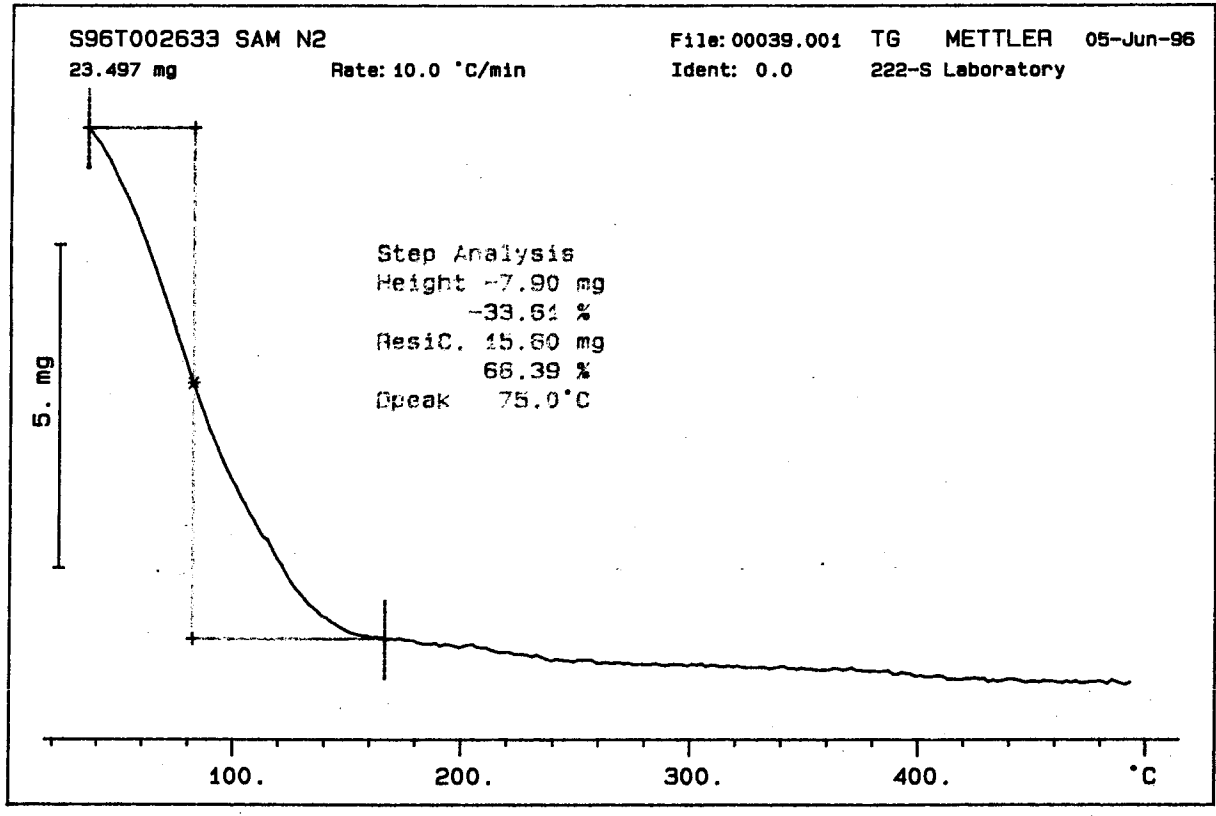


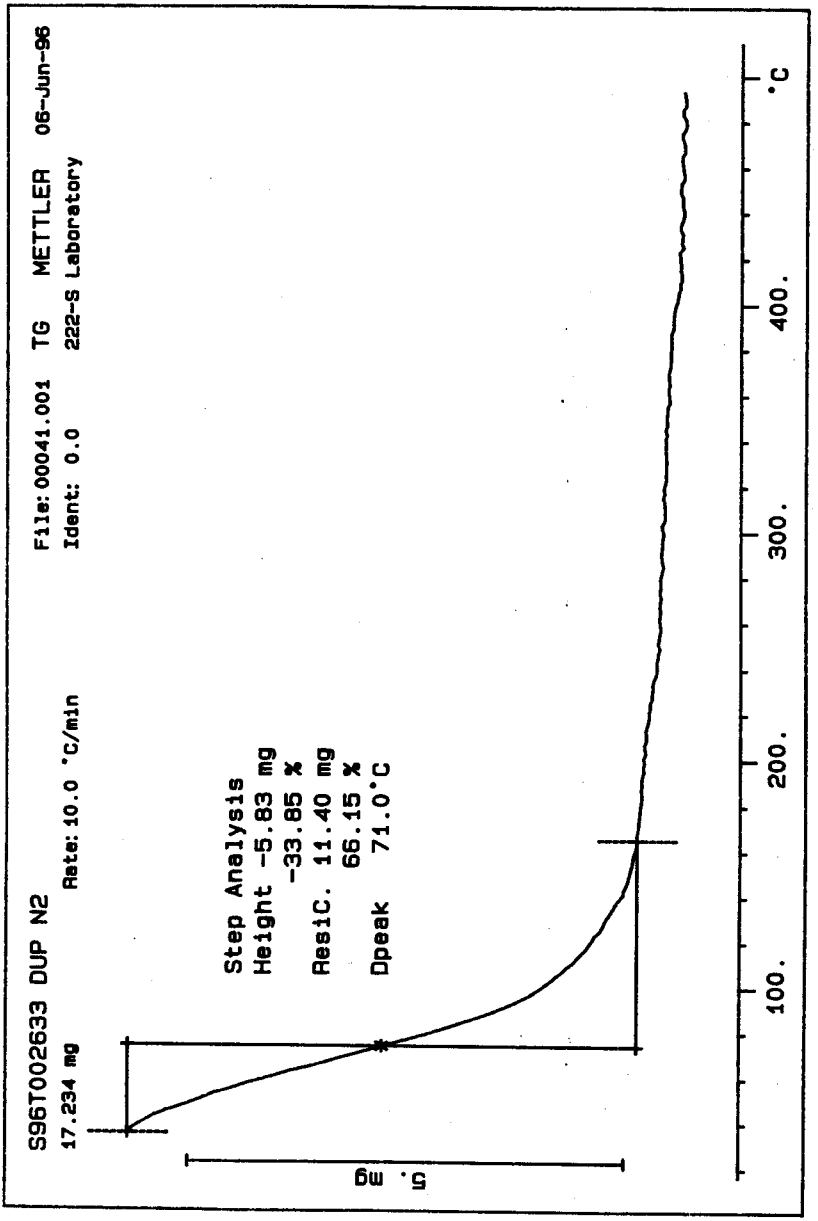
222

WHC-SD-WM-DP-189, REV. 0


S96T002632 SAM N2
12.176 mg
Rate: 10.0 °C/min
File: 00035.001 TG METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -4.96 mg
-40.77 %
ResiC. 7.21 mg
59.23 %
Dpeak 59.0°C
Step Analysis
Height -0.63 mg
-5.15 %
ResiC. 6.58 mg
54.00 %
2. mg
100.
200.
300.
400.
°C


S96T002632 DUP N2
23.490 mg
Rate: 10.0 °C/min
File: 00037.001 TG METTLER 05-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -8.97 mg
-38.20 %
ResiC. 14.52 mg
61.80 %
Dpeak 73.0°C
Step Analysis
Height -0.72 mg
-3.08 %
ResiC. 13.78 mg
58.67 %
5. mg
100.
200.
300.
400.
°C




S96T002633 DUP N2
17.234 mg
Rate: 10.0 °C/min
File: 0041.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -5.83 mg
-33.85 %
Resic. 11.40 mg
66.15 %
Dpeak 71.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9532

Analyst: DCD **Instrument:** TGA0 3 **Book #** 8ZN8A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.2	58.80 6/11/96 BDR	* N/A	%
96000569	U-102	2	SAMPLE	S96T002636	0		TGA-03	SOLID	N/A 11.72	~~37.06~~ 6/11/96 BDR	11.72	%
96000569	U-102	3	DUP	S96T002636	0		TGA-03	SOLID	~~37.05~~	37.05	N/A	%
96000569	U-102	4	SAMPLE	S96T002646	0		TGA-03	SOLID	N/A	38.93		%
96000569	U-102	5	DUP	S96T002646	0		TGA-03	SOLID	38.93	12.51	N/A	%

Final page for worklist # 9532

See attached for signatures
Analyst Signature Date 6-11-96 BDR

R C Jones 6-12-96
Analyst Signature Date

Verified/Validated by
Blandina Valenzuela 6/13/96

~~S96T002636 will be run in replicate due to the large difference in the results (hi RPD's)~~ 6-27-96 BDR

Data Entry Comments: ~~S96T002646 will be run in replicate due to hi RPD's~~ 6-27-96 BDR

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# 9532

Analyst: DcD **Instrument:** TGA0 **Book #** BLN8A

Method: LA-560-112 Rev/Mod _____

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
96000569	U-102	2	SAMPLE	S96T002636	0		TGA-01	SOLID	N/A			%
96000569	U-102	3	DUP	S96T002636	0		TGA-01	SOLID			N/A	%
96000569	U-102	4	SAMPLE	S96T002646	0		TGA-01	SOLID	N/A			%.
96000569	U-102	5	DUP	S96T002646	0		TGA-01	SOLID			N/A	%

Final page for worklist # 9532

Analyst Signature Date 6-6-96

Analyst Signature Date

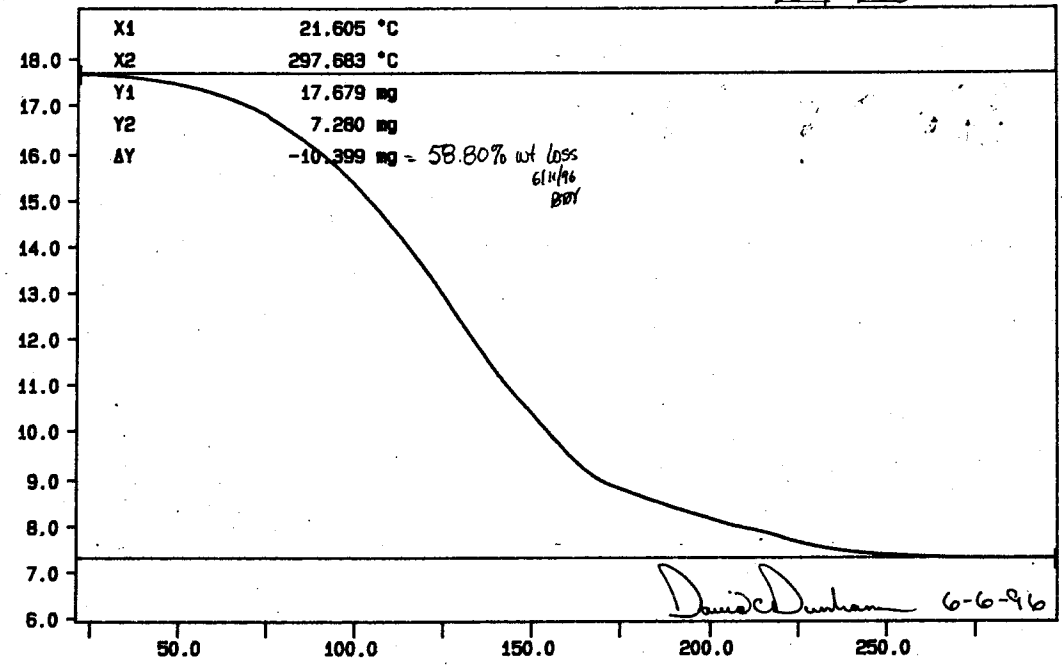
TGA
6/11/96 DSC-03 instrument was used.
6/11/96
Blandina Valenzuela

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: TER060601 Thu Jun 6 20:48:00 1996
Sample Weight: 17.685 mg
TGA STD 82N8-A

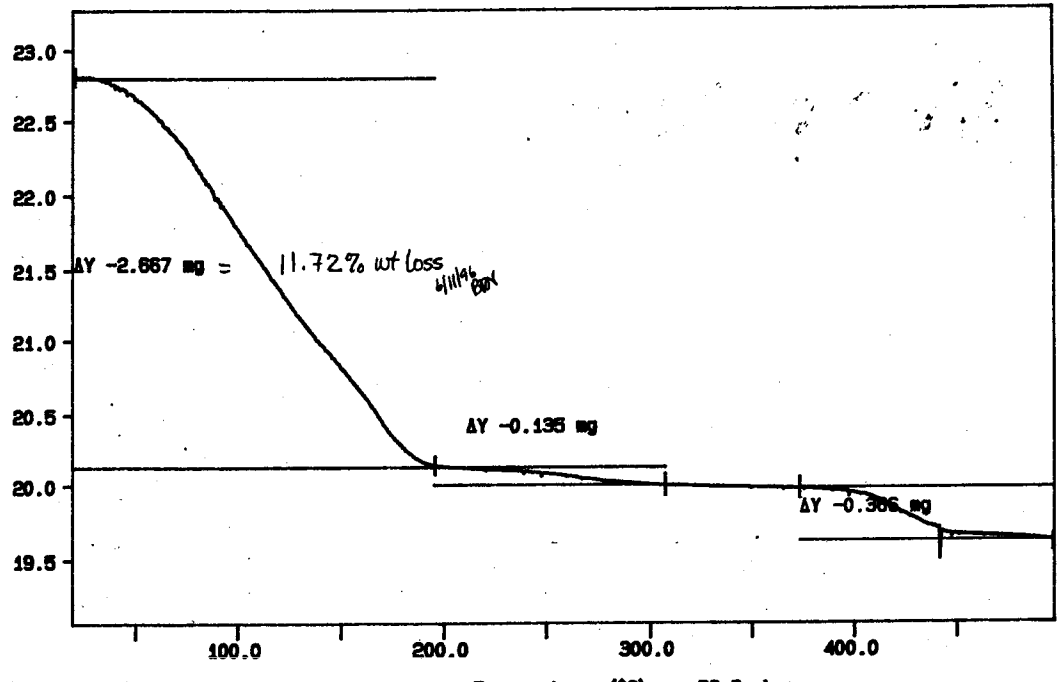
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 229 TO 233



N2 10C/MIN
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

DC Dunham
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 6 20:49:49 1996

Curve 1: TGA
File info: SAM060603 Thu Jun 6 19:07:24 1996
Sample Weight: 22.765 mg
S96T002636 SAM

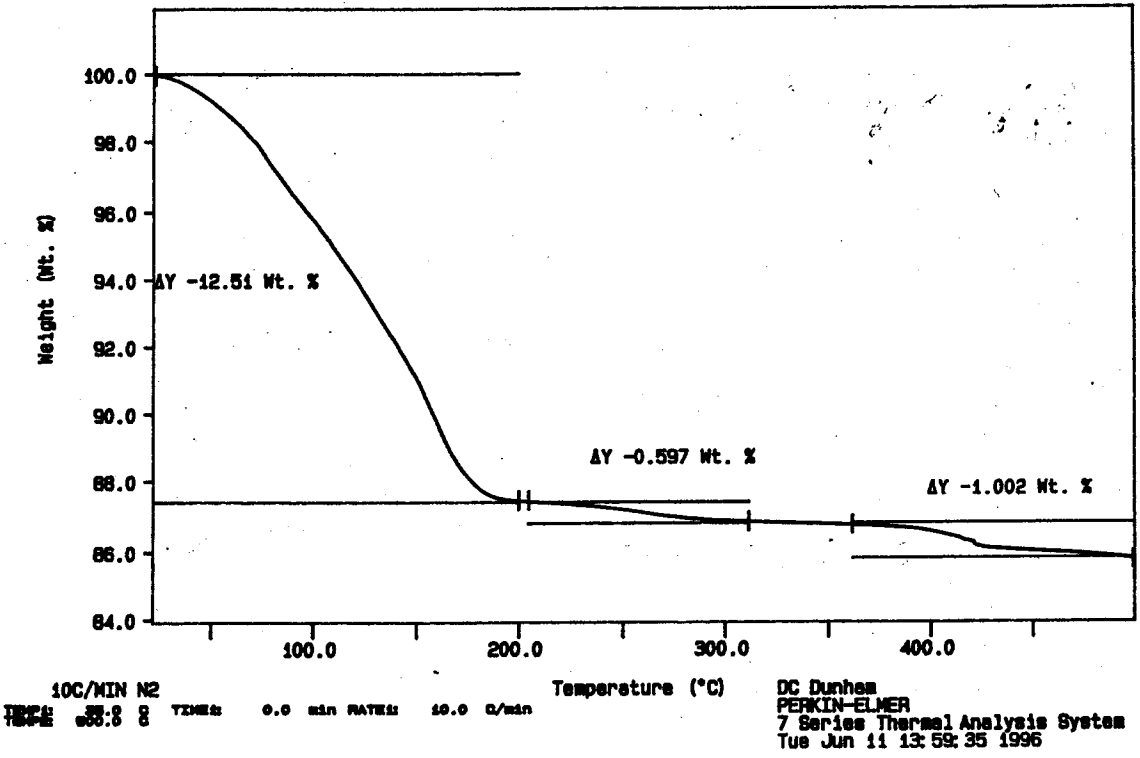


10C/MIN N2
TIME: 0.0 min RATE: 10.0 C/min

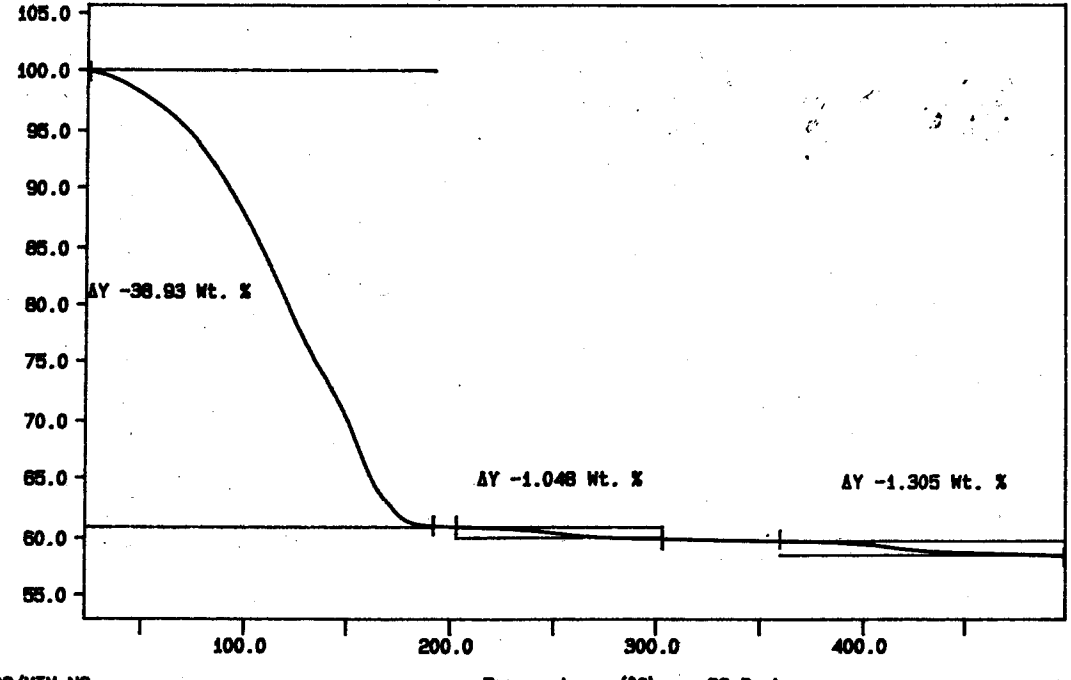
DC Dunham
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jun 11 13:51:52 1996

230

Curve 1: TGA
File info: SAM060604 Thu Jun 6 22:00:56 1996
Sample Weight: 22.373 mg
S96T002636 DUP

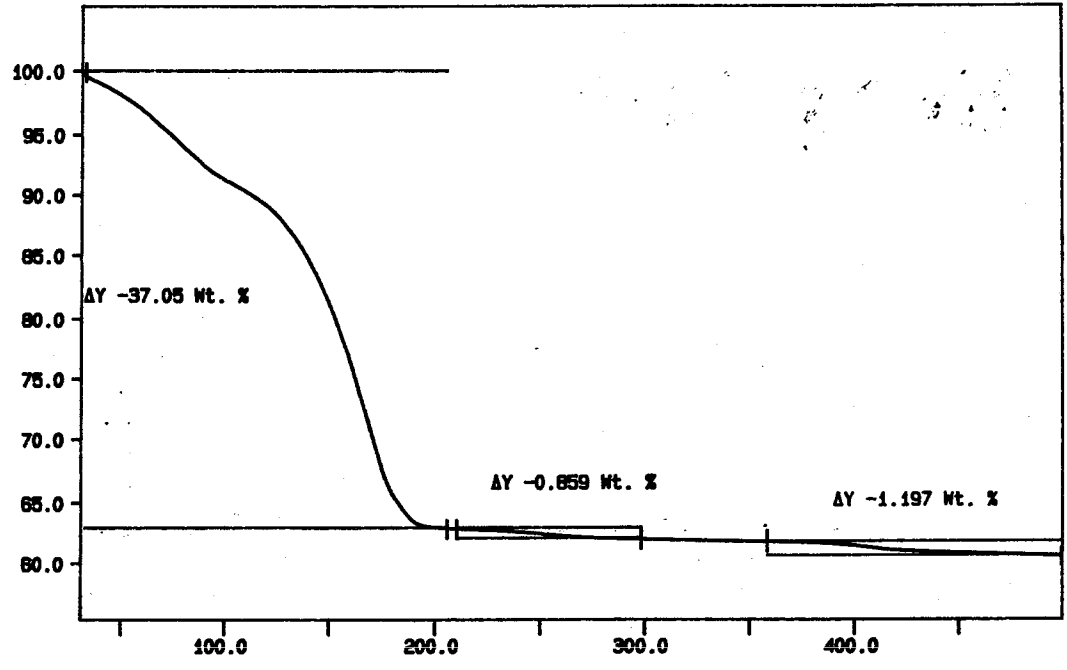


Curve 1: TGA
File info: SAM060605 Fri Jun 7 01:27:53 1996
Sample Weight: 14.804 mg
9967002646 SAM



10C/MIN N2
TIME: 0.0 min RATE: 10.0 C/min
DC Dunham
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jun 11 14:04:55 1996

Curve 1: TGA
File info: SAM060606 Fri Jun 7 04:45:17 1996
Sample Weight: 27.185 mg
996T002646 DUP



10C/MIN N2
TIMES: 0.0 min RATES: 10.0 C/min
DC Dunham
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jun 11 14:11:11 1996

LABCORE Data Entry Template for Worklist# 9533

Analyst: DCD **Instrument:** TGA0 1 **Book #** B2N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	58.23*	N/A	%
96000569	U-102	2	SAMPLE	S96T002647	0		TGA-01	SOLID	N/A	7.68		%
96000569	U-102	3	DUP	S96T002647	0		TGA-01	SOLID	7.68	10.46	N/A	%
96000569	U-102	4	SAMPLE	S96T002775	0		TGA-01	SOLID	N/A	24.47		%
96000569	U-102	5	DUP	S96T002775	0		TGA-01	SOLID	24.47	20.10	N/A	%

Final page for worklist # 9533

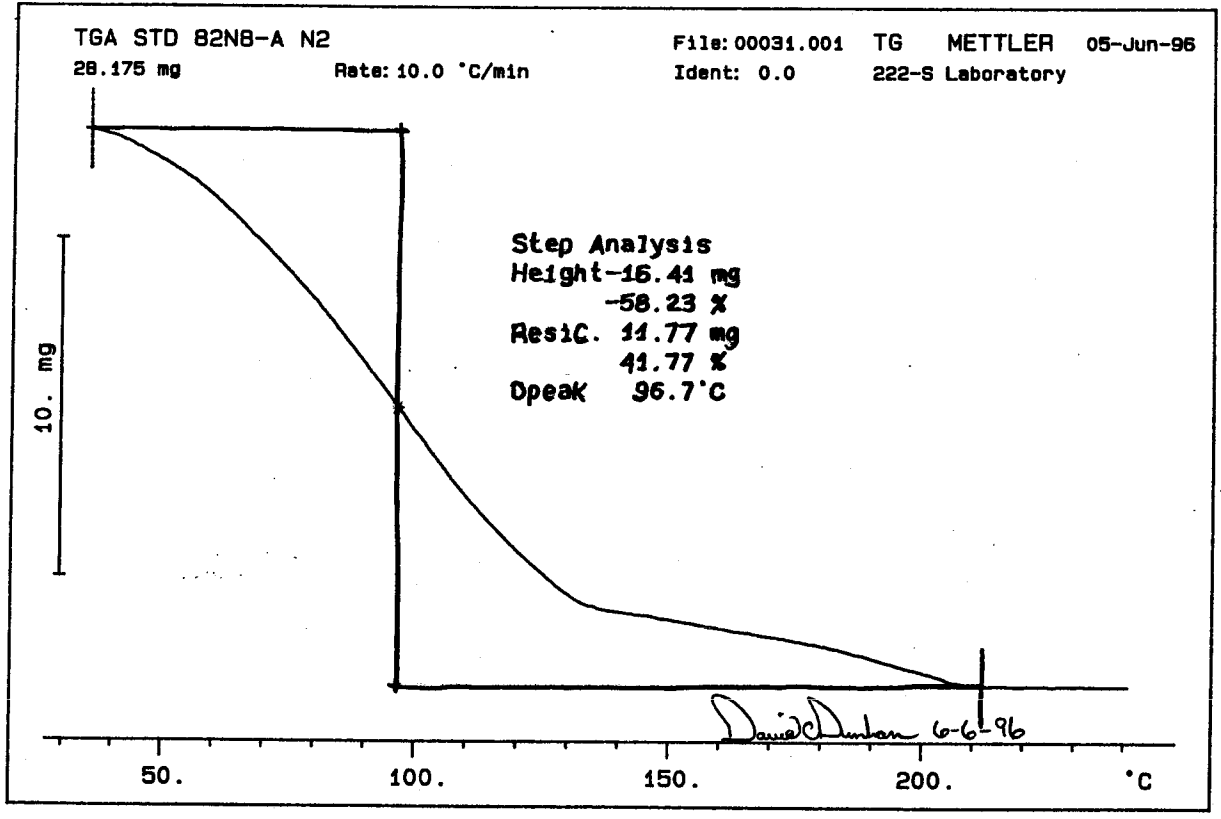
David C Dunbar 6-6-96
Analyst Signature Date

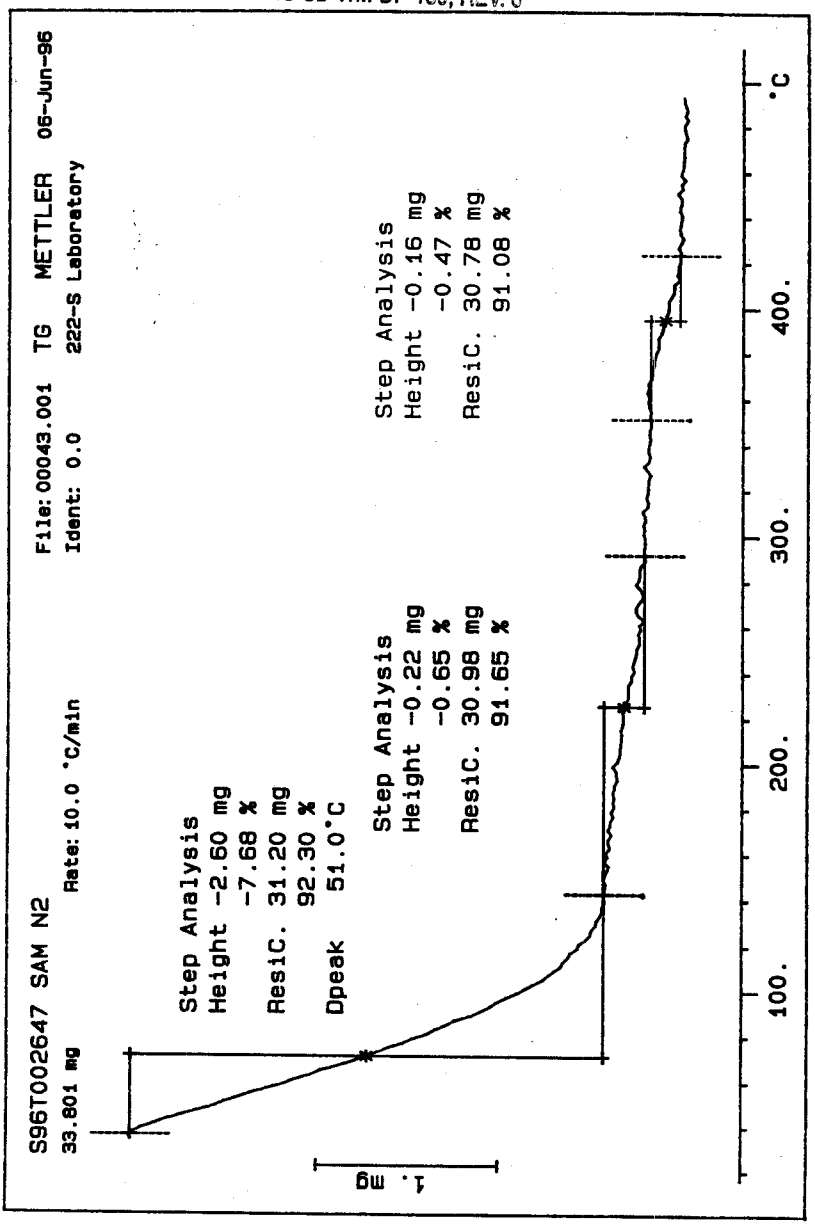
R Hall 6-11-96
Analyst Signature Date

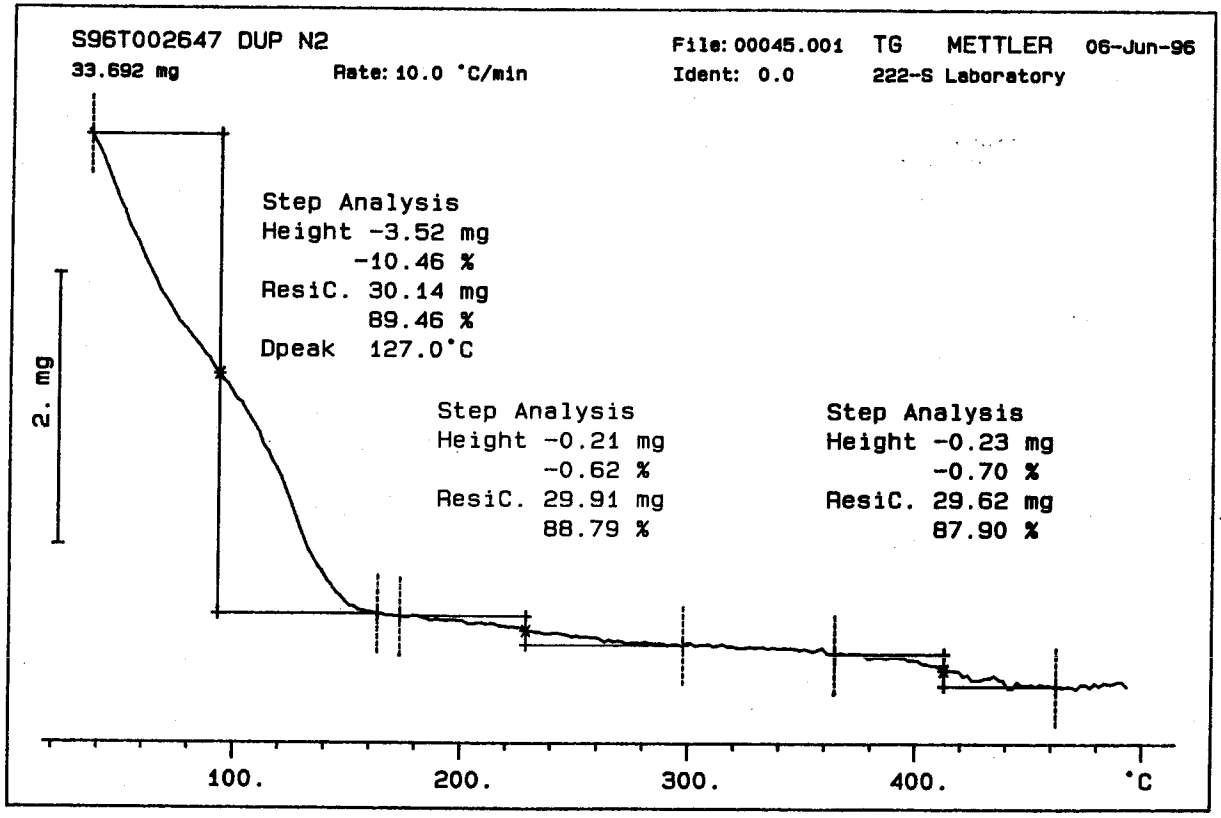
Data Entry Comments:

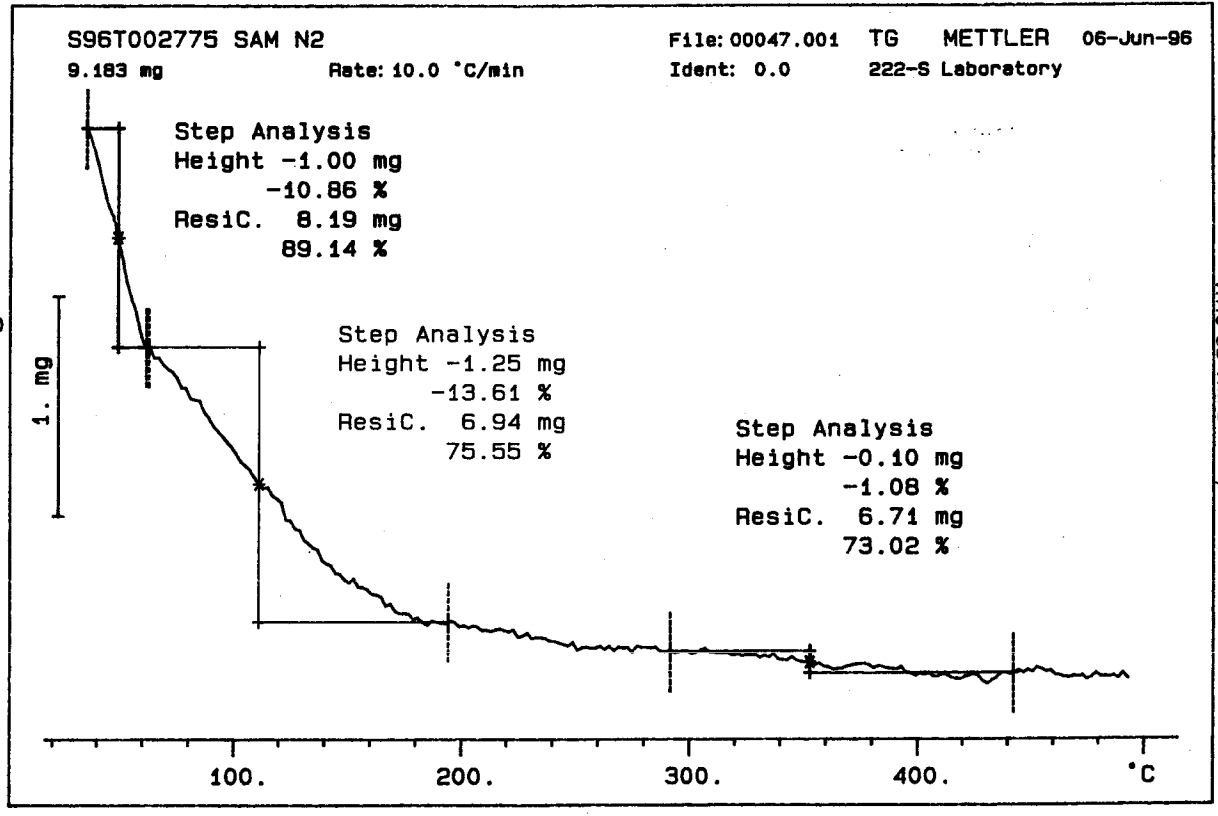
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

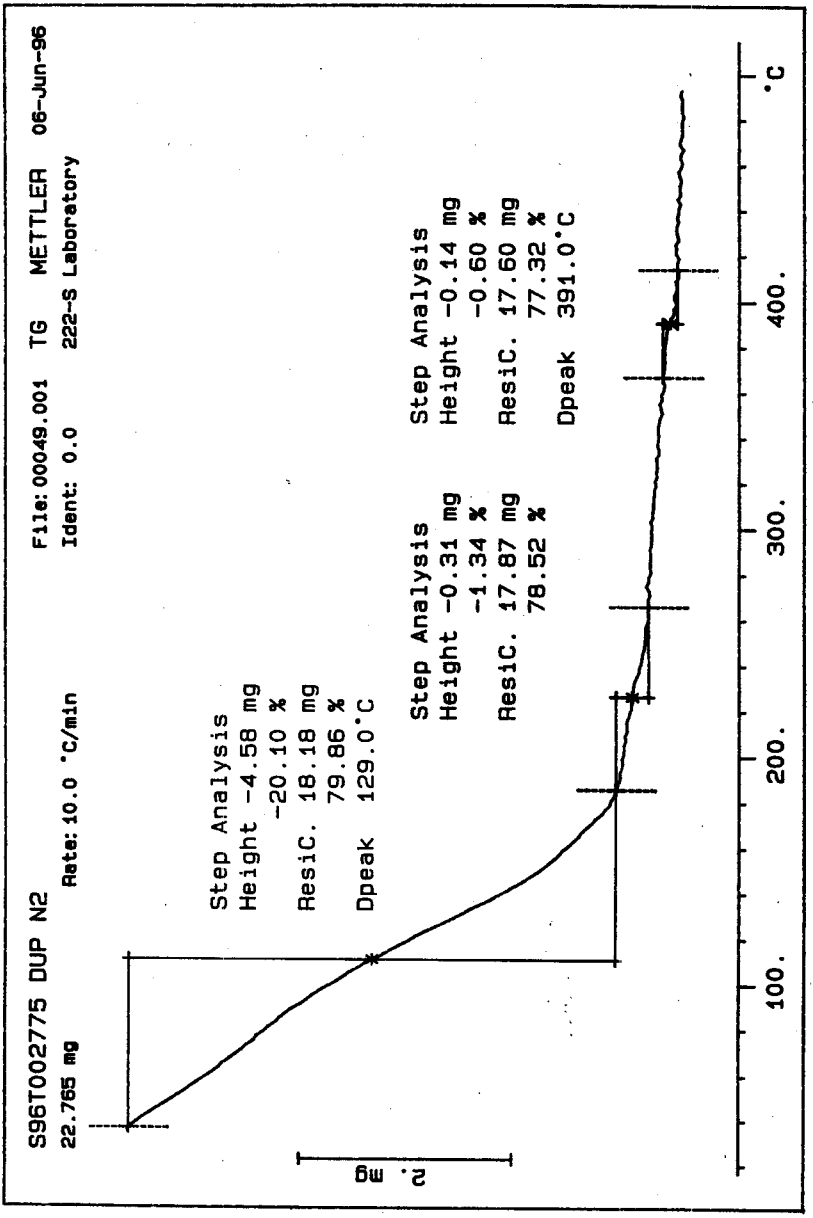
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 235 TO 239.




S96T002647 SAM N2
33.801 mg
Rate: 10.0 °C/min
File: 00043.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -2.60 mg
-7.68 %
ResiC. 31.20 mg
92.30 %
Dpeak 51.0°C
Step Analysis
Height -0.22 mg
-0.65 %
ResiC. 30.98 mg
91.65 %
Step Analysis
Height -0.16 mg
-0.47 %
ResiC. 30.78 mg
91.08 %
1. mg
100.
200.
300.
400.
°C


S96T002647 DUP N2
33.692 mg
Rate: 10.0 °C/min
File: 00045.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.52 mg
-10.46 %
ResiC. 30.14 mg
89.46 %
Dpeak 127.0°C
Step Analysis
Height -0.21 mg
-0.62 %
ResiC. 29.91 mg
88.79 %
Step Analysis
Height -0.23 mg
-0.70 %
ResiC. 29.62 mg
87.90 %
2. mg
100.
200.
300.
400.
°C


S96T002775 SAM N2
9.183 mg
Rate: 10.0 °C/min
File: 00047.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -1.00 mg
-10.86 %
ResiC. 8.19 mg
89.14 %
Step Analysis
Height -1.25 mg
-13.61 %
ResiC. 6.94 mg
75.55 %
Step Analysis
Height -0.10 mg
-1.08 %
ResiC. 6.71 mg
73.02 %
1. mg
100.
200.
300.
400.
°C


S96T002775 DUP N2
22.765 mg
Rate: 10.0 °C/min
File: 00049.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -4.58 mg
-20.10 %
ResiC. 18.18 mg
79.86 %
Dpeak 129.0°C
Step Analysis
Height -0.31 mg
-1.34 %
ResiC. 17.87 mg
78.52 %
Step Analysis
Height -0.14 mg
-0.60 %
ResiC. 17.60 mg
77.32 %
Dpeak 391.0°C
mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9534

Analyst: DCD **Instrument:** TGA0 1 **Book #** B2N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	58.66	N/A	%
96000569	U-102	2	SAMPLE	S96T002776	0		TGA-01	SOLID	N/A	30.1		%
96000569	U-102	3	DUP	S96T002776	0		TGA-01	SOLID	30.1	29.9	N/A	%
96000569	U-102	4	SAMPLE	S96T002777	0		TGA-01	SOLID	N/A	35.9		%
96000569	U-102	5	DUP	S96T002777	0		TGA-01	SOLID	35.9	35.7	N/A	%

Final page for worklist # 9534

Analyst Signature Date 6-6-96

Analyst Signature Date 6-17-96

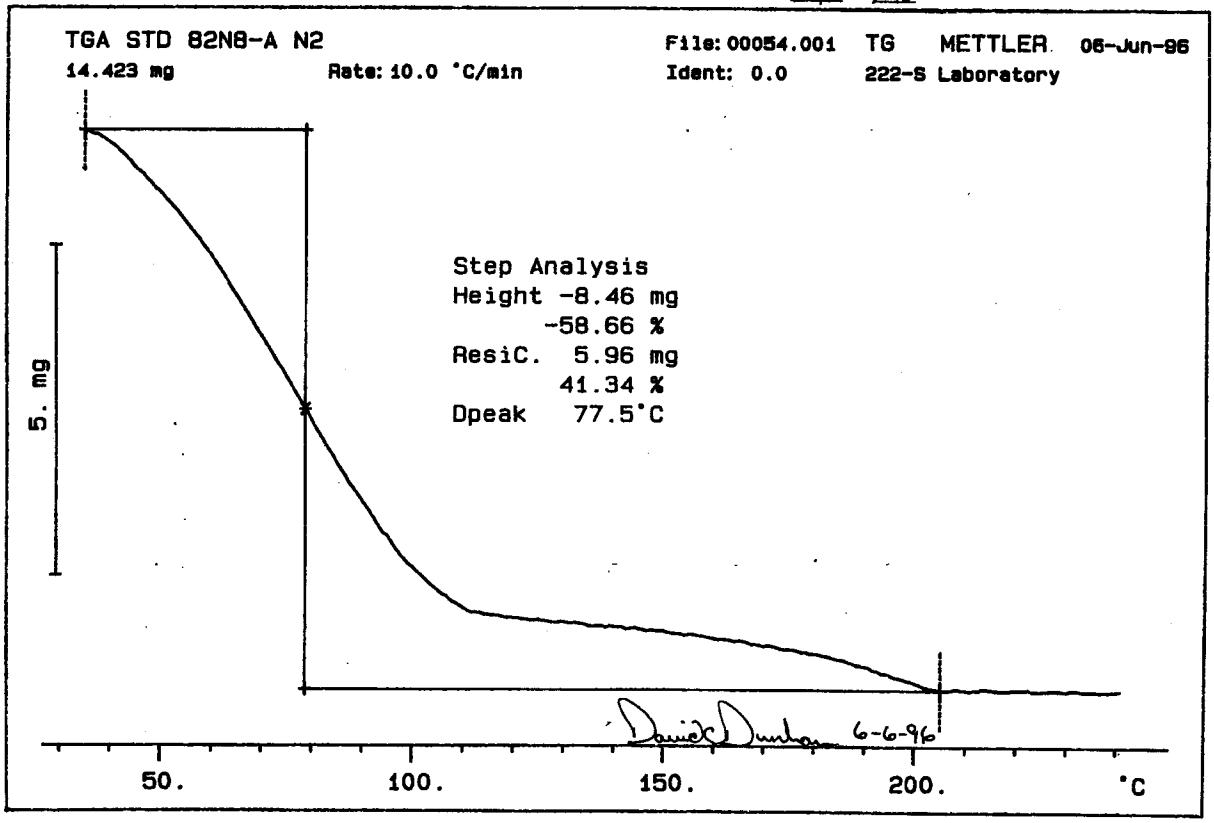
Validated by HAnastn 6-19-96

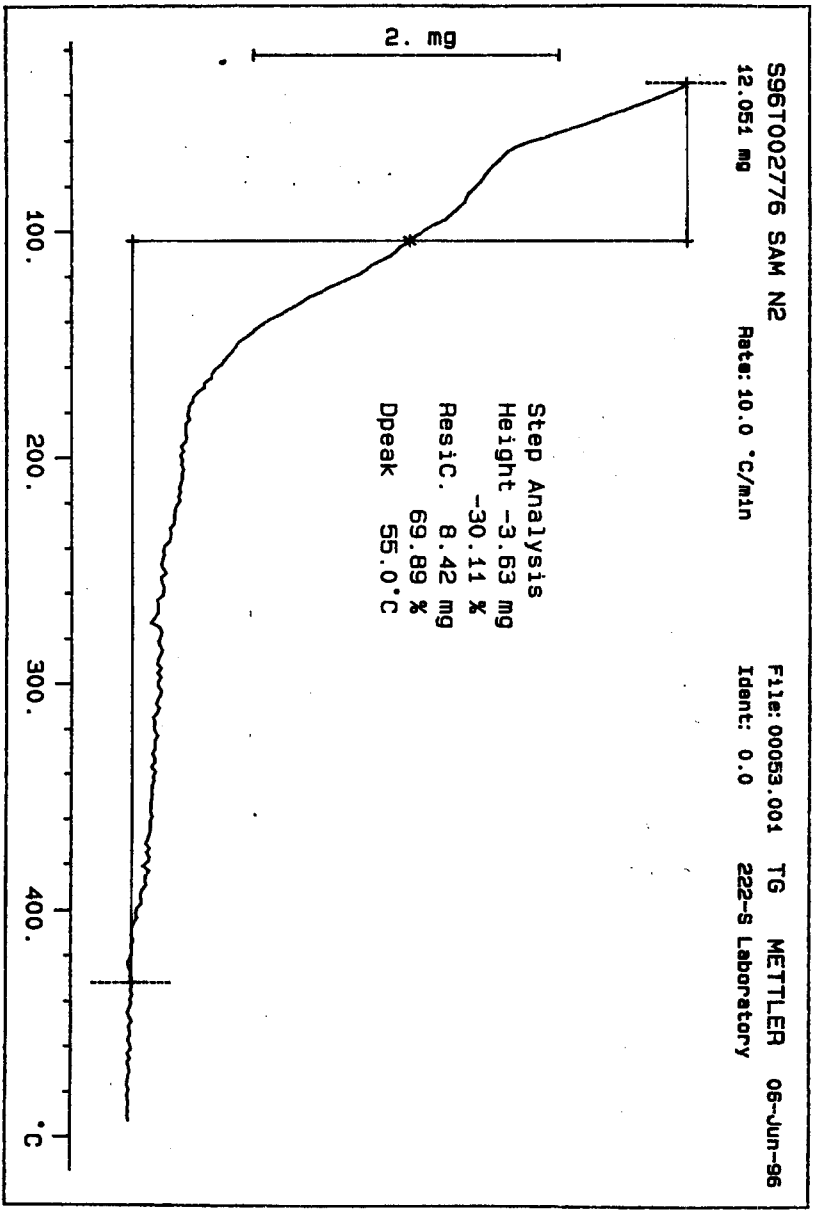
S96T002776 has an ending limit of 420°C, the data could not be retreived from the data disk to reintegrate. The results however should not differ more than 2% if the limit were placed at approximately 200°C.

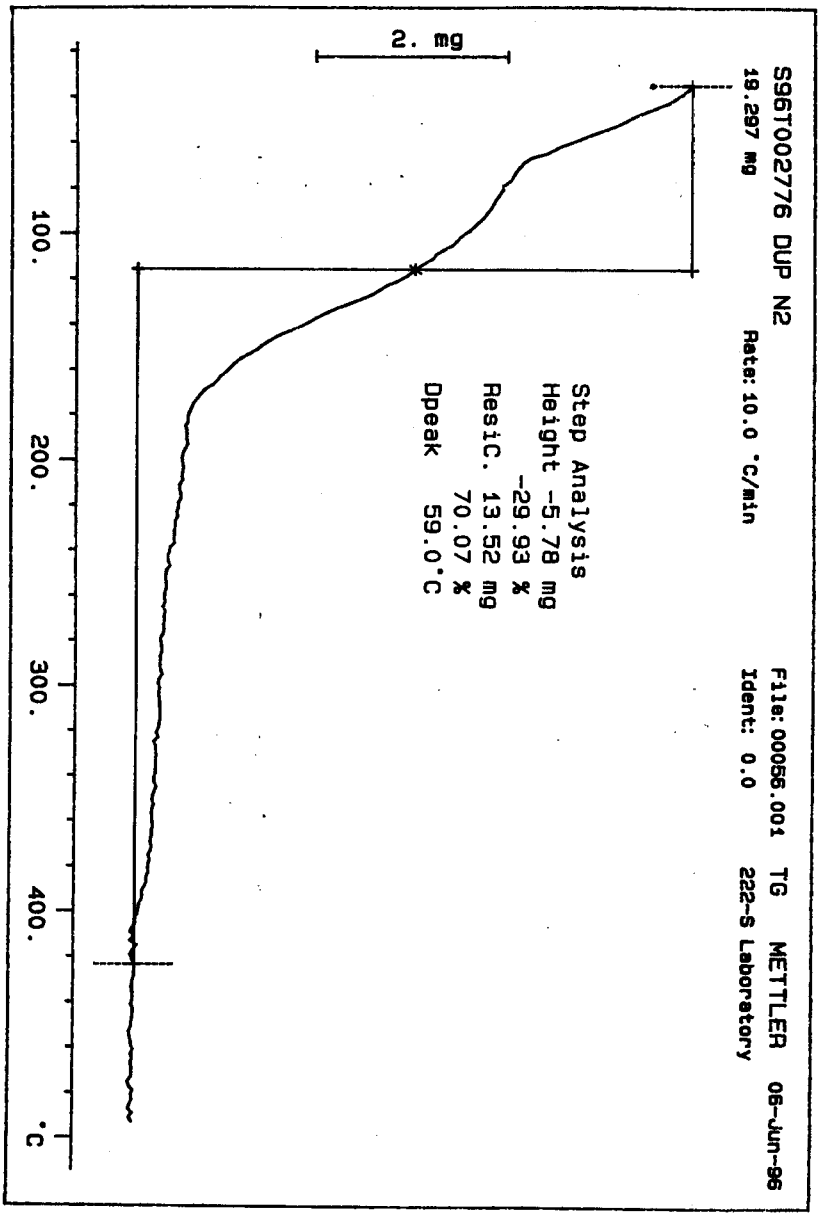
Data Entry Comments: S96T002777 has an ending limit of 420°C, the data could not be retreived from the data disk to reintegrate. The results of the % moisture should not be different of more than 20%

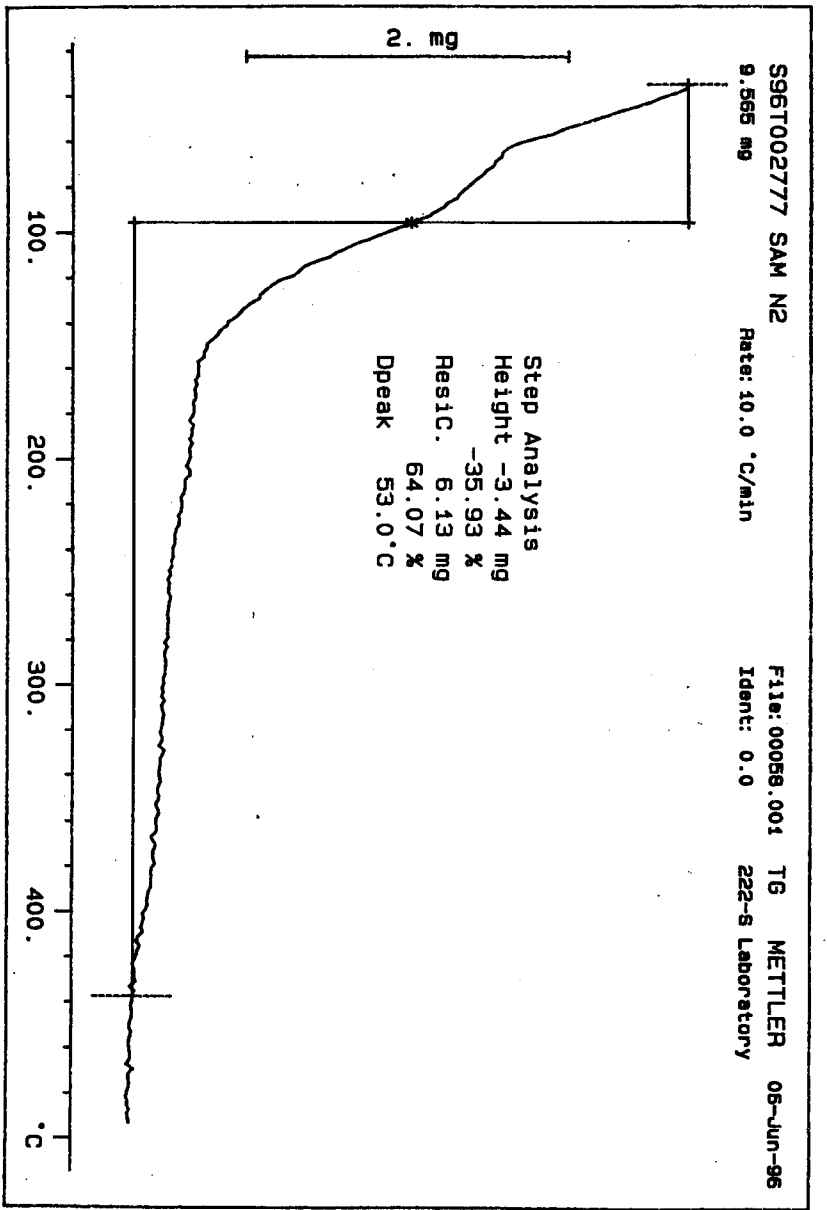
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

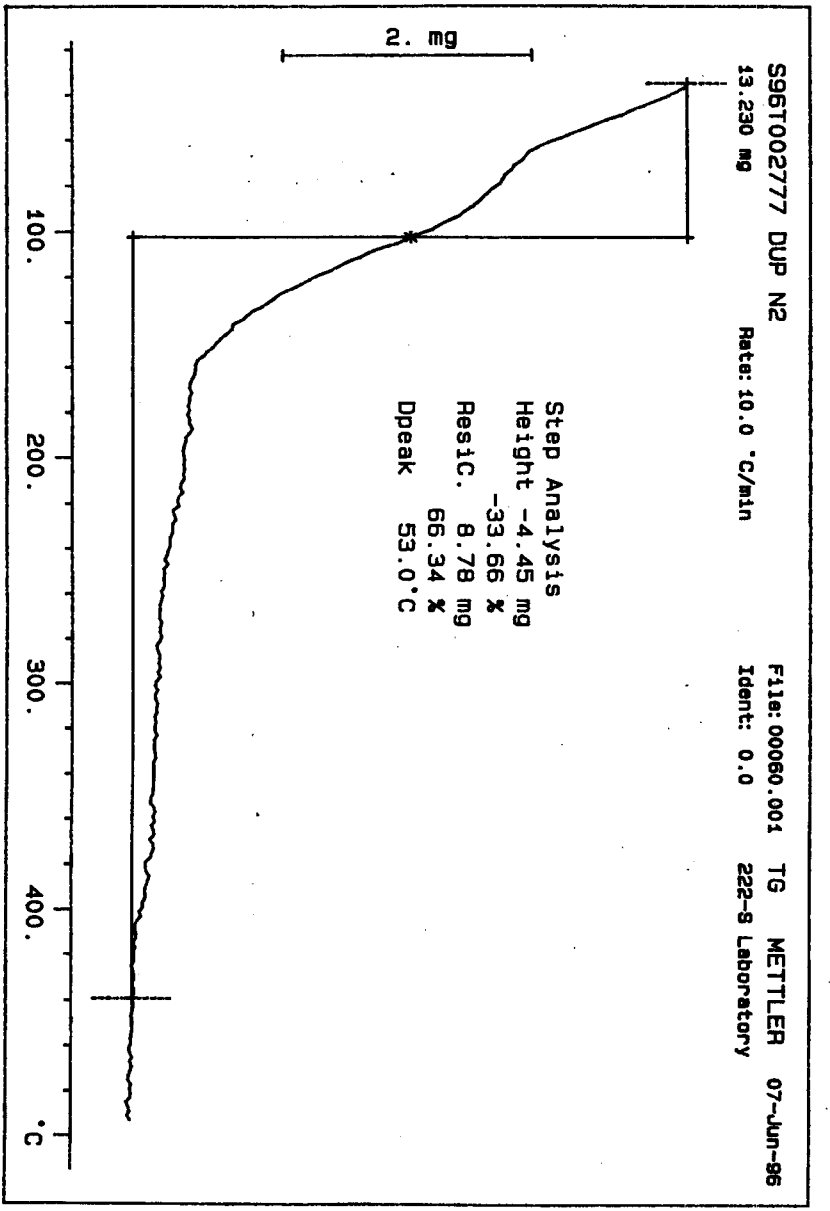
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 241 TO 245.




S96T002776 SAM N2
12.051 mg
Rate: 10.0 °C/min
File: 00053.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
2. mg
Step Analysis
Height -3.63 mg
-30.11 %
ResiC. 8.42 mg
69.89 %
Dpeak 55.0°C
100.
200.
300.
400.
°C


S96T002776 DUP N2
19.297 mg
Rate: 10.0 °C/min
File: 00056.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
2. mg
Step Analysis
Height -5.78 mg
-29.93 %
ResiC. 13.52 mg
70.07 %
Dpeak 59.0°C
100.
200.
300.
400.
°C


S96T002777 SAM N2
9.565 mg
Rate: 10.0 °C/min
File: 00058.001 TG METTLER 06-Jun-96
Ident: 0.0 222-S Laboratory
2. mg
Step Analysis
Height -3.44 mg
-35.93 %
ResiC. 6.13 mg
64.07 %
Dpeak 53.0°C
100.
200.
300.
400.
°C


S96T002777 DUP N2
13.230 mg
Rate: 10.0 °C/min
File: 00060.001 TG METTLER 07-Jun-96
Ident: 0.0 222-S Laboratory
2. mg
Step Analysis
Height -4.45 mg
-33.66 %
Resic. 8.78 mg
66.34 %
Dpeak 53.0°C
100.
200.
300.
400.
°C

worklistrpt Version 2.1 05/15/95
06/03/96 14:38

LABCORE Data Entry Template for Worklist# 9535

Analyst: RR **Instrument:** TGA0 1 **Book #** 82178 A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	58.84*	N/A	%
96000569	U-102	2	SAMPLE	S96T002778	0		TGA-01	SOLID	N/A	40.04		%
96000569	U-102	3	DUP	S96T002778	0		TGA-01	SOLID	40.04	37.04	N/A	%
96000569	U-102	4	SAMPLE	S96T002779	0		TGA-01	SOLID	N/A	50.10		%
96000569	U-102	5	DUP	S96T002779	0		TGA-01	SOLID	50.10	55.46	N/A	%

Final page for worklist # 9535

Rob Kirn 6/8/96
Analyst Signature Date

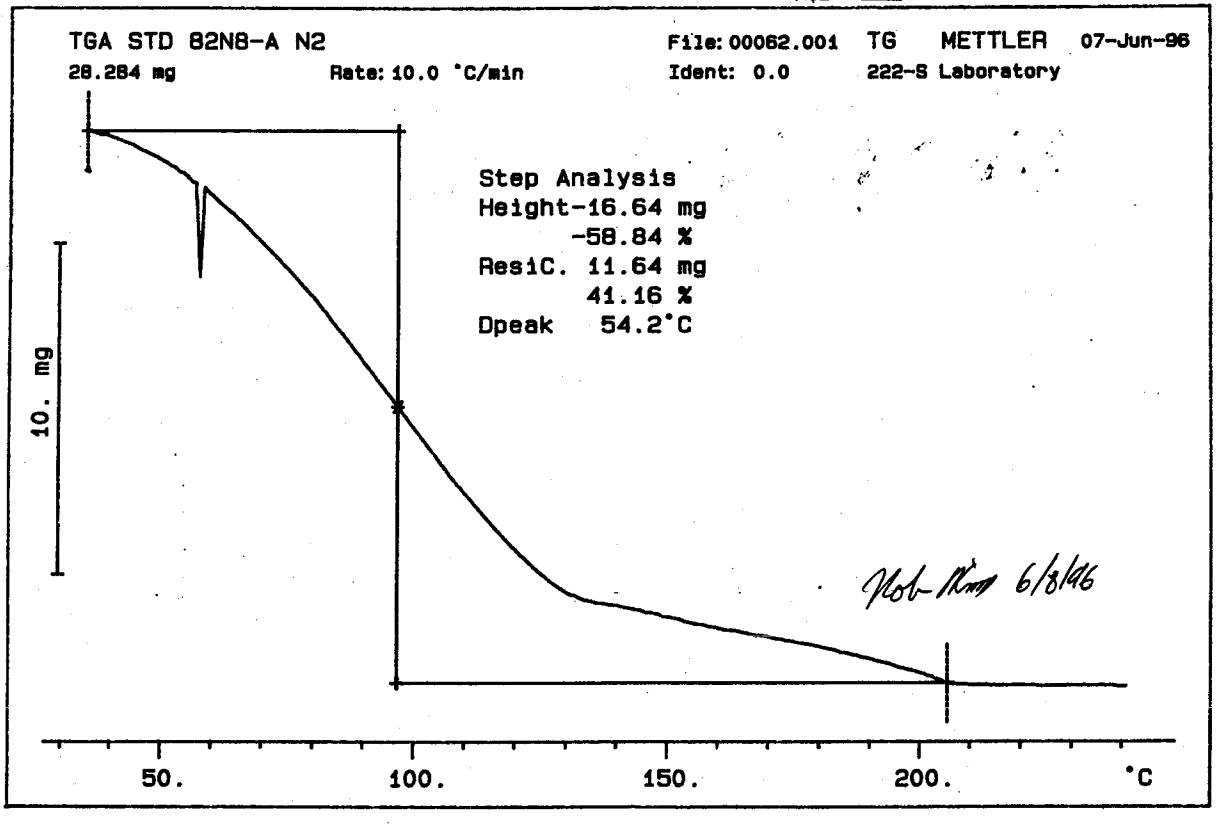
6-12-96
Analyst Signature Date

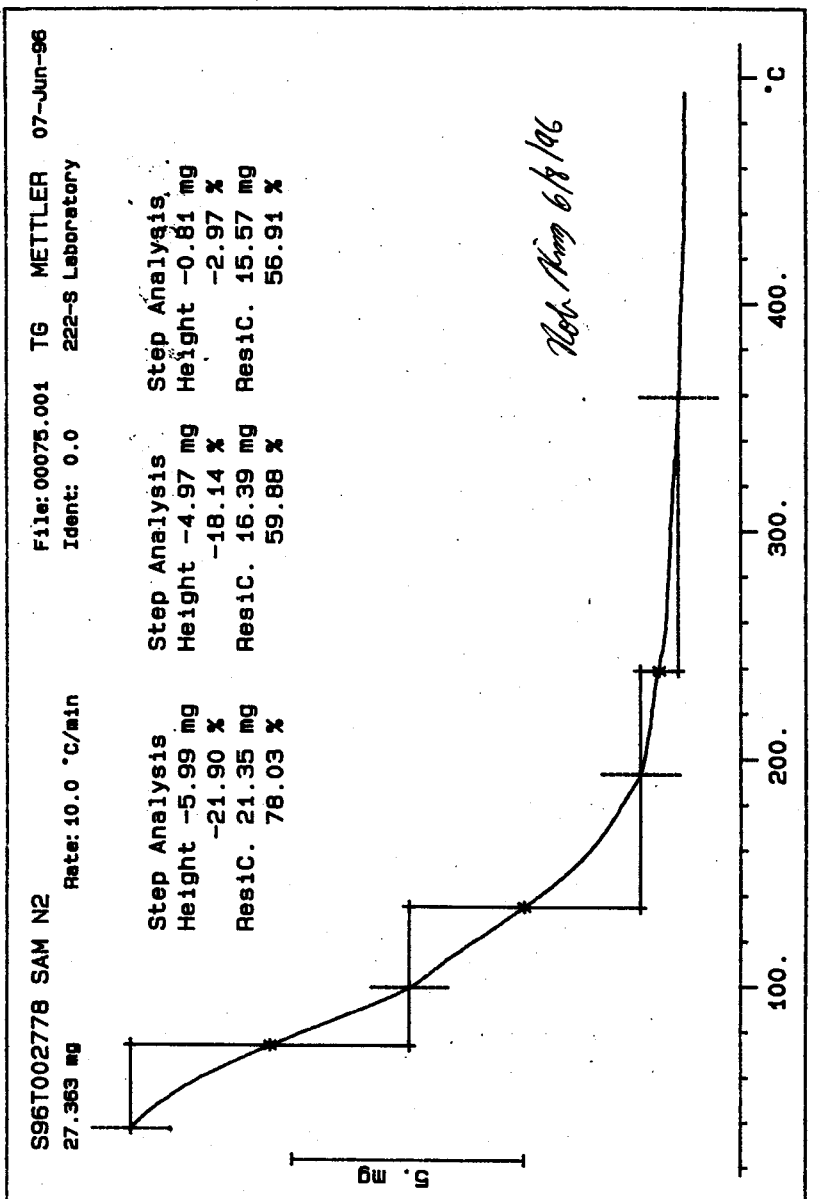
Verified 6/13/96 BOR Verified/Validated by
Blandina Valenzuela 6-13-96

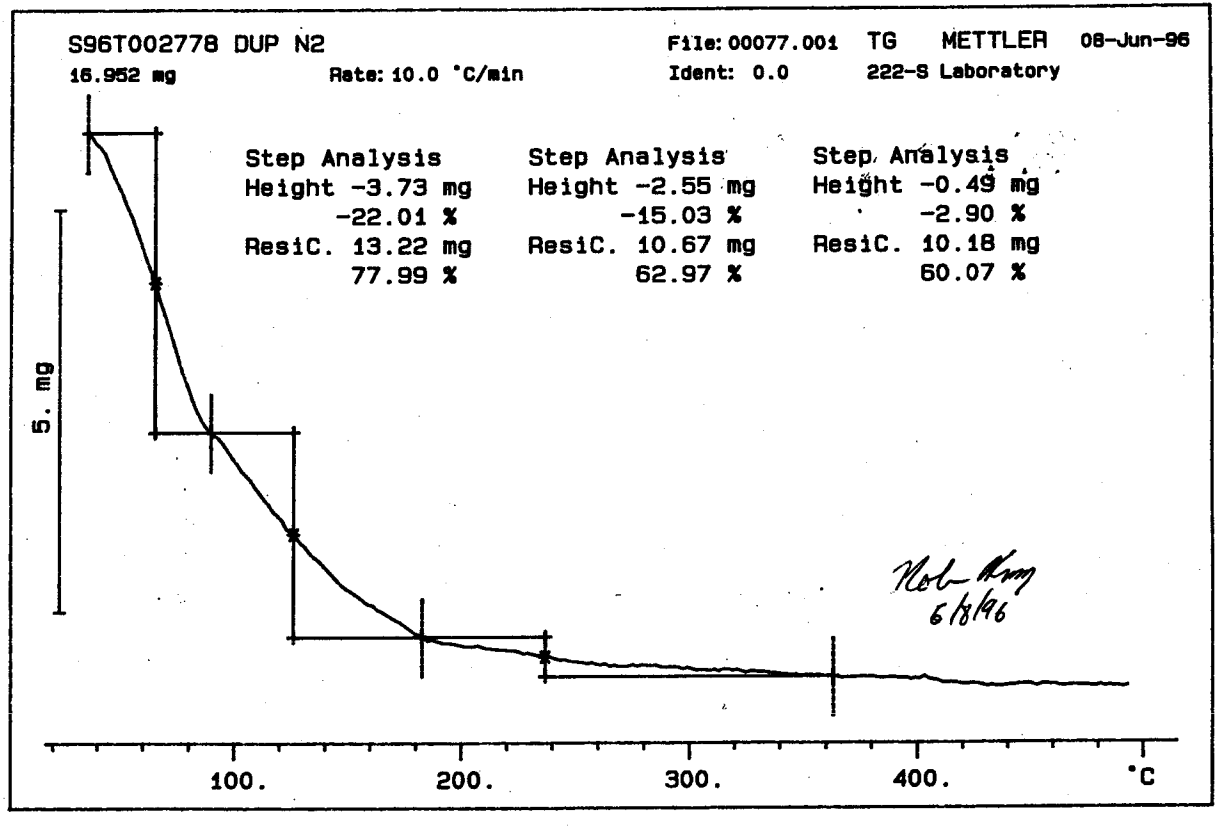
Data Entry Comments: S96T002778 results are the sum of two weight loss step

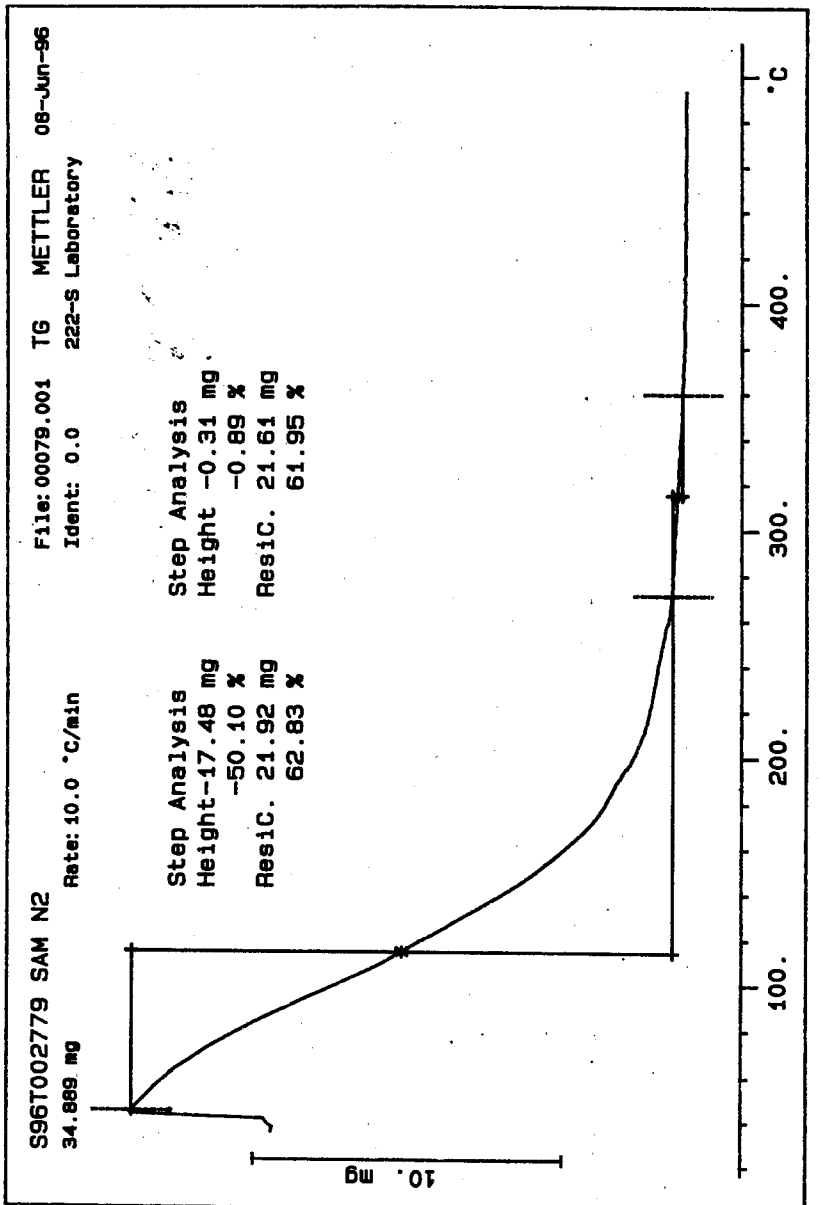
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

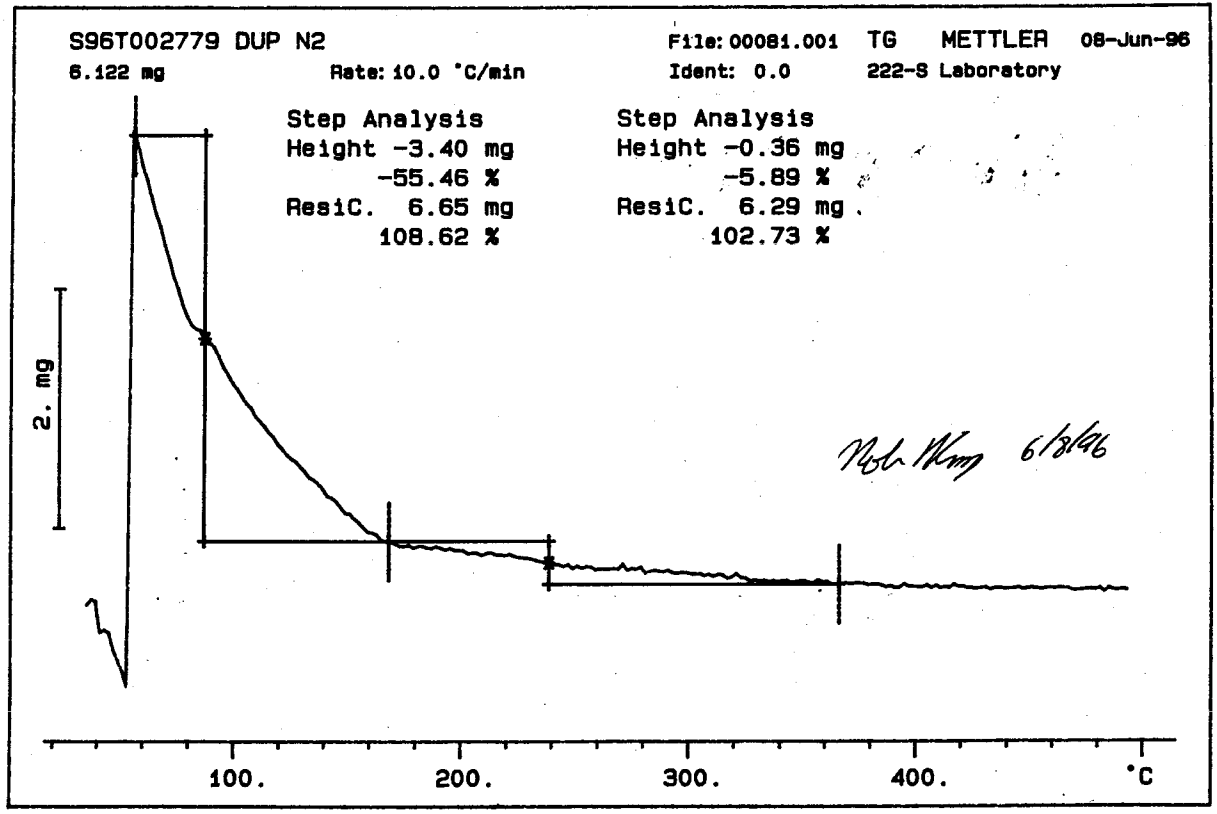
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 247 TO 251.




S96T002778 SAM N2
27.363 mg
Rate: 10.0 °C/min
File: 00075.001 TG METTLER 07-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -5.99 mg
-21.90 %
ResiC. 21.35 mg
78.03 %
Step Analysis
Height -4.97 mg
-18.14 %
ResiC. 16.39 mg
59.88 %
Step Analysis
Height -0.81 mg
-2.97 %
ResiC. 15.57 mg
56.91 %
Not Acceptable 6/6/96
5. mg
100.
200.
300.
400.
°C


S96T002778 DUP N2
File: 00077.001 TG METTLER 08-Jun-96
16.952 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.73 mg
-22.01 %
ResiC. 13.22 mg
77.99 %
Step Analysis
Height -2.55 mg
-15.03 %
ResiC. 10.67 mg
62.97 %
Step Analysis
Height -0.49 mg
-2.90 %
ResiC. 10.18 mg
60.07 %
5. mg
6/18/96
100.
200.
300.
400.
°C


S96T002779 SAM N2
34.889 mg
Rate: 10.0 °C/min
File: 00079.001 TG METTLER 08-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -17.48 mg
-50.10 %
ResiC. 21.92 mg
62.83 %
Step Analysis
Height -0.31 mg
-0.89 %
ResiC. 21.61 mg
61.95 %
10. mg
100.
200.
300.
400.
°C


S96T002779 DUP N2
File: 00081.001 TG METTLER 08-Jun-96
6.122 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.40 mg
-55.46 %
ResiC. 6.65 mg
108.62 %
Step Analysis
Height -0.36 mg
-5.89 %
ResiC. 6.29 mg
102.73 %
2 mg
6/18/96
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9536

Analyst: SAL **Instrument:** TGA0 1 **Book #** SNJ82N8-A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-102 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.2	58.90	N/A	%
96000569	U-102	2 SAMPLE	S96T002780	0		TGA-01	SOLID	N/A	44.90		%
96000569	U-102	3 DUP	S96T002780	0		TGA-01	SOLID	44.90	44.08	N/A	%

Final page for worklist # 9536

A Lambert 06.07.96
Analyst Signature **Date**

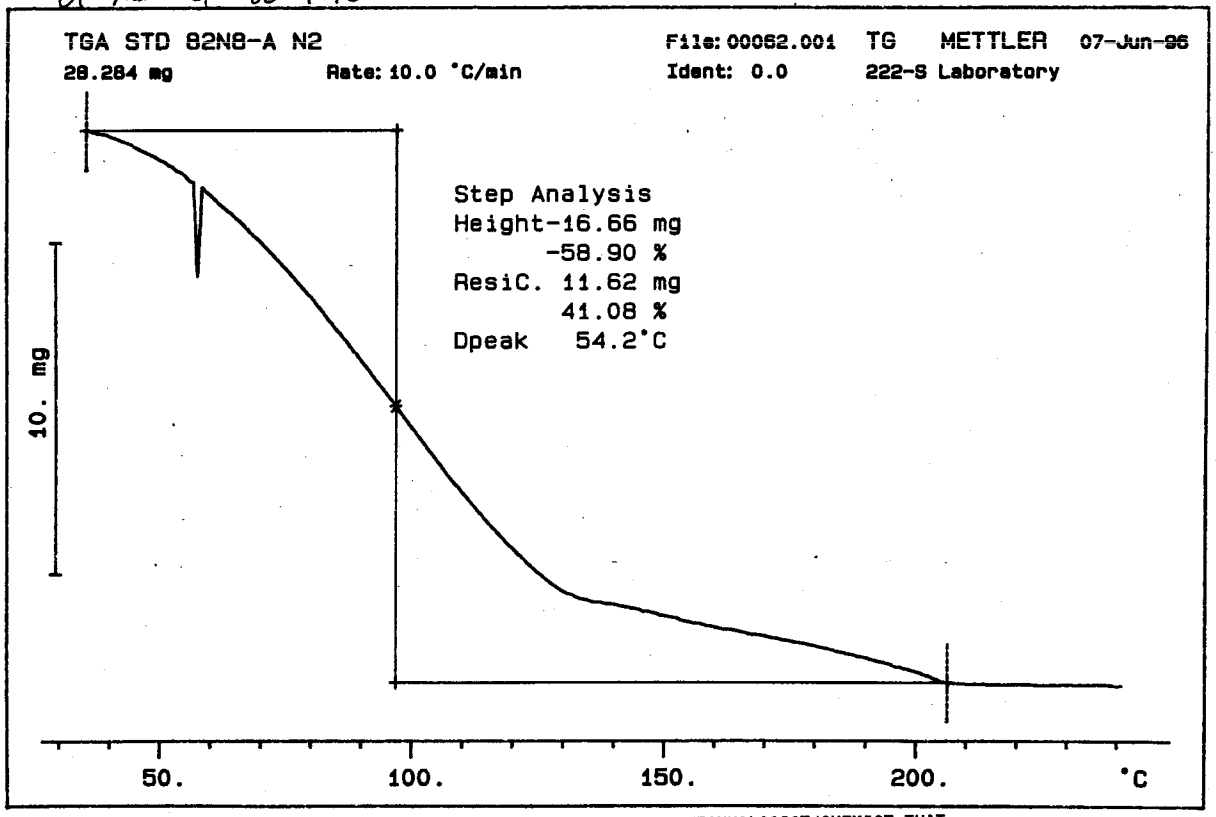
Analyst Signature **Date**

Verified/Validated by
Blandina
Valenzuela 6-14-96

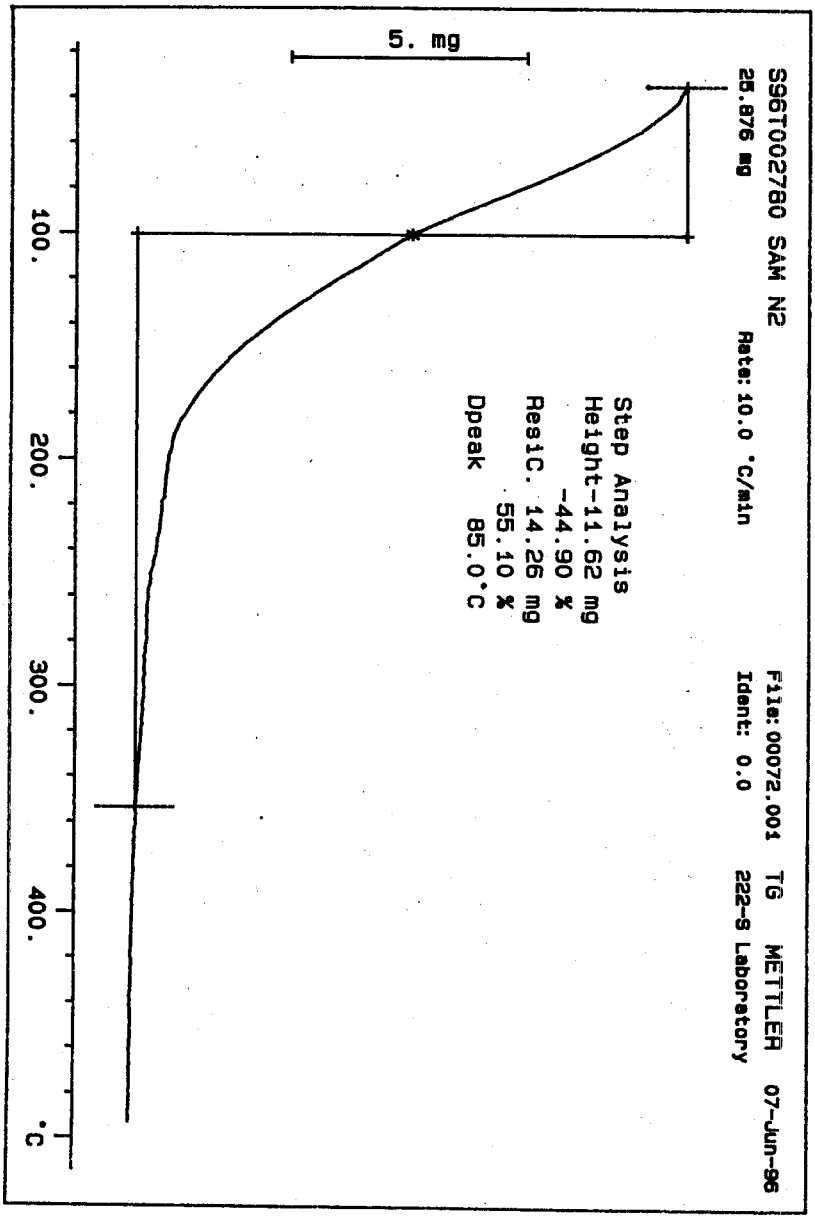
Data Entry Comments:

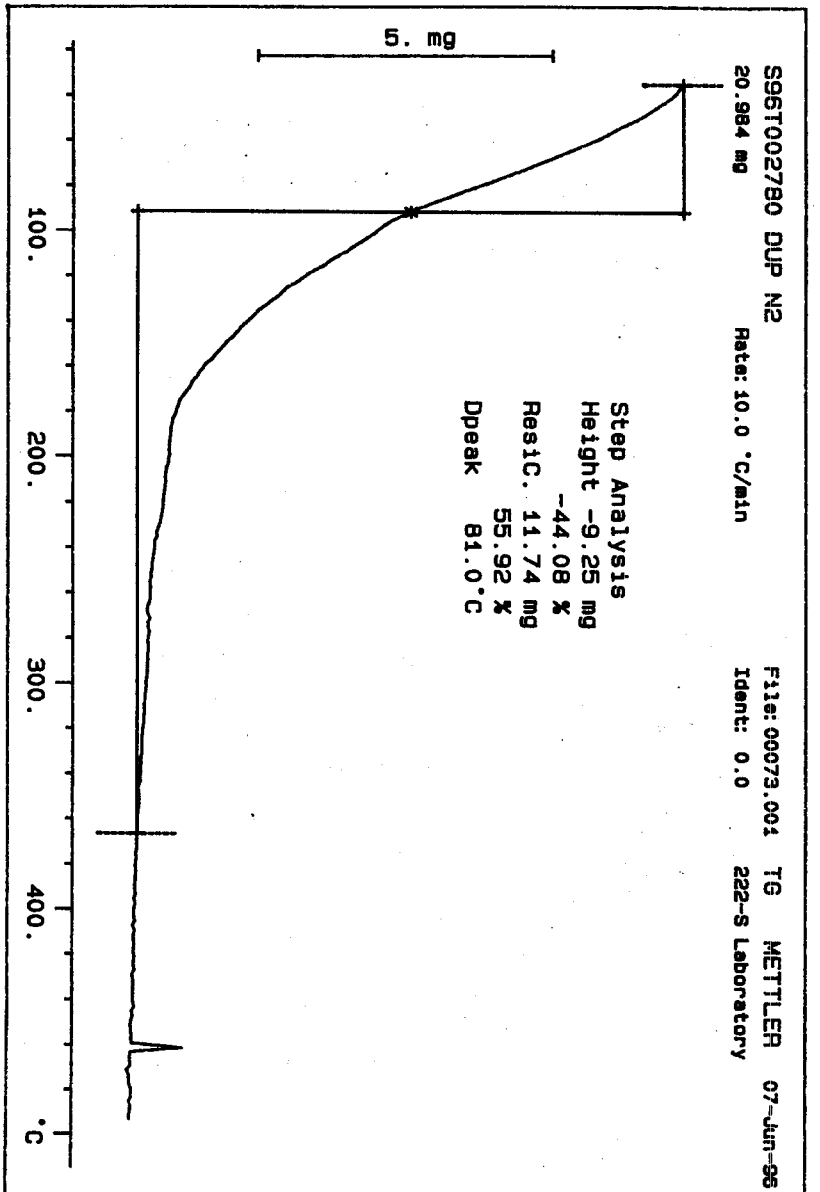
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

A Lambel 06.07.96



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 253 TO 255


S96T002780 SAM N2
25.876 mg
Rate: 10.0 °C/min
File: 00072.001 TG METTLER 07-Jun-96
Ident: 0.0 222-S Laboratory
5. mg
Step Analysis
Height-11.62 mg
-44.90 %
ResiC. 14.26 mg
55.10 %
Dpeak 85.0°C
100.
200.
300.
400.
°C


S96T00278D DUP N2
20.984 mg
Rate: 10.0 °C/min
File: 00073.001 TG METTLER 07-Jun-96
Ident: 0.0 222-S Laboratory
5. mg
Step Analysis
Height -9.25 mg
-44.08 %
ResiC. 11.74 mg
55.92 %
Dpeak 81.0°C
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 10074

Analyst: HDP **Instrument:** TGA0 1 **Book #** 82N8A

Method: LA-514-114 Rev/Mod B-1

Worklist Comment: TGA U-102 Reruns. Run under N2. RUSH

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.42 (6-25-96 MDH)	59.43	N/A	%
96000536	U-102	2	SAMPLE	S96T002344	1		TGA-03	SOLID	N/A	28.1		%
96000536	U-102	3	DUP	S96T002344	1		TGA-03	SOLID	28.1	31.81	N/A	%

Final page for worklist # 10074

Analyst Signature Date 6-20-96

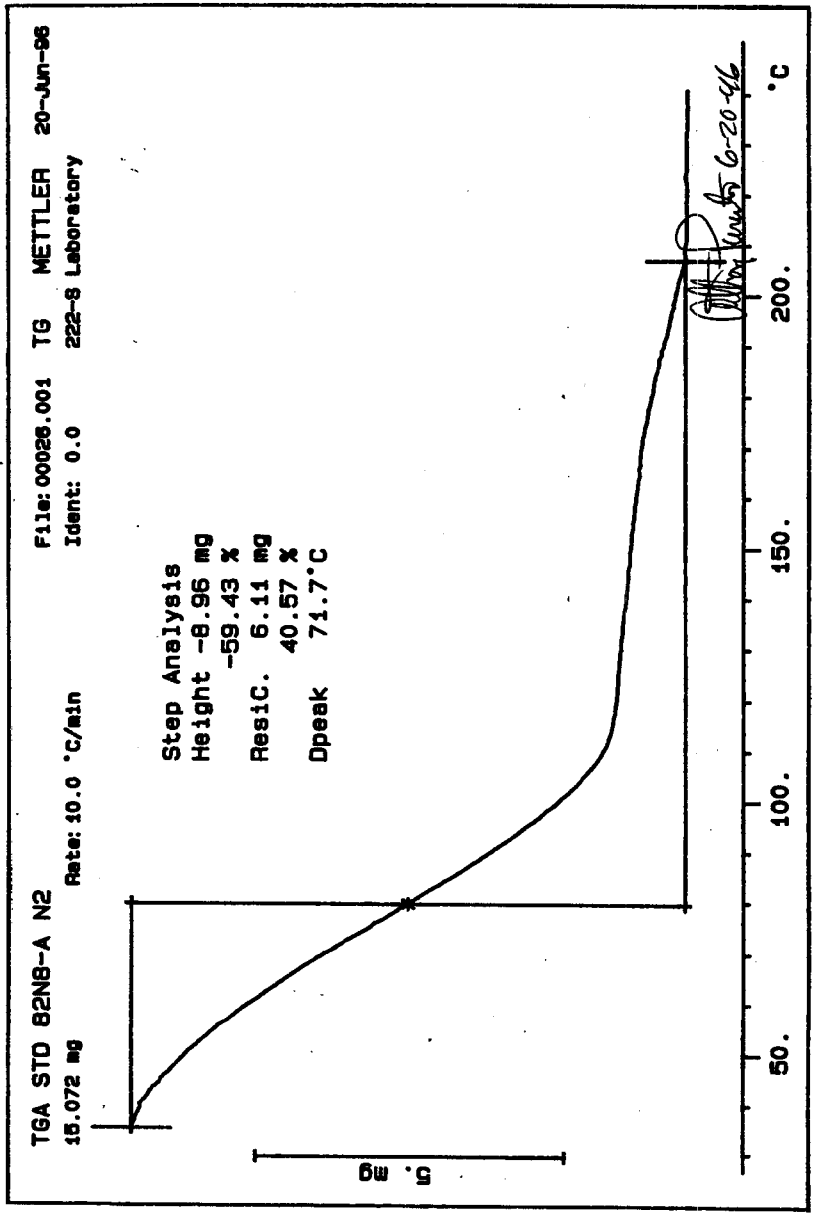
Analyst Signature Date 6/25/96

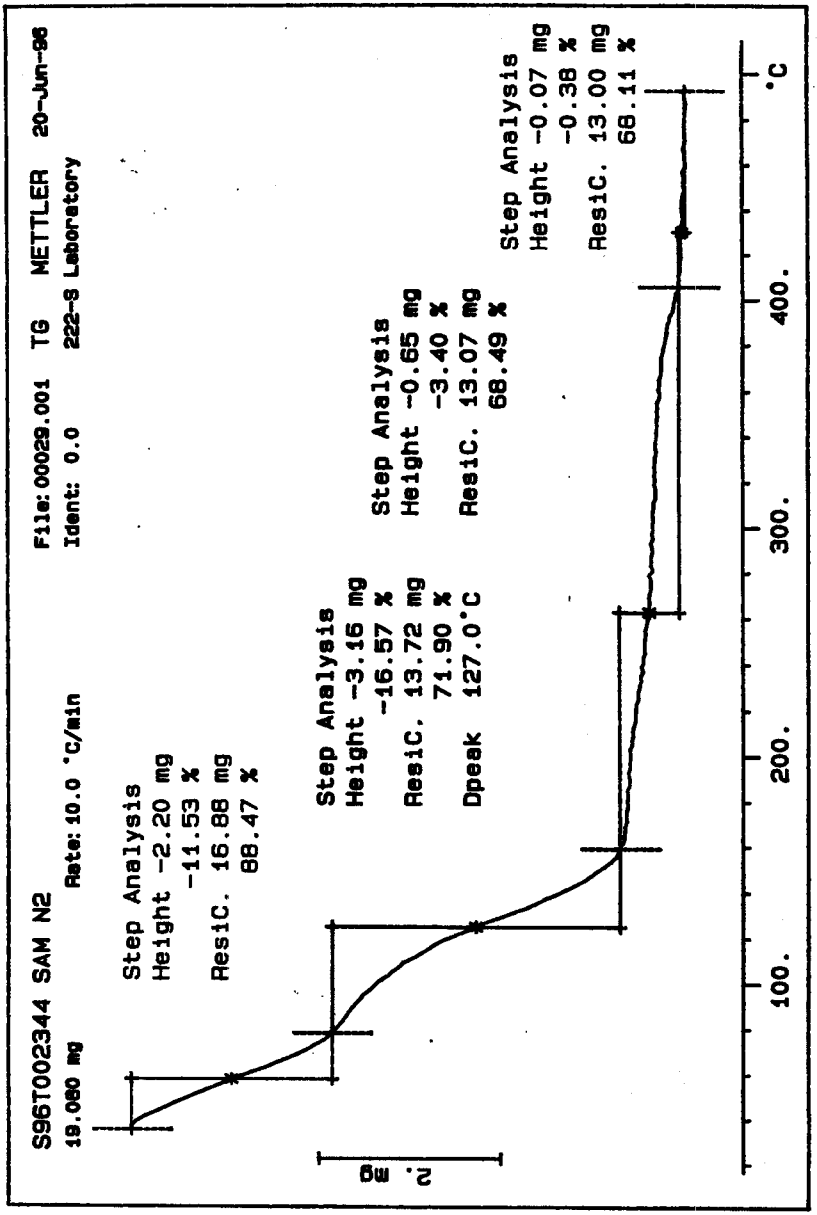
Verified/Validate by
Blandina
Valenzuela
6-26-96

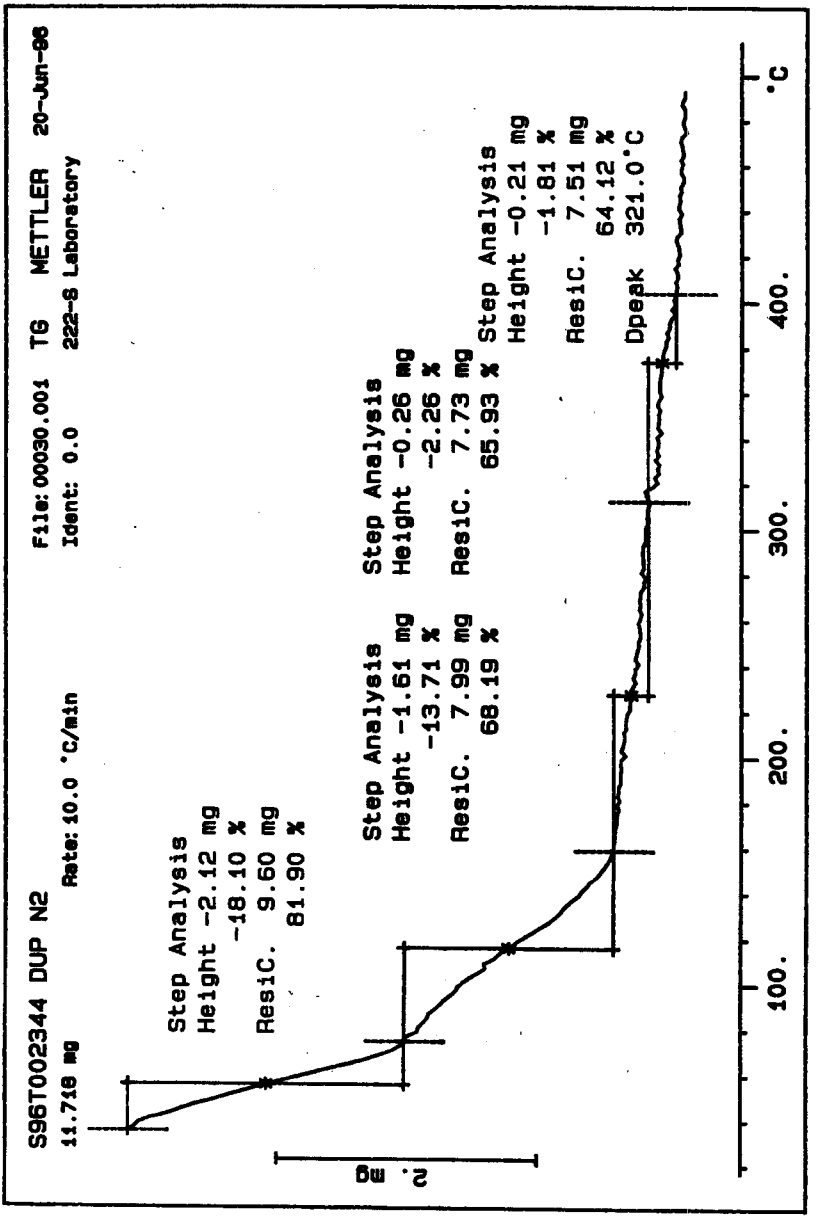
Data Entry Comments: Sample results are the sum of two weight loss steps.

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 CHENICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 257 TO 259




S96T002344 SAM N2
19.080 mg
Rate: 10.0 °C/min
File: 00029.001 TG METTLER 20-Jun-96
Ident: 0.0 222-S Laboratory
Step Analysis
Height -2.20 mg
-11.53 %
ResiC. 16.88 mg
88.47 %
Step Analysis
Height -3.15 mg
-16.57 %
ResiC. 13.72 mg
71.90 %
Dpeak 127.0°C
Step Analysis
Height -0.65 mg
-3.40 %
ResiC. 13.07 mg
68.49 %
Step Analysis
Height -0.07 mg
-0.38 %
ResiC. 13.00 mg
68.11 %
mg
100.
200.
300.
400.
°C


S96T002344 DUP N2
11.718 mg
Rate: 10.0 °C/min
File: 00030.001
Ident: 0.0
TG METTLER 20-Jun-96
222-S Laboratory
Step Analysis
Height -2.12 mg
-18.10 %
ResiC. 9.60 mg
81.90 %
Step Analysis
Height -1.61 mg
-13.71 %
ResiC. 7.99 mg
68.19 %
Step Analysis
Height -0.26 mg
-2.26 %
ResiC. 7.73 mg
65.93 %
Step Analysis
Height -0.21 mg
-1.81 %
ResiC. 7.51 mg
64.12 %
Dpeak 321.0°C
mg
100.
200.
300.
400.
°C

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