

The Micronclean bucket-less mopping system was used from the 20th February 2006 until 1st March 2006. During this time a daily clean was performed each day and 1 weekly clean.

**Daily Clean**

1 mop used to clean the cleanroom and cleanroom changing room floor  
 1 mop used to clean the support room floor  
 1 mop used to clean the changing room to the support room floor  
 Total of 3 mops per day

**Weekly Clean**

All floors as above  
 Walls in the cleanroom and cleanroom changing room 1 mop  
 Support room walls 2 mops  
 Changing room to the support room 1 mop  
 Total of mops used for a weekly clean 7 mops per weekly clean.

**Areas cleaned and type of clean**

|                           | <b>Cleanroom</b> | <b>Cleanroom Changing</b> | <b>Support Room</b> | <b>Support Room Changing</b> |
|---------------------------|------------------|---------------------------|---------------------|------------------------------|
|                           | <b>Grade B</b>   | <b>Grade B</b>            | <b>Grade D</b>      | <b>Grade D</b>               |
| 20 <sup>th</sup> February | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |
| 21 <sup>st</sup> February | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |
| 22 <sup>nd</sup> February | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |
| 23 <sup>rd</sup> February | Weekly clean     | Weekly clean              | Weekly clean        | Weekly clean                 |
| 24 <sup>th</sup> February | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |
| 27 <sup>th</sup> February | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |
| 28 <sup>th</sup> February | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |
| 1 <sup>st</sup> March     | Daily clean      | Daily clean               | Daily clean         | Daily clean                  |

The cleaning solution was made up in a bucket and then poured into the plastic bag containing the mop head.

**Daily Clean**

Carrying out a daily clean Intrasan detergent was used in a dilution of 2ml in 250ml of Irrigated Water.

**Weekly Clean**

Carrying out a weekly clean Klercide Y disinfectant was used in a dilution of 5ml in 250ml of Irrigated Water.

The same type and strength dilution of cleaning fluids was used with the Micronclean mopping system as the current mopping system.

**Results of daily settle plates exposed for 4 hours during a production session**

|                           | <b>Cleanroom</b> | <b>Cleanroom Changing</b> | <b>Support Room</b> | <b>Support Room Changing</b> |
|---------------------------|------------------|---------------------------|---------------------|------------------------------|
| 20 <sup>th</sup> February | No growths       | No growths                | 1 CNS               | No growths                   |
| 21 <sup>st</sup> February | No growths       | No growths                | No growths          | No growths                   |
| 22 <sup>nd</sup> February | No growths       | No growths                | 5 CNS<br>1 MIC      | No growths                   |
| 23 <sup>rd</sup> February | No growths       | 2 CNS                     | 4 PSE               | No growths                   |
| 24 <sup>th</sup> February | No growths       | No growths                | No growths          | No growths                   |
| 27 <sup>th</sup> February | No growths       | No growths                | No growths          | No growths                   |
| 28 <sup>th</sup> February | No growths       | No growths                | 6 CNS               | No growths                   |
| 1 <sup>st</sup> March     | No growths       | No growths                | No growths          | No growths                   |

\* CNS = Coagulase Negative Staph (Skin Type Flora)

\* PSE = Pseudomonas Species (Contaminated Water)

\* MIC = Micrococcus (Pigmented Skin Type Growth)

All cleans took place at the end of a day. Extra contact plate samples were taken at the beginning of each day. 5 samples were taken on the cleanroom floor and 5 samples taken of the support room floor.

**Results of Extra Contact Samples**

|                           | <b>Clean Room 5 samples</b> | <b>Clean Room Changing 5 Samples</b> | <b>Support Room 5 Samples</b> | <b>Support Room Changing 5 Samples</b> |
|---------------------------|-----------------------------|--------------------------------------|-------------------------------|--|
| 20 <sup>th</sup> February | No growths                  | No growths                           | 5 CNS                         | No growths                             |
| 21 <sup>st</sup> February | No growths                  | No growths                           | 2 CNS                         | No growths                             |
| 22 <sup>nd</sup> February | No growths                  | No growths                           | No growths                    | No growths                             |
| 23 <sup>rd</sup> February | No growths                  | No growths                           | No growths                    | No growths                             |
| 24 <sup>th</sup> February | No growths                  | No growths                           | No growths                    | No growths                             |
| 27 <sup>th</sup> February | No growths                  | No growths                           | No growths                    | No growths                             |
| 28 <sup>th</sup> February | No growths                  | No growths                           | No growths                    | No growths                             |
| 1 <sup>st</sup> March     | No growths                  | No growths                           | 1 CNS                         | No growths                             |

\* CNS = Coagulase Negative Staph (Skin Type Flora)

## **Conclusion**

All extra samples were taken at the start of the day. In the cleanroom area they were carried out first thing before any production had taken place. In the support room area samples were taken about 30 minutes after the staff entered the support room, up to 3 staff may have already entered the support room area before samples were taken.

All settle and contact plates have action and warning levels set for the amount of Colony Forming Units (CFU) each plate is allowed for each grade of area before it is reported out of limit, with the exception to mould growths - any mould growths is considered out of limit. Grade B has a warning level of 3 CFU and an action level of 5 CFU. Grade D has a warning level of 50 CFU and an action level of 100 CFU. At no point during this study were any action or warning levels reached on contact or settle plates. All the daily settle plates were exposed for 4 hours, or results calculated accordingly.

Active air samples were carried out in each area on the 24<sup>th</sup> February 2006, after the morning production but before the evening clean, when the rooms were at rest. All results were clear from growths.

After the weekly clean a full set of contact plate samples were carried out in all areas cleaned by the mops. All results showed no CFU, all results were clear.

All staff found the mopping system easy to use.

The mops made it easier to clean underneath fridges within the support room, this meant they did not have to pull the fridges out to clean.

The mops glide across the floor well and seem to make the cleaning process quicker.

We also felt that by not taking so many bottles of water in to the support room this would reduce the risk of potential contamination being taken in (other mopping system uses 10 litre bottles of water for irrigation a day and 15 litres on a weekly clean)

This mopping system reduces Health & Safety issues of knocking over, and lifting buckets in the cleanroom.

The only problem encountered was each mop was meant to clean a surface area of 20 square metres. We found that by using 1 mop on the support room floor, the mop was a bit dry towards the end of the clean. As advised by Martin Rowe of Micronclean, we increased the volume of liquid added to the mop. We added 300ml of water for irrigation and adjusted the detergent accordingly to the mop. This solved the problem and we were able to mop the support room floor with 1 mop head.