SMALL-SCALE SAFETY TEST
REPORT FOR RDX (SECOND
CALIBRATION)


April 12, 2011
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This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.
Small-scale Safety Test Report for RDX (second calibration)

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April 6, 2011

LLNL-TR-XXXX

This work is performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.
Distribution: IDCA project file, SSST file, IDCA team members (Indian Head, Tyndall, LANL, SNL)

Sample: RDX was provided by Indian Head and was dried at 60°C for 16 hours, cooled and kept in a desiccator before use.

Please note that the impact testing was done on both pellets and loose powder which resulted in different data. The impact sensitivity on pressed pellets was 34 cm that is greater than that on loose powder, as expected. The impact test data on the loose powder was similar to what Indian Head and LANL got. Remarkable consistent results were observed for test results of loose powder RDX. The average impact sensitivity (DHSO) was 21.8 cm and the average friction sensitivity (FSO) for loose powder was 24.9 kg, respectively. DSC charts showed that peak temperatures and onset temperatures for all 3 runs of RDX samples were almost identical. All electrostatic spark sensitivity was 0/10 @ 1.0 J with a 510-ohm resistor in the discharge circuit.

### Impact Test Result Summary for RDX

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Test Date</th>
<th>Temperature, F</th>
<th>Relative Humidity (RH), %</th>
<th>Height for 50% Reaction (DHSO), cm</th>
<th>Standard Deviation (σ), log unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDX (IH), 15089, pellets</td>
<td>09/08/10</td>
<td>75</td>
<td>32</td>
<td>34.0</td>
<td>0.059</td>
</tr>
<tr>
<td>RDX (IH), 15089, loose powder</td>
<td>09/09/10</td>
<td>75</td>
<td>30</td>
<td>22.9*</td>
<td>0.042</td>
</tr>
<tr>
<td>RDX (IH), 15089, loose powder</td>
<td>09/13/10</td>
<td>73</td>
<td>23</td>
<td>20.7*</td>
<td>0.095</td>
</tr>
</tbody>
</table>

* 180 grit paper

### Friction Test Result Summary for RDX

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Test Date</th>
<th>Temp., F</th>
<th>Relative Humidity (RH), %</th>
<th>Friction Reaction (TIL)* 0/10 @ kg</th>
<th>Friction Reaction 1/10 @ kg</th>
<th>Load for 50% Reaction (FSO), kg</th>
<th>Standard Deviation (σ), log unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDX (IH), 15089</td>
<td>09/08/10</td>
<td>75</td>
<td>26</td>
<td>16.0</td>
<td>16.8</td>
<td>23.1</td>
<td>0.035</td>
</tr>
<tr>
<td>RDX (IH), 15089</td>
<td>09/09/10</td>
<td>75</td>
<td>31</td>
<td>16.8</td>
<td>18.0</td>
<td>25.4</td>
<td>0.054</td>
</tr>
<tr>
<td>RDX (IH), 15089</td>
<td>09/09/10</td>
<td>75</td>
<td>31</td>
<td>16.8</td>
<td>19.2</td>
<td>26.0</td>
<td>0.050</td>
</tr>
</tbody>
</table>
- TIL - Threshold initiation is the load (kg) at which zero reaction out of ten trials with at least one reaction out of ten trials at the next higher load level.

### Static Spark Test Result Summary for RDX

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Test Date</th>
<th>Temperature, F</th>
<th>Relative Humidity (RH), %</th>
<th>Spark Reaction* 0/10 @</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDX (IH), 15089</td>
<td>09/08/10</td>
<td>75</td>
<td>26</td>
<td>1.0 Joule</td>
</tr>
<tr>
<td>RDX (IH), 15089</td>
<td>09/08/10</td>
<td>75</td>
<td>32</td>
<td>1.0 Joule</td>
</tr>
<tr>
<td>RDX (IH), 15089</td>
<td>09/10/10</td>
<td>75</td>
<td>29</td>
<td>1.0 Joule</td>
</tr>
</tbody>
</table>

* With a 510 ohms resistor in the discharge circuit.

### DSC Test Result Summary for RDX

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Test Date</th>
<th>DSC Onset/Peak Temperature, F Closed Hermetic Pan, (ΔH, J/g)</th>
<th>DSC Onset/Peak Temperature, F Pinhole Hermetic Pan, (ΔH, J/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDX (IH), 15089</td>
<td>08/27/10</td>
<td>187.3/188.3 (125.7, endotherm); 215.6/238.0 (exotherm, 3517)</td>
<td>187.4/188.4 (109.5, endotherm); 213.1/240.1 (exotherm, 2432)</td>
</tr>
<tr>
<td>RDX (IH), 15089</td>
<td>08/27/10</td>
<td>187.3/188.3 (132.4, endotherm); 214.6/231.2 (exotherm, 3478)</td>
<td>187.5/188.6 (129.2, endotherm); 215.6/240.6 (exotherm, 2419)</td>
</tr>
<tr>
<td>RDX (IH), 15089</td>
<td>08/27/10</td>
<td>187.4/188.3 (114.1, endotherm); 215.2/230.6 (exotherm, 3805)</td>
<td>187.4/188.4 (135.4, endotherm); 217.9/238.7 (exotherm, 2399)</td>
</tr>
</tbody>
</table>

Energetic Materials Center
Lawrence Livermore National Laboratory

Unclassified Correspondence
DROP HAMMER TEST REPORT

Operator: Gary Hust
Reviewed and approved by: Peter Hsu
Date of Test: 9/8/10

Name of Explosive: RDX
Identification Number: 15089
Composition: 1 of 3
Requester: Peter Hsu
Project No: 34339
Task No: 108103
Sample Description: 35 mg Pellets
Test Type: 12 A
Temperature: 75 °F
Humidity: 32%
Book Reference: 23-96

Number of X's 8
Number of O's 7
+/-.5 0.5
Least Height for X's or O's 28.1
LOG of Least Height 1.4487
LOG of Interval 0.05

# of Events at Least Height 2 28.1
# of Events at Next Height 2 31.5
# of Events at Next Height 3 35.4
# of Events at Next Height 0 39.7
# of Events at Next Height 0 44.5
# of Events at Next Height 0 50.0

Dh_{50} CALCULATION

REMARKS:
Sum (N_i * i) 8
Sum of Events for Calculation 7
LOG of Dh_{50} 1.5308
Dh_{50} 34.0 cm

STANDARD DEVIATION CALCULATION

Sum (N_i * i^2) 14
STANDARD DEVIATION 0.059

MAXIMUM Dh_{50} 4.9 38.9 cm
MINIMUM Dh_{50} -4.3 29.7 cm
Impact (drop hammer) Test Worksheet

Test Date: 09/08/2010

Sample description: RDX (Indian Head) standard, first test of second series

ID Number: 15089

Temperature: 75 F  Relative humidity: 32%

Table 1: Impact test for determining the height for 50% reaction

<table>
<thead>
<tr>
<th>Height, cm</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>ΣX</th>
<th>Σ0</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>31.5</td>
<td>0</td>
<td></td>
<td>X</td>
<td></td>
<td>0</td>
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<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>35.4</td>
<td>0</td>
<td>X</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>39.7</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total: 8 7

* X- reaction indicated by voltmeter reading ≥ 1.3 V
0- no reaction indicated by voltmeter reading < 1.3 V

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Gary Hust  
Operator

Peter C. Hsu  
RI for impact test
**FRICITION TEST REPORT**

Operator: Gary Hsu
Test date: 9/8/10

Reviewed and approved by: Peter Hsu
Requester: Peter Hsu

Project No: 35339
Book Reference: 3-86

Task: 108103
1 of 3

Material: RDX

Identification Number: 15089

Composition: Pure RDX

Temperature: 75°F
Relative Humidity: 26%

Test Results: 1/10 @ 16.8 kg
Test Results: 0/10 @ 16.0 Kg

<table>
<thead>
<tr>
<th>Number of X's</th>
<th>Number of O's</th>
<th>+/- 0.5</th>
<th>#2</th>
<th>Datasheet Weight</th>
<th>Go (X)</th>
<th>No Go (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>9</td>
<td>-0.5</td>
<td>21.6</td>
<td>25.2</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

Least Friction Weight for X's or O's: 21.6
LOG of Least Friction Weight: 1.3345

LOG of Interval: 0.06

<table>
<thead>
<tr>
<th># of Events</th>
<th>Wt, kg</th>
<th># of Events at Least Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25.2</td>
<td>32.4</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>28.8</td>
<td>28.8</td>
<td>X</td>
<td>25.2</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
</tr>
<tr>
<td>1</td>
<td>32.4</td>
<td>25.2</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
</tr>
<tr>
<td>0</td>
<td>36.0</td>
<td>25.2</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
<td>28.8</td>
<td>X</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dh50 CALCULATION**

Sum (N, * i) = 6
Sum of Events for Calculation = Total = 6

LOG of F50 = 1.3645

F50 = 23.1 Kg

**STANDARD DEVIATION CALCULATION**

Sum (N, * i^2) = 8

STANDARD DEVIATION = 0.035

MAXIMUM F50 = 2.0 Kg
MINIMUM F50 = -1.8 Kg
ELECTROSTATIC SPARK TEST REPORT

Operator: Gary Hust GH Test Date: 9/8/10
Reviewed and Approved by: Peter Hsu pch
Requestor: Peter Hsu
Project No: 34339
Task No: 108103 Temp: 75 °F
Material: RDX-1 R.H: 26%
ID Number: 15089

Composition:

<table>
<thead>
<tr>
<th>CAP. (pF)</th>
<th>VOLTS (kV)</th>
<th>RESISTANCE (ohms)</th>
<th>GAP (in.)</th>
<th>ENERGY (Joules)</th>
<th>REACTION (YES or NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
</tr>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
</tr>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
</tr>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
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<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
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<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
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<td>NO</td>
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<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
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<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
</tr>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
</tr>
</tbody>
</table>

0 OF 10 TESTS @ 1.0 JOULES WITH 510-OHM RESISTANCE

_____ IS SPARK SENSITIVE  X  IS NOT SPARK SENSITIVE

REMARKS:

RDX-1.090810S.xls
Operator: Gary Hust
Reviewed and approved by: Peter Hsu
Date of Test: 9/13/10
Name of Explosive: RDX-3
Identification Number: 15089
Composition: 3 of 3
Requester: Peter Hsu
Project No: 34339
Task No: 108103
Sample Description: 35 mg Powder
Test Type: 12 A
Temperature: 75 °F
Humidity: 30%
Book Reference: 23-99

Number of X's 9
Number of O's 6
+/-. 0.5 0.5
Least Height for X's or O's 15.8
LOG of Least Height 1.1987
LOG of Interval 0.05
# of Events at Least Height 1 15.8
# of Events at Next Height 1 17.7
# of Events at Next Height 2 19.9
# of Events at Next Height 2 22.3
# of Events at Next Height 0 25.0
# of Events at Next Height 0 28.1

Dh_{50} CALCULATION
REMARKS: USED 180 grit Garnet SAND PAPER

\[ \sum (N_i * i) \]
\[ \text{Sum of Events for Calculation} \quad 6 \]

LOG of Dh_{50} 1.3153
Dh_{50} 20.7 cm

STANDARD DEVIATION CALCULATION

\[ \sum (N_i * i^2) \]
\[ \text{Sum (N_i * i^2)} \quad 27 \]

STANDARD DEVIATION 0.095

MAXIMUM Dh_{50} 5.0 25.7 cm
MINIMUM Dh_{50} -4.0 16.6 cm
Impact (drop hammer) Test Worksheet

Test Date: 09/13/2010

Sample description: RDX (Indian Head) standard, third test of second series

ID Number: 15089

Temperature: 75 F Relative humidity: 30%

Table 1: Impact test for determining the height for 50% reaction

<table>
<thead>
<tr>
<th>Height, cm</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>ΣX</th>
<th>ΣO</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.8</td>
<td></td>
<td></td>
<td></td>
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<td>17.7</td>
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<td>31.5</td>
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<td>35.4</td>
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<td></td>
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<tr>
<td>39.7</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Total: 9 6

* X- reaction indicated by voltmeter reading ≥ 1.3 V
0- no reaction indicated by voltmeter reading < 1.3 V

Gary Hust
Operator

Peter C. Hsu
RI for impact test
### FRICTION TEST REPORT

**Operator:** Gary Hust  
**Test date:** 9/9/10

**Reviewed and approved by:** Peter Hsu  
**Requester:** Peter Hsu

**Project No:** 35339  
**Book Reference:** 3-86

**Task:** 108103

**Material:** RDX  
**Identification Number:** 15089

**Composition:** Pure RDX

**Temperature:** 75°F  
**Relative Humidity:** 31%

**Test Results:** 1/10 @ 18.0 kg  
**Test Results:** 0/10 @ 16.8 kg

<table>
<thead>
<tr>
<th>Number of X's</th>
<th>7</th>
<th>Datasheet Weight</th>
<th>Go (X)</th>
<th>No Go (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/- 0.5</td>
<td>-0.5 #2</td>
<td>21.6</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

**Least Friction Weight for X's or O's:** 25.2

**LOG of Least Friction Weight:** 1.4014  
**LOG of Interval:** 0.06

<table>
<thead>
<tr>
<th># of Events at Least Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th># of Events at Next Weight</th>
<th>D_{50} CALCULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>1</td>
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<td>0</td>
<td>2</td>
<td>21.6</td>
</tr>
<tr>
<td>25.2 Wt., kg</td>
<td>28.3</td>
<td>32.4</td>
<td>36.0</td>
<td>25.2</td>
<td>25.2</td>
<td>25.2</td>
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</tbody>
</table>

**D_{50} = 21.6 kg**

**Sum (N_i * i)**: 4  
**Sum of Events for Calculation**: 7

**LOG of \( F_{50} \)**: 1.4057  
**\( F_{50} \)**: 25.4

**STANDARD DEVIATION CALCULATION**

<table>
<thead>
<tr>
<th>Sum (N_i * i')</th>
<th>6</th>
</tr>
</thead>
</table>

**STANDARD DEVIATION:** 0.054

**MAXIMUM \( F_{50} \)**: 3.4  
**MINIMUM \( F_{50} \)**: -3.0

**RDX-2.090910F_R.xls**
ELECTROSTATIC SPARK TEST REPORT

Operator: Gary Hust GH  Test Date: 9/9/10

Reviewed and Approved by: Peter Hsu PCH

Requestor: Peter Hsu

Project No: 34339

Task No: 108103

Temp: 75 °F

Material: RDX-2

R.H: 32%

ID Number: 15089

Composition:

<table>
<thead>
<tr>
<th>CAP. (pF)</th>
<th>VOLTS (kV)</th>
<th>RESISTANCE (ohms)</th>
<th>GAP (in.)</th>
<th>ENERGY (Joules)</th>
<th>REACTION (YES or NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
<td>1.00</td>
<td>NO</td>
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</table>

0 OF 10 TESTS @ 1.0 JOULES WITH 510-OHM RESISTANCE

_____ IS SPARK SENSITIVE  _____X___ IS NOT SPARK SENSITIVE

REMARKS:

RDX-2.090910S.xls
Sample: RDX IDCA #15089
Size: 0.3190 mg
Method: RT - 500 @ 10cpm
Comment: Hsu_Closed hermetic

File: C:\TA\Data\Q-DSC\2010\Q10-1152.001
Operator: Turner
Run Date: 27-Aug-2010 17:34
Instrument: DSC Q2000 V24.4 Build 116

DSC

Temperature (°C)
Heat Flow (W/g)

231.15°C
187.28°C 132.4 J/g
188.34°C 3478 J/g
214.60°C
DROP HAMMER TEST REPORT

Operator: Gary Hust
Reviewed and approved by: Peter Hsu
Date of Test: 9/9/10

Name of Explosive: RDX
Identification Number: 15089
Composition: 2 of 3
Requester: Peter Hsu
Project No: 34339
Task No: 108103
Sample Description: 35 mg Powder
Test Type: 12 A
Temperature: 75 °F
Humidity: 30%
Book Reference: 23-97

Number of X's 8
Number of O's 7
+/-. 0.5 0.5
Least Height for X's or O's 19.9
LOG of Least Height 1.2989
LOG of Interval 0.05
# of Events at Least Height 3 19.9
# of Events at Next Height 3 22.3
# of Events at Next Height 1 25.1
# of Events at Next Height 0 28.1
# of Events at Next Height 0 31.5
# of Events at Next Height 0 35.4

Dh_{50} CALCULATION
REMARKS: USED 180 grit Garnet SAND PAPER

: 
Sum (N_{i} * i) 5
Sum of Events for Calculation 7
LOG of Dh_{50} 1.3596

Dh_{50} 22.9 cm

STANDARD DEVIATION CALCULATION

Sum (N_{i} * i^2) 7
STANDARD DEVIATION 0.042

MAXIMUM Dh_{50} 2.3 25.2 cm
MINIMUM Dh_{50} -2.1 20.8 cm

RDX-2.090910DH.xls
Impact (drop hammer) Test Worksheet

Test Date: __________ 09/09/2010 __________

Sample description: RDX (Indian Head) standard, second test of second series

ID Number: _______15089________

Temperature: _______ 74 F _______  Relative humidity: _______ 30% _______

Table 1: Impact test for determining the height for 50% reaction

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<thead>
<tr>
<th>Height,</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
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<th>Σ0</th>
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</tr>
</tbody>
</table>

Total: 8 7

* X- reaction indicated by voltmeter reading ≥ 1.3 V.
0- no reaction indicated by voltmeter reading < 1.3 V

__________________________
Gary Hust
Operator

__________________________
Peter C. Hsu
RI for impact test
## FRICTION TEST REPORT

<table>
<thead>
<tr>
<th>Operator:</th>
<th>Gary Hsu</th>
<th>Test date:</th>
<th>9/9/10</th>
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<td>Peter Hsu</td>
<td></td>
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<td>Requester:</td>
<td>Peter Hsu</td>
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<td>Material:</td>
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<td>Composition:</td>
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<td>Relative Humidity:</td>
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<td>Test Results:</td>
<td>1/10 @ 19.2 kg</td>
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<tr>
<td></td>
<td>0/10 @ 16.8 Kg</td>
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<tr>
<td>Number of X's</td>
<td>7</td>
<td>Datasheet</td>
<td>Go (X)</td>
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<tr>
<td>Number of O's</td>
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<td>Weight</td>
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<td>+/- 0.5</td>
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<td>LOG of F50</td>
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<td>F50</td>
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</tr>
</tbody>
</table>

## STANDARD DEVIATION CALCULATION

| Sum (N, * i²) | 7 |
| STANDARD DEVIATION | 0.050 |

MAXIMUM F50 | 3.2 | 29.2 | Kg |
MINIMUM F50 | -2.8 | 23.1 | Kg |
ELECTROSTATIC SPARK TEST REPORT

Operator: Gary Hust GH

Test Date: 9/10/10

Reviewed and Approved by: Peter Hsu

Requestor: Peter Hsu

Project No: 34339

Task No: 108103

Temp: 75 °F

Material: RDX-3

R.H: 29%

ID Number: 15089

Composition:

<table>
<thead>
<tr>
<th>CAP. (pF)</th>
<th>VOLTS (kV)</th>
<th>RESISTANCE (ohms)</th>
<th>GAP (in.)</th>
<th>ENERGY (Joules)</th>
<th>REACTION (YES or NO)</th>
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<tbody>
<tr>
<td>20K</td>
<td>10</td>
<td>510</td>
<td>.007</td>
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<td>NO</td>
</tr>
<tr>
<td>20K</td>
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<td>.007</td>
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</tbody>
</table>

0 OF 10 TESTS @ 1.0 JOULES WITH 510-OHM RESISTANCE

_____ IS SPARK SENSITIVE     _____X__ IS NOT SPARK SENSITIVE

REMARKS:

RDX-3.091010S.xls
Sample: RDX IDCA #15089
Size: 0.3040 mg
Method: RT - 500 @ 10cpm
Comment: Hsu_Closed hermetic

File: C:\TA\Data\Q-DSC\2010\Q10-1150.001
Operator: Turner
Run Date: 27-Aug-2010 15:38
Instrument: DSC Q2000 V24.4 Build 116

DSC

Heat Flow (W/g)

230.59°C
187.35°C
114.1 J/g
215.16°C
188.32°C
3805 J/g

Temperature (°C)