Date: OCTOBER 9, 2020
Customer:
BlueRose Packaging and Shipping Supplies, Inc.
2662 E 20th St. Unit \# 309
Signal Hill, CA 90755
Purchase Order Number: 1366238

## EVALUATION TO UL 94

## SPECIFICATIONS:

UL 94, Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

## TESTS:

UL 94, Section, Horizontal Burning Test; HB
UL 94, Section 8, 50 W ( 20 mm ) Vertical Burning Test; V-0, V-1, or V-2
UL 94, Section 9, $500 \mathrm{~W}(125 \mathrm{~mm})$ Vertical Burning Test; 5VA or 5VB
TEST MATERIAL IDENTIFICATION:
Test Code: WCD-BRFB-2102FP
Treatment: "Firetect WT-102" and "Firetect Fire-Poof CB" Fire Retardant Formulas Corrugated Board Material: WCD-BRFB-2102FP

## RESULTS:

This is to certify that the samples were subjected to testing according to the above specifications.

See Page 2 for Summary of Test Results.
Test data and equipment list are attached.
J. Mazariegos

Project Manager
Technical Reviewer
D. Robertson

Quality
Quality Representative

## REVISIONS

| Revision | Reason for Revision | Date |
| :---: | :---: | :---: |
| NR | Initial Release |  |
|  |  | $2020-10-02$ |
|  |  |  |

SUMMARY OF TEST RESULTS

| Test | Material ID | Results |
| :---: | :---: | :---: |
| Horizontal Burning Test | WCD-BRFB-2102FP | Compliant for <br> UL 94 HB |
| 50W Vertical Burning Test | WCD-BRFB-2102FP | Compliant for <br> UL 94 V-0 |
| 500W Vertical Burning Test - <br> Bar and Plate | WCD-BRFB-2102FP | Compliant for <br> UL 94 5VA |
| 500W Vertical Burning Test - <br> Bar | WCD-BRFB-2102FP | Compliant for <br> UL 94 5VB |

HORIZONTAL BURNING TEST: HB

| TEST Code: | WCD-BRFB-2102FP |
| ---: | :--- |
| TREATMENT: | "Firetect WT-102" and "Firetect Fire-Poof CB" <br> Fire Retardant Formulas |
| CorRUGATED BOARD MATERIAL: | WCD-BRFB-2102FP |
| TEST METHOD VARIATION(S): | None |
| EQUIPMENT USED: | See Equipment Page |
| SAMPLE PREP PERFORMED BY: | J. Juarez |
| TEST(S) PERFORMED BY: | J. Juarez |
| TEST PERFORMED AT: | 1435 S. Allec St., Anaheim CA 92805 |
| TEST DATE: | $06 / 26 / 2020$ |

## SPECIMENS

Bar specimens measuring $125 \pm 5 \mathrm{~mm}$ long by $13.0 \pm 0.5 \mathrm{~mm}$ wide with the edges sanded smooth and the corners having a radius not exceeding 1.3 mm

## REQUIREMENT

a. Not have a burning rate exceeding 40 mm per minutes over a 75 mm span for specimens having at thickness of 3.0 to 13 mm or
b. Not having a burning rate exceeding 75 mm per minute over a 75 mm span for specimens having a thickness less than 3.0 mm or
c. Cease to burn before the 100 mm reference mark.

## METHOD

Two sets of three bar samples were conditioned at $23 \pm 2^{\circ} \mathrm{C}$ and $50 \pm 10 \%$ relative humidity for a minimum of 48 hours.

Three samples are to be marked with two lines perpendicular to longitudinal axis at $25 \pm 1 \mathrm{~mm}$ and $100 \pm 1 \mathrm{~mm}$ from the ends of the sample.

Clamp the sample at the end of 100 mm with a $45 \pm 2^{\circ}$ incline. A wire gauze to be complied horizontally beneath the sample with a distance of $10 \pm 1 \mathrm{~mm}$ from lowest edge of sample. Adjust the methane gas supply to produce a gas flow rate of $105 \pm 5 \mathrm{ml} / \mathrm{min}$ with a backpressure less than 10 mm of water. Adjust the burner to produce a blue flame $20 \mathrm{~mm} \pm 1 \mathrm{~mm}$ high. Apply the flame to the free end at the lower edge of the specimen. The burner is to be on the same vertical plane at the bottom edge of the specimen at an angle of $45 \pm 2^{\circ}$ (see Figure 7.1). Position the burner so that flame impinges on the free end of the specimen at a depth of $6 \pm 1 \mathrm{~mm}$. Apply the test flame for $30 \pm 1$ seconds or once flame reached the 25 mm mark. Record the time in seconds for the distance travel from the 25 mm mark to the 100 mm mark and record the damaged length.

## HORIZONTAL BURNING TEST: HB

## ENVIRONMENTAL CONDITIONS

Unless specified otherwise in the individual methods, the test shall be conducted under the following environmental conditions. Confirmation of these conditions shall be recorded at the time the test is conducted. The laboratory conditions when not specified in the test method shall be $15-35^{\circ} \mathrm{C}$ and $\leq 75 \% \mathrm{RH}$. If it specified in the test method, the requirements are noted with the recording of the environmental conditions.

## RESULTS

See datasheet.

## Horizontal Burning Test - UL 94, Section 7

| NTS Project: PR120234 | Corrugated Board $\qquad$ Test Code: $\qquad$ |
| :---: | :---: |
| SOLDER LIMITS | Treatment : "Firetect WT-102" and "Firetect Fire-Poof CB" Fire Retardant Formulas |
| Temp/Time: N/A | Nom. Sample Thk.: As-Measured <br> Avg. Sample Thk.: 1.714 mm |


|  | $\geq \stackrel{\substack{0 \\ 0}}{\frac{0}{0}}$ | $\begin{array}{\|c} \text { Sample } \\ \text { Thk: } \quad(\mathrm{mm}) \end{array}$ | Burning Beyond 25 mm |  | Burning Rate $V=60 \mathrm{~L} / \mathrm{t}$ <br> $\mathrm{mm} / \mathrm{min}$ | UL 94 <br> Flame Class |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Time, t (Sec.) | Damaged Length <br> L (mm) |  |  |
| CONDITION A: | 1 | 1.775 | 0.0 | 0 | N/A | HB |
| Minimum 48 Hours | 2 | 1.591 | 0.0 | 0 | N/A | HB |
| $23 \pm 2^{\circ} \mathrm{C}$ \& $50 \pm 5 \% \mathrm{RH}$ | 3 | 1.776 | 0.0 | 0 | N/A | HB |

Test Results: Meets the requirements of UL 94 Section 7 classification HB

HORIZONTAL BURN IMAGES


Figure 1: HB, Back Side


Figure 2: HB Front Side


Figure 3: HB Setup

## 20 MM VERTICAL BURNING TEST: V-0, V-1 OR V-2

| TEST Code: | WCD-BRFB-2102FP |
| ---: | :--- |
| TREATMENT: | "Firetect WT-102" and "Firetect Fire-Poof CB" <br> Fire Retardant Formulas |
| Corrugated Board MAtERIAL: | WCD-BRFB-2102FP |
| TEST PROCEDURES: | UL 94, Section 8 |
| TEST METHOD VARIATION(S): | None |
| EQUIPMENT USED: | See Equipment Page |
| SAMPLE PREP PERFORMED BY: | J. Juarez |
| TEST(S) PERFORMED BY: | J. Juarez |
| TEST PERFORMED AT: | 1435 S. Allec St., Anaheim CA 92805 |
| TEST DATE: | $2020-06-26$ |

## SPECIMENS

Bar specimens measuring $125 \pm 5 \mathrm{~mm}$ long by $13.0 \pm 0.5 \mathrm{~mm}$ wide with the corners having a radius not exceeding 1.3 mm

## REQUIREMENT

| Criteria conditions | V-0 | V-1 | V-2 |
| :--- | :---: | :---: | :---: |
| Afterflame time for each individual specimen $t_{1}$ or $t_{2}$ | $\leq 10 \mathrm{~s}$ | $\leq 30 \mathrm{~s}$ | $\leq 30 \mathrm{~s}$ |
| Total afterflame time for any condition set ( $\mathrm{t}_{1}$ plus $\mathrm{t}_{2}$ for the 5 specimens) | $\leq 50 \mathrm{~s}$ | $\leq 250 \mathrm{~s}$ | $\leq 250 \mathrm{~s}$ |
| Afterflame plus afterglow time for each individual specimen after the second | $\leq 30 \mathrm{~s}$ | $\leq 60 \mathrm{~s}$ | $\leq 60 \mathrm{~s}$ |
| flame application ( $\mathrm{t}_{2}+\mathrm{t}_{3}$ ) |  |  |  |
| Afterflame or afterglow of any specimen up to the holding clamp | No | No | No |
| Cotton indicator ignited by flaming particles or drops | No | No | Yes |

## METHOD

Two sets of five bar samples are conditioned at $70 \pm 2^{\circ} \mathrm{C}$ for $168 \pm 2$ hours and then cooled in a desiccator for at least 4 hours. After being subjected to the thermal shock described in the Thermal Shock section of this report, an additional two sets are conditioned at $23 \pm 2^{\circ} \mathrm{C}$ and $50 \pm 10 \%$ relative humidity for a minimum of 48 hours.

After conditioning, clamp the specimen from the upper 6 mm of the specimen. Clamp the specimen with the longitudinal axis vertical, so that the lower end of the specimen is $300 \pm 10 \mathrm{~mm}$ above a horizontal layer of not more than 0.08 g of absorbent 100 percent cotton thinned to approximately 50 $x 50 \mathrm{~mm}$ and a maximum thickness of 6 mm . See Figure 8.1, UL 94. Adjust the methane gas supply to produce a gas flow rate of $105 \pm 5 \mathrm{ml} / \mathrm{min}$ with a back pressure less than 10 mm of water.

Adjust the burner to produce a blue flame $20 \mathrm{~mm} \pm 1 \mathrm{~mm}$ high. Apply the flame centrally to the middle point of the bottom edge of the specimen so that the top of the burner is $10 \pm 1 \mathrm{~mm}$ below that point of the lower end of the specimen. Maintain the flame at that distance for $10 \pm 0.5$ seconds, moving the burner as necessary in response to any changes in the length or position of the specimen.

## 20 MM VERTICAL BURNING TEST: V-0, V-1, OR V-2

## METHOD (Continued)

After application of the of the flame to the specimen for $10 \pm 0.5$ seconds, immediately withdraw the burner at a rate of approximately $300 \mathrm{~mm} / \mathrm{sec}$, to a distance at least 150 mm away from the specimen and simultaneously commence measurement of the afterflame time. Record the afterflame time ( $\mathrm{t}_{1}$ ). As soon as the afterflame ceases, even if the burner has not been withdrawn to the full 150 mm distance from the specimen, immediately place the burner again centrally under the specimen at a distance of $10 \pm 1$ for an additional $10 \pm 0.5$ seconds. After this second application of the flame to the specimen, immediately remove the burner at a rate of approximately $300 \mathrm{~mm} / \mathrm{sec}$, to a distance at least 150 mm away from the specimen. Simultaneously commence the measurement of the afterflame time ( $\mathrm{t}_{2}$ ) and the afterglow time ( $\mathrm{t}_{3}$ ) and record $\mathrm{t}_{2}$ and $\mathrm{t}_{3}$ in seconds. Record whether or not flaming particles ignited the cotton located directly below bar sample during the flame testing. Record whether or not specimens burn to the holding clamp.

## ENVIRONMENTAL CONDITIONS:

Unless specified otherwise in the individual methods, the test shall be conducted under the following environmental conditions. Confirmation of these conditions shall be recorded at the time the test is conducted. The laboratory conditions when not specified in the test method shall be $15-35^{\circ} \mathrm{C}$ and $\leq 75 \% \mathrm{RH}$. If it specified in the test method, the requirements are noted with the recording of the environmental conditions.

## RESULTS

See datasheet.

## Vertical Burning Test - UL 94, Section 8

| NTS Job No. : PR120234 |  |  |  |  | Corrugated Board: WCD-BRFB-2102FP <br> Test Code: WCD-BRFB-2102FP <br> Treatment: "Firetect WT-102" and "Firetect Fire-Poof CB" <br>   |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOLDER LIMITS |  |  |  |  |  |  |  |  |  |
| Temp/Time: N/A |  |  |  |  | Nom. Sample Thk.: As-Measured |  |  |  |  |
| Test Type Original | $\begin{aligned} & \text { @ } \\ & \frac{13}{3} \\ & \frac{0}{0} \\ & \text { Z } \end{aligned}$ | Sample Thk: <br> (mm) | Afterflames |  | Afterglow$\begin{gathered} \mathrm{t}_{3} \\ (\mathrm{sec}) \end{gathered}$ | Sum of after flames$\begin{gathered} \left(t_{1}+t_{2}\right) \\ (\mathrm{sec}) \end{gathered}$ | Sum of afterflame and | Did samples | Did the |
|  |  |  | $\begin{gathered} \mathrm{t}_{1} \\ (\mathrm{sec}) \end{gathered}$ | $\begin{gathered} \mathrm{t}_{2} \\ (\mathrm{sec}) \end{gathered}$ |  |  | $\begin{gathered} \left(\mathrm{t}_{2}+\mathrm{t}_{3}\right) \\ (\mathrm{sec}) \end{gathered}$ | clamp? |  |
| CONDITION A: <br> 48 Hours $23 \pm 2^{\circ} \mathrm{C}$ $50 \pm 5 \% \mathrm{RH}$ | 1 | 1.596 mm | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | No | No |
|  | 2 | 1.861 mm | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | No | No |
|  | 3 | 1.925 mm | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | No | No |
|  | 4 | 1.903 mm | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | No | No |
|  | 5 | 1.717 mm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | No | No |
| CONDITION A: 168 Hours $70 \pm 1^{\circ} \mathrm{C}$ | 6 | 1.575 mm | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | No | No |
|  | 7 | 1.661 mm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | No | No |
|  | 8 | 1.556 mm | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | No | No |
|  | 9 | 1.655 mm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | No | No |
|  | 10 | 1.557 mm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | No | No |

Test Results: Meets the requirements of UL 94 Section 8 classification V-0

|  | Material Classifications |  |  |
| :--- | :---: | :---: | :---: |
| Criteria Conditions | V-0 | V-1 | V-2 |
| Afterflame time for indiviudal sample $\mathrm{t}_{1}$ or $\mathrm{t}_{2}$ | $\leq 10 \mathrm{~s}$ | $\leq 30 \mathrm{~s}$ | $\leq 30 \mathrm{~s}$ |
| Total afterflame time for any condition set ( $\mathrm{t}_{1}$ plus $\mathrm{t}_{2}$ for the five <br> specimens) | $\leq 50 \mathrm{~s}$ | $\leq 250 \mathrm{~s}$ | $\leq 250 \mathrm{~s}$ |
| Afterflame plus afterglow time for each individual specimen after <br> the second flame application $\left(\mathrm{t}_{2}+\mathrm{t}_{3}\right)$ | $\leq 30 \mathrm{~s}$ | $\leq 60 \mathrm{~s}$ | $\leq 60 \mathrm{~s}$ |
| Afterflame or afterglow of any specimen up to the holding clamp | No | No | No |
| Cotton indicator ignitied by flaming particles or drops | No | No | Yes |


| Test Results |  |
| :---: | :---: |
| Cond A | Cond B |
| 2.0 s | 1.0 s |
| 5.0 s | 2.0 s |
| 0.0 s | 0.0 s |
| No | No |
| No | No |

## VERTICAL BURN IMAGES



Figure 4: V; Condition A


Figure 5: V; Condition B


Figure 6: V Setup

## 500W (125 MM) VERTICAL BURNING TEST: 5VA or 5VB

| TEST CODE: | WCD-BRFB-2102FP |
| ---: | :--- |
| TREATMENT: | "Firetect WT-102" and "Firetect Fire-Poof CB" <br> Fire Retardant Formulas |
| CORRUGATED BOARD MATERIAL: | WCD-BRFB-2102FP |
| TEST METHOD VARIATION(S): | None |
| EQUIPMENT USED: | See Equipment Page |
| SAMPLE PREP PERFORMED BY: | J. Juarez |
| TEST(S) PERFORMED BY: | J. Juarez |
| TEST PERFORMED AT: | 1435 S. Allec St., Anaheim CA 92805 |
| TEST DATE: | $2020-06-26$ |

## BAR SPECIMENS

Bar specimens measuring $125 \pm 5 \mathrm{~mm}$ long by $13.0 \pm 0.5 \mathrm{~mm}$ wide with the edges sanded smooth and the corners having a radius not exceeding 1.3 mm

Plate specimens measuring $150 \pm 5 \mathrm{~mm}$ long by $150 \pm 5 \mathrm{~mm}$ wide with the edges sanded smooth and the corners having a radius not exceeding 1.3 mm

## REQUIREMENT

| Criteria conditions | 5VA | 5VB |
| :--- | :---: | :---: |
| Afterflame time plus afterglow time after the fifth flame application $\left(\mathrm{t}_{1}+\mathrm{t}_{2}\right)$ for <br> each individual bar specimen <br> The cotton pad indicator (see 5.13 ignited by flaming particles or drops from <br> any bar test specimen? | No | $\leq 60 \mathrm{~s}$ |
| Classified as V-0 or V-1 | No |  |
| Either <br> - Burn-through occurs with any of the individual plate test specimens <br> - No plate test specimens have been tested | Yes | Yes |

## METHOD

Two sets of five bar and three plate specimens are conditioned at $70 \pm 2^{\circ} \mathrm{C}$ for $168 \pm 2$ hours and then cooled in a desiccator for at least 4 hours. An additional two sets are conditioned at $23 \pm 2^{\circ} \mathrm{C}$ and $50 \pm 10 \%$ relative humidity for a minimum of 48 hours.

After conditioning, for bar specimens clamp the specimen from the upper 6 mm of the specimen. Clamp the specimen with the longitudinal axis vertical, so that the lower end of the specimen is 300 $\pm 10 \mathrm{~mm}$ above a horizontal layer of not more than 0.08 g of absorbent 100 percent cotton thinned to approximately $50 \times 50 \mathrm{~mm}$ and a maximum thickness of 6 mm . See Figure 9.1, UL 94. For plate

## 500W (125 MM) VERTICAL BURNING TEST: 5VA OR 5VB

## METHOD (Continued)

specimens, the flame is then to be applied to the center of the bottom surface of the plate and at angle of $20 \pm 5^{\circ}$ from the vertical, so that the tip of the blue cone is within 0 to 3 mm of the plate surface - without impinging into the specimen. Adjust the methane gas supply to produce a gas flow rate of $965 \pm 30 \mathrm{ml} / \mathrm{min}$ with a backpressure of $125 \pm 25 \mathrm{~mm}$ of water.

Adjust the burner to produce a blue flame $125 \mathrm{~mm} \pm 10 \mathrm{~mm}$ high with an inner blue cone to $40 \pm 2$ mm . Support to burner on the fixture at $20^{\circ} \pm 5^{\circ}$ from the vertical axis. Apply the flame to the lower corner of the specimen so that the tip of the blue cone is within 0 to 3 mm from the specimen edge without impinging on the sample.

Maintain the flame at that distance for $5 \pm 0.5$ seconds, and then remove for $5 \pm 0.5$ seconds for a total of five applications. If the sample drips, shrinks, then adjust the burner as necessary in response to any changes in the length or position of the test specimen. After the fifth flame application for reach specimen, record the afterflame time and afterglow time to the nearest second. For bar specimens record whether specimen drip particles and if particles ignited cotton indicator. For plate specimens record whether or not the flame penetrated (burned through) the plate material.

## ENVIRONMENTAL CONDITIONS

Unless specified otherwise in the individual methods, the test shall be conducted under the following environmental conditions. Confirmation of these conditions shall be recorded at the time the test is conducted. The laboratory conditions when not specified in the test method shall be $15-35^{\circ} \mathrm{C}$ and $\leq 75 \% \mathrm{RH}$. If it specified in the test method, the requirements are noted with the recording of the environmental conditions.

## RESULTS

See datasheet

## Bar Burning Test - UL 94, Section 9.5

| Corrugated Board: WCD-BRFB-2102FP |  |  |
| :---: | :---: | :---: |
| NTS Project No.: | PR120234 | Test Code: WCD-BRFB-2102FP |
| SOLDER LIMITS |  | Treatment: "Firetect WT-102" and "Firetect Fire-Poof CB" Fire Retardant Formulas |
| Temp/Time: N/A |  | Nom. Sample Thk.: As-Measured Avg. Sample Thk.: 1.92 mm |


| Test Type Original | $\begin{aligned} & \infty \\ & 0, \\ & \frac{0}{3} \\ & \frac{0}{\infty} \\ & \vdots \end{aligned}$ | Sample Thk: <br> (mm) | Afterflames <br> $\mathrm{t}_{5}$ <br> $(\mathrm{sec})$ | Afterglow <br> ( $\mathrm{t}_{6}$ ) <br> (sec) | Did Particles Drip? | Did the cotton ignite? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CONDITION A: | 1 | 1.924 mm | 0.0 | 0.0 | No | No |
| 48 Hours | 2 | 1.915 mm | 0.0 | 0.0 | No | No |
| $23 \pm 2^{\circ} \mathrm{C}$ | 3 | 1.920 mm | 0.0 | 0.0 | No | No |
| $50 \pm 10 \% \mathrm{RH}$ | 4 | 1.920 mm | 0.0 | 0.0 | No | No |
|  | 5 | 1.916 mm | 0.0 | 0.0 | No | No |
| CONDITION B: | 6 | 1.925 mm | 0.0 | 0.0 | No | No |
| 168 Hours | 7 | 1.909 mm | 0.0 | 0.0 | No | No |
| $70 \pm 1^{\circ} \mathrm{C}$ | 8 | 1.912 mm | 0.0 | 0.0 | No | No |
|  | 9 | 1.917 mm | 0.0 | 0.0 | No | No |
|  | 10 | 1.921 mm | 0.0 | 0.0 | No | No |

Test Results: Meets the requirements for UL 94 section 9.5 Bar Specimen testing.

| Criteria Conditions | MVAterial Classifications |  |
| :--- | :---: | :---: |
|  | 5VB |  |
| Afterflame time plus afterglow time after the fifth flame <br> application $\left(\mathrm{t}_{1}+\mathrm{t}_{2}\right)$ for each individual bar specimen | $\leq 60 \mathrm{~s}$ | $\leq 60 \mathrm{~s}$ |
| The cotton pad indicator (see 5.13 ignited by flaming <br> particles or drops from any bar test specimen? | No | No |
| Classified as V-0 or V-1 | Yes | Yes |


| Test Results |  |
| :---: | :---: |
| Cond A | Cond B |
| 0.0 s | 0.0 s |
| No | No |
| Yes | Yes |

## Plate Burning Test - UL 94, Section 9.6



Test Results: Meets the requirements for UL 94 section 9.6 Plate Specimen testing.

|  | Material Classifications |  |
| :--- | :---: | :---: |
| Criteria Conditions | 5VA | 5VB |
| Afterflame time plus afterglow time after the fifth flame <br> application $\left(\mathrm{t}_{1}+\mathrm{t}_{2}\right)$ for each individual bar specimen | $\leq 60 \mathrm{~s}$ | $\leq 60 \mathrm{~s}$ |
| The cotton pad indicator (see 5.13 ignited by flaming <br> particles or drops from any bar test specimen? | No | No |
| Classified as V-0 or V-1 | Yes | Yes |


| Test Results |  |
| :---: | :---: |
| Cond A | Cond B |
| 3.0 s | N/A |
| No | N/A |
| Yes | N/A |

5VA BURN IMAGES - BAR


Figure 7: 5VA; Condition A


Figure 8: V; 5VA; Condition B


5VA BURN IMAGES - PLATE


Figure 10: 5VA; Representative image at back side of flame application


Figure 11: V; 5VA; Representative image at flame application

Flame application at bottom of sample


## Test Equipment List

## Calibration Abbreviations

CAL calibrated
NCR no calibration required

## Horizontal Flammability - 50W

| Asset Number | Manufacturer | Description | M/N | S/N | Range | Cal Interval (Months) | Cal Due |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| WC058822 | Mitutoyo | Digital Micrometer | MDC-1" PJ | 293-340 | 0-1.0"" +/- 00005 | 12 | 12/31/2020 |
| WC058860 | Rotronic | HygroPalm 22 | HygroPalm 22 | 60222853 | Indication Only - Use with Calibrated Sensor/Probe | NCR | NCR |
| WC058866 | Rotronic | HygroClip2 <br> Probe | HC2-S | 60264464 | 0 to $100^{\circ} \mathrm{C} \pm 0.1 \mathrm{C}, 0-$ $100 \%$ RH $\pm 0.8$ \%RH Cal PointsTemperature: $25^{\circ} \mathrm{C}$ and $50^{\circ} \mathrm{C}$ Humidity: $20 \%$ and $80 \%$ | 12 | 09/30/2021 |
| WC058879 | Mitutoyo | Digital Caliper, 6"" | CD-6"" CS | 0627090 | $\begin{gathered} 0-150 \mathrm{~mm}(0-6 \text { inch }) \\ +/-0.001 " " \end{gathered}$ | 12 | 12/31/2020 |
| WC059051 | SDL Atlas | Flame Tester | HVUL-Plastics | HVUL-1234 | Flame height mandel $10-125 \mathrm{~mm}$ Burner 20-150mm flame Manometer 0200 mm | NCR | NCR |
| WC059117 | SDL Atlas | Flame UL 94 20 mm Calibration Tool | 18393000 | n/a | $\begin{gathered} 0-1.3,10,13.0 \pm 0.5 \\ 20,125.0 \pm 5.0 \mathrm{~mm} \end{gathered}$ | 60 | 03/02/2022 |
| WC059171 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC059172 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC059173 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC062722 | Teledyne <br> Hastings Instruments | Flow Controller, Digital | HFC-D-302B | 592469001 | $0-1000$ <br> SCCM/Methane | 12 | 03/31/2021 |

Vertical Flammability - 50W

| Asset <br> Number | Manufacturer | Description | M/N | S/N | Range | Cal Interval (Months) | Cal Due |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| WC058822 | Mitutoyo | Digital <br> Micrometer | MDC-1" PJ | 293-340 | 0-1.0"" +/- 00005 | 12 | 12/31/2020 |
| WC058850 | Despatch Oven Company | Oven | LAC1-67C-4 | 159253 | $50^{\circ} \mathrm{C}$ to $250^{\circ} \mathrm{C}+/-2^{\circ} \mathrm{C}$ | 12 | 08/31/2021 |
| WC058860 | Rotronic | HygroPalm 22 | HygroPalm 22 | 60222853 | Indication Only - Use with Calibrated Sensor/Probe | NCR | NCR |
| WC058866 | Rotronic | HygroClip2 Probe | HC2-S | 60264464 | 0 to $100^{\circ} \mathrm{C} \pm 0.1 \mathrm{C}, 0-$ $100 \%$ RH $\pm 0.8$ \%RH Cal PointsTemperature: $25^{\circ} \mathrm{C}$ and $50^{\circ} \mathrm{C}$ Humidity: $20 \%$ and $80 \%$ | 12 | 09/30/2021 |
| WC058879 | Mitutoyo | Digital Caliper, 6"" | CD-6"" CS | 0627090 | $\begin{gathered} 0-150 \mathrm{~mm} \text { (0-6 inch) } \\ +/-0.001 " " \end{gathered}$ | 12 | 12/31/2020 |
| WC059009 | Fisher | Desiccator | 22""Hx16""Wx21" ${ }^{\text {2 }}$ | N/A | Airtight (rubber seal) | NCR | NCR |
| WC059051 | SDL Atlas | Flame Tester | HVUL-Plastics | HVUL-1234 | Flame height mandel $10-125 \mathrm{~mm}$ Burner $20-150 \mathrm{~mm}$ flame Manometer 0200 mm | NCR | NCR |
| WC059117 | SDL Atlas | Flame UL 94 20 mm Calibration Tool | 18393000 | n/a | $\begin{gathered} 0-1.3,10,13.0 \pm 0.5 \\ 20,125.0 \pm 5.0 \mathrm{~mm} \end{gathered}$ | 60 | 03/02/2022 |
| WC059171 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC059172 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC059173 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC062722 | Teledyne Hastings Instruments | Flow Controller, Digital | HFC-D-302B | 592469001 | $0-1000$ <br> SCCM/Methane | 12 | 03/31/2021 |

Bar/Plate Flammability - 500W

| Asset Number | Manufacturer | Description | M/N | S/N | Range | Cal Interval (Months) | Cal Due |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| WC058822 | Mitutoyo | Digital Micrometer | MDC-1" PJ | 293-340 | 0-1.0"" +/- 00005 | 12 | 12/31/2020 |
| WC058850 | Despatch Oven Company | Oven | LAC1-67C-4 | 159253 | $50^{\circ} \mathrm{C}$ to $250^{\circ} \mathrm{C}+/-2^{\circ} \mathrm{C}$ | 12 | 08/31/2021 |
| WC058860 | Rotronic | HygroPalm 22 | HygroPalm 22 | 60222853 | Indication Only - Use with Calibrated Sensor/Probe | NCR | NCR |
| WC058866 | Rotronic | $\begin{aligned} & \text { HygroClip2 } \\ & \text { Probe } \end{aligned}$ | HC2-S | 60264464 | 0 to $100^{\circ} \mathrm{C} \pm 0.1 \mathrm{C}, 0-$ $100 \% \mathrm{RH} \pm 0.8$ \%RH Cal PointsTemperature: $25^{\circ} \mathrm{C}$ and $50^{\circ} \mathrm{C}$ Humidity: $20 \%$ and $80 \%$ | 12 | 09/30/2021 |
| WC058879 | Mitutoyo | Digital Caliper, 6"" | CD-6"" CS | 0627090 | $\begin{gathered} 0-150 \mathrm{~mm} \text { (0-6 inch) } \\ +/-0.001 " " \end{gathered}$ | 12 | 12/31/2020 |
| WC059009 | Fisher | Desiccator | 22""Hx16""Wx21""D | N/A | Airtight (rubber seal) | NCR | NCR |
| WC059051 | SDL Atlas | Flame Tester | HVUL-Plastics | HVUL-1234 | Flame height mandel $10-125 \mathrm{~mm}$ Burner 20-150mm flame Manometer 0200 mm | NCR | NCR |
| WC059117 | SDL Atlas | Flame UL 94 <br> 20 mm <br> Calibration Tool | 18393000 | n/a | $\begin{gathered} 0-1.3,10,13.0 \pm 0.5 \\ 20,125.0 \pm 5.0 \mathrm{~mm} \end{gathered}$ | 60 | 03/02/2022 |
| WC059171 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC059172 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC059173 | Crouzet | Digital Timer / Counter | CP2 | n/a | $\begin{gathered} 0-99,999,999 \\ \text { seconds } \end{gathered}$ | 12 | 12/31/2020 |
| WC062722 | Teledyne Hastings Instruments | Flow Controller, Digital | HFC-D-302B | 592469001 | $0-1000$ <br> SCCM/Methane | 12 | 03/31/2021 |

***END OF REPORT***

