

Date: 02-Jan-2023

To whomsoever it may concern

Subject: Statement/Justification with reference to the complete absorption/degradation/resorption of the product Surgi-ORC® (Oxidized Regenerated Cellulose Haemostat) at the implant site.

- We, Aegis Lifesciences Pvt. Ltd., located at 215/216, Mahagujarat Industrial Estate-382213, Ahmedabad, Gujarat, India, hereby declare that the Surgi-ORC® (Oxidized Regenerated Cellulose Haemostat) absorption/degradation/resorption is completed in “substantial absorption- 7-14 days” & “complete absorption- 28 days” with no any evident traces of the product at the implant site.
- In vitro degradation study for the ORC products were carried out and the weight loss and visual observation at selected time points (Initial, 7th day, 14th Day and 28th Day) was observed. It was noted that the ORC haemostat samples were degraded to a larger extent by day 7. At 14th day, only non-measurable/negligible residue/fibres of ORC haemostat were visible in the test tubes. At the end of the 28th day, all products were degraded to non-detectable forms with no visible traces or fibers in the test tube.

Enclosed –

- ❖ In-vitro Degradation Study Test Report (report No. – AL/IVD/ORC/01).

Signature



Mr. Vivek Kumar Shahi

Regulatory Affairs Assistant



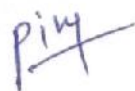
Aegis Lifesciences Pvt. Ltd.

Place: Ahmedabad, India



**TEST REPORT****REPORT NO –AL/IVD/ORC/01****DATE –July 25, 2017**

| | |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test | In-vitro Degradation Study(28 Days) |
| Product Name | Oxidized Regenerated Cellulose Haemostat |
| Test Facility | Aegis Lifesciences Pvt. Ltd., Ahmedabad |
| References | ASTM F1635 - 16 Standard Test Method for in vitro Degradation Testing of Hydrolytically Degradable Polymer Resins and Fabricated Forms for Surgical Implants |

| | | | |
|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Name | Jaydeep Ratani | Bhavin Trivedi | Piyush Patel |
| Signature |  |  |  |
| Date | 25/07/17 | 25/07/17 | 25/07/2017 |
| | Prepared By | Reviewed By | Approved By |



1. Purpose

The purpose of this study is to evaluate the time required for degradation of Oxidized Regenerated Cellulose (ORC) Haemostat under the influence of simulated environmental conditions.

2. Equipment, Materials and Samples

Equipment:

Thermometer (Equip. ID) : AL/QC/30

pH Meter (Equip. ID) : AL/QC/01

Weighing Balance (Equip. ID) : AL/QC/06

Oven (Equip. ID) : AL/QC/05

Incubator Shaker (Equip. ID) : AL/QC/17

Material:

Phosphate Buffer Saline (Soaking Solution) pH 7.4 ± 0.2

Glass Test Tubes

Samples:

| Surgi-ORC Variant | Batch No. | Sample Dimensions (cm) | Quantity |
|-------------------|------------|------------------------|----------|
| Original | ORC0517002 | 5 X 5 | 3 |
| Knit | ORC0517005 | 5 X 5 | 3 |
| Fibril | ORC0517009 | 5 X 5 | 3 |
| Non-Woven | ORC0517012 | 5 X 5 | 3 |

3. Procedure

- Weigh the dry samples prior to placement in PBS solution and note it as initial weight (W0) in test data sheet for each sample.
- Capture the photographs of samples.
- Place the individual samples in separate test tubes previously rinsed with PBS solution and label them.
- Transfer the freshly prepared PBS solution in cleaned test tubes and labeled them.
- Maintain the temperature of PBS solution at $37 \pm 2^\circ \text{C}$ by water bath.
- Transfer the individual samples in separate test tubes.
- Keep these test tubes in the incubator shaker and adjust the speed at 100 ± 10 rpm and temperature at $37 \pm 2^\circ \text{C}$.
- Monitor the pH of PBS solution on daily basis and change the PBS solution periodically at least after every week to maintain pH 7.4 ± 0.2 .
- Note start time as T0.
- Upon completion of specific time interval i.e. 0, 1, 7, 14 and 28 days, remove each sample and rinse with sufficient de-ionized water to remove saline.



- k. Dry the samples to constant weight in oven and note the weight as W_i in test data sheet.
- l. Capture the photographs of samples to evaluate the morphological changes occurs after each time interval.
- m. Calculate the % weight loss by the formula;
$$\% \text{ Weight Loss} = 100 \times (W_0 - W_t)/W_0$$

Where; W_0 = Initial weight of samples
 W_t = Weight after each time interval

4. Observations

Please refer Annex I for weight loss details and visual observations.

5. Conclusions

In vitro degradation study for the ORC products were carried out and the weight loss and visual observation at selected time points (Initial, 7th day, 14th Day and 28th Day) was observed. It was noted that the ORC haemostat samples were degraded to a larger extent by day 7.

At 14th day, only non-measurable/negligible residue/fibres of ORC haemostat were visible in the test tubes.

At the end of the 28th day, all products were degraded to non-detectable forms with no visible traces or fibres in the test tube.

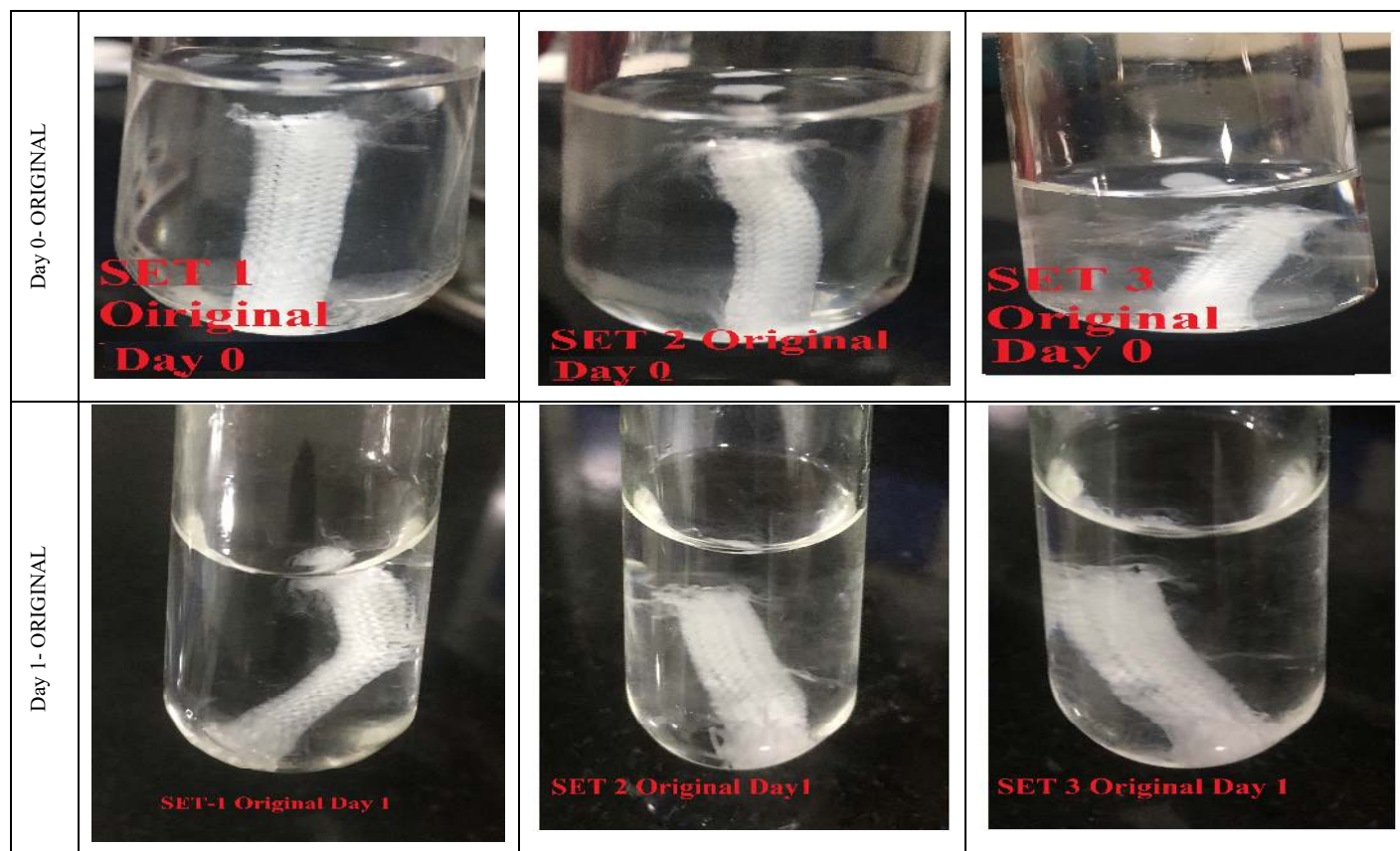


Annex I- Observations








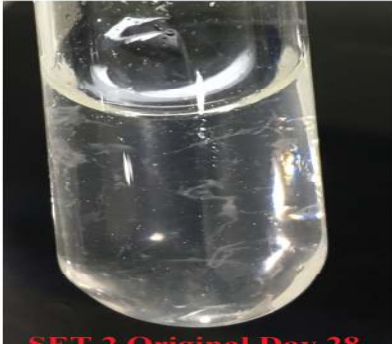
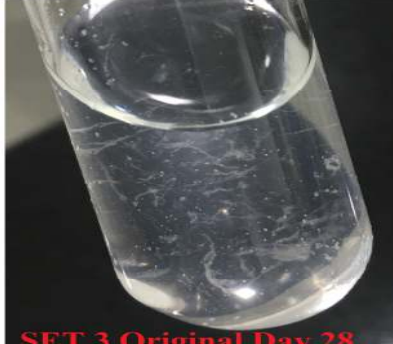
A. Weight Loss

| Sample ID | Sample Weights (mg) | | | | | Cumulative Weight Loss (%) | | | | | Avg. Wt. Loss in 28 Days (%) |
|-------------|---------------------|-----|----|-----|-----|----------------------------|-------|-------|-----|-----|------------------------------|
| | W0 | W1 | W7 | W14 | W28 | W0 | W1 | W7 | W14 | W28 | |
| ORIGINAL1 | 155 | 124 | 35 | - | - | 0 | 20.00 | 77.42 | 100 | - | 100 |
| ORIGINAL2 | 154 | 125 | 33 | - | - | 0 | 18.83 | 78.57 | 100 | - | |
| ORIGINAL3 | 155 | 121 | 36 | - | - | 0 | 21.94 | 76.77 | 100 | - | |
| KNIT 1 | 289 | 232 | 56 | - | - | 0 | 19.72 | 80.62 | 100 | - | 100 |
| KNIT 2 | 290 | 232 | 58 | - | - | 0 | 20.00 | 80.00 | 100 | - | |
| KNIT 3 | 292 | 235 | 61 | - | - | 0 | 19.52 | 79.11 | 100 | - | |
| FIBRIL 1 | 203 | 163 | 46 | - | - | 0 | 19.70 | 77.34 | 100 | - | 100 |
| FIBRIL 2 | 203 | 166 | 42 | - | - | 0 | 18.23 | 79.31 | 100 | - | |
| FIBRIL 3 | 205 | 162 | 47 | - | - | 0 | 20.98 | 77.07 | 100 | - | |
| NON-WOVEN 1 | 178 | 143 | 31 | - | - | 0 | 19.66 | 82.58 | 100 | - | 100 |
| NON-WOVEN 2 | 180 | 144 | 30 | - | - | 0 | 20.00 | 83.33 | 100 | - | |
| NON-WOVEN 3 | 180 | 141 | 31 | - | - | 0 | 21.67 | 82.78 | 100 | - | |







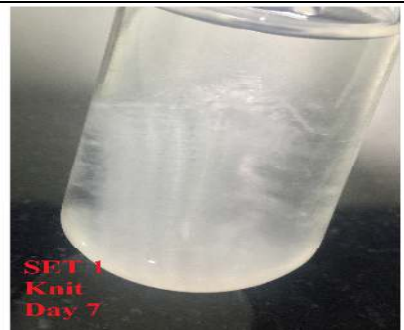
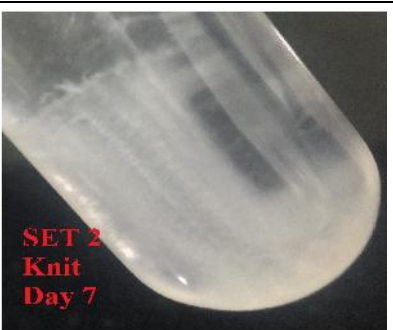

A. Visual Observations



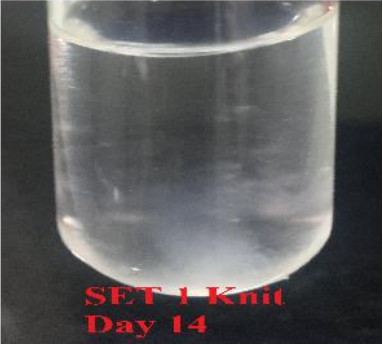
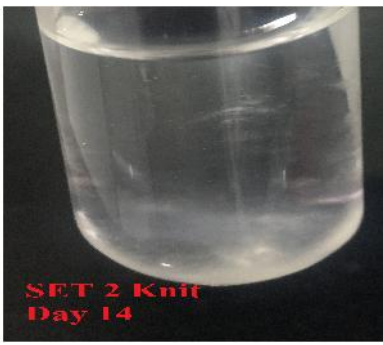
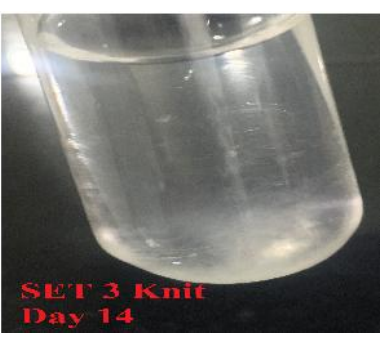

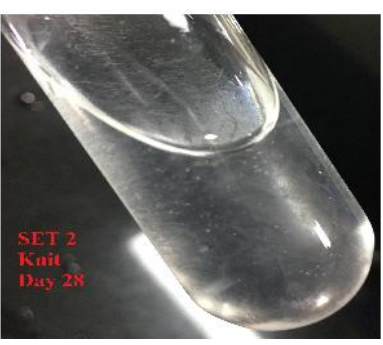



| | | | |
|------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Day 7- ORIGINAL |  <p>SET 1 Original Day 7</p> |  <p>SET 2 Original Day 7</p> |  <p>SET 3 Original Day 7</p> |
| Day 14- ORIGINAL |  <p>SET 1 Original Day 14</p> |  <p>SET 2 Original Day 14</p> |  <p>SET 3 Original Day 14</p> |
| Day 28- ORIGINAL |  <p>SET 1 Original Day 28</p> |  <p>SET 2 Original Day 28</p> |  <p>SET 3 Original Day 28</p> |

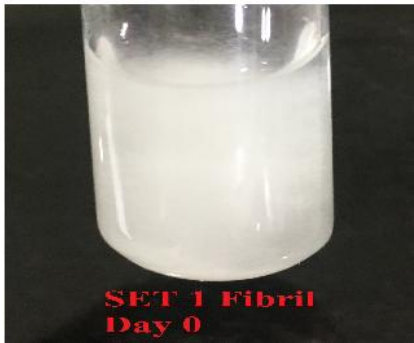

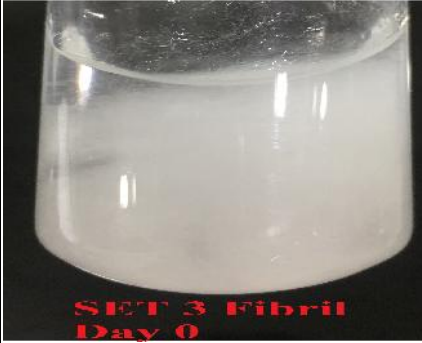




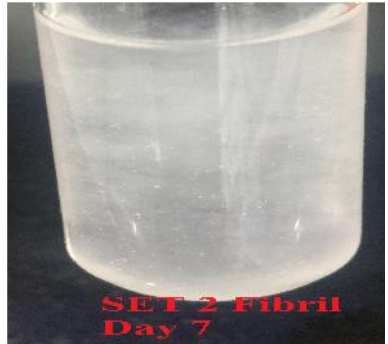



| | | | |
|-------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Day 0- KNIT |  <p>SET 1 Knit Day 0</p> |  <p>SET 2 Knit Day 0</p> |  <p>SET 3 Knit Day 0</p> |
| Day 1- KNIT |  <p>SET 1 Knit Day 1</p> |  <p>SET 2 Knit Day 1</p> |  <p>SET 3 Knit Day 1</p> |
| Day 7- KNIT |  <p>SET 1 Knit Day 7</p> |  <p>SET 2 Knit Day 7</p> |  <p>SET 3 Knit Day 7</p> |


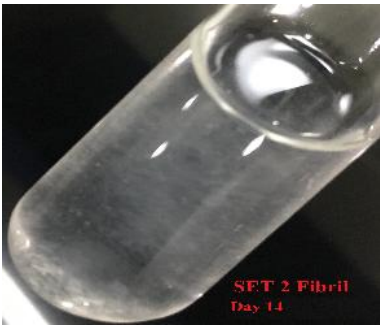
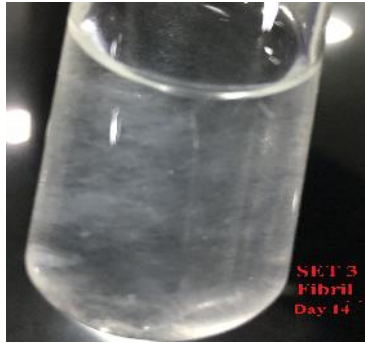


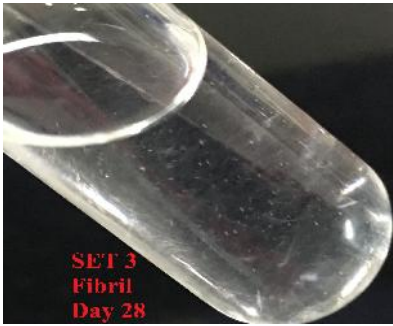


| | | | |
|--------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Day 14- KNIT |  <p>SET 1 Knit Day 14</p> |  <p>SET 2 Knit Day 14</p> |  <p>SET 3 Knit Day 14</p> |
| Day 28- KNIT |  <p>SET 1 Knit Day 28</p> |  <p>SET 2 Knit Day 28</p> |  <p>SET 3 Knit Day 28</p> |


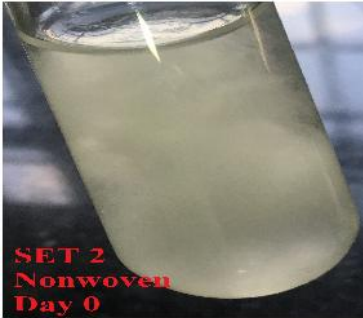

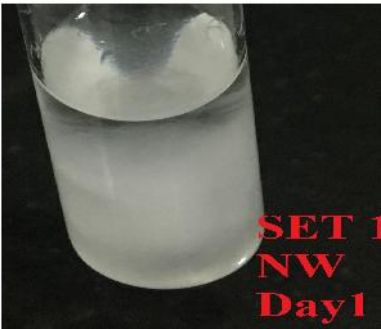
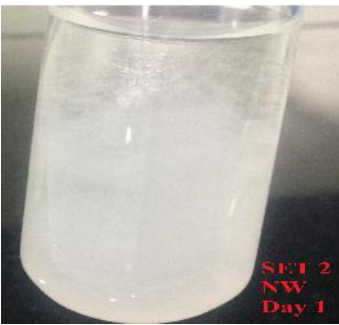
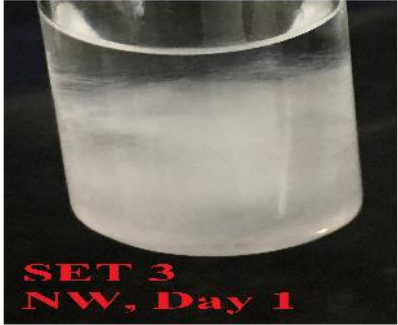
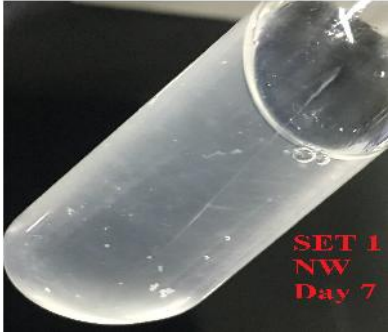
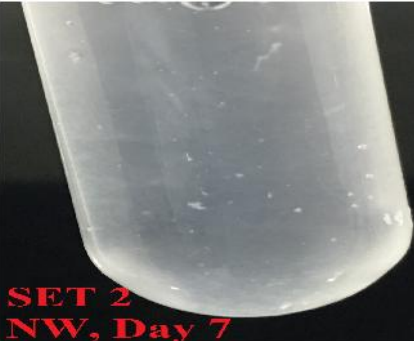



| | | | |
|---------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Day 0- FIBRIL |  <p>SET 1 Fibril Day 0</p> |  <p>SET 2 Fibril Day 0</p> |  <p>SET 3 Fibril Day 0</p> |
| Day 1- FIBRIL |  <p>SET 1 Fibril Day 1</p> |  <p>SET 2 Fibril Day 1</p> |  <p>SET 3 Fibril Day 1</p> |
| Day 7- FIBRIL |  <p>SET 1 Fibril Day 7</p> |  <p>SET 2 Fibril Day 7</p> |  <p>SET 3 Fibril Day 7</p> |

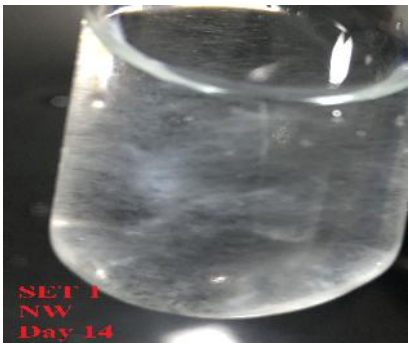
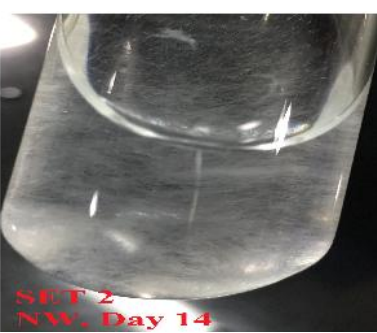

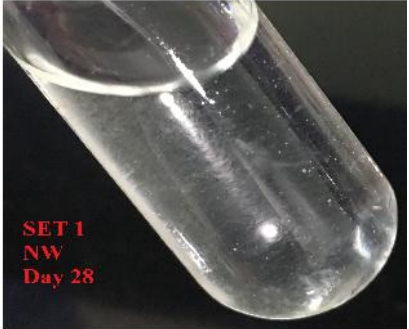

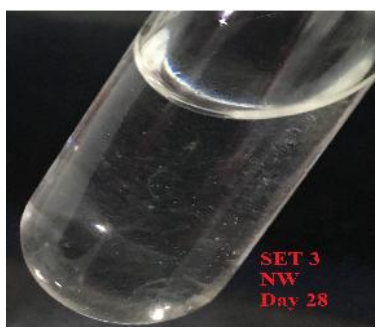


| | | | |
|----------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Day 14- FIBRIL |  <p>SET 1 Fibril Day 14</p> |  <p>SET 2 Fibril Day 14</p> |  <p>SET 3 Fibril Day 14</p> |
| Day 28- FIBRIL |  <p>SET 1 Fibril Day 28</p> |  <p>SET 2 Fibril Day 28</p> |  <p>SET 3 Fibril Day 28</p> |



| | | | |
|------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Day 0- NON-WOVEN |  <p>SET 1 Nonwoven Day 0</p> |  <p>SET 2 Nonwoven Day 0</p> |  <p>SET 3 Nonwoven Day 0</p> |
| Day 1- NON-WOVEN |  <p>SET 1 NW Day 1</p> |  <p>SET 2 NW Day 1</p> |  <p>SET 3 NW, Day 1</p> |
| Day 7- NON-WOVEN |  <p>SET 1 NW Day 7</p> |  <p>SET 2 NW, Day 7</p> |  <p>SET 3 NW Day 7</p> |



| | | | |
|--------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Day 14- NONW-WOVEN |  <p>SET 1 ZW Day 14</p> |  <p>SET 2 ZW, Day 14</p> |  <p>SET 3 NW Day 14</p> |
| Day 28- NON-WOVEN |  <p>SET 1 NW Day 28</p> |  <p>SET 2 NW Day 28</p> |  <p>SET 3 NW Day 28</p> |