

New Cleaning Agent Evaluation– Micro Nice (Bio 3 Mex)



Figure 1

Tray located after cooling zone contaminated with flux. Normal cleaning practice is scraping away the hardened flux without using any cleaning agent.



Figure 2

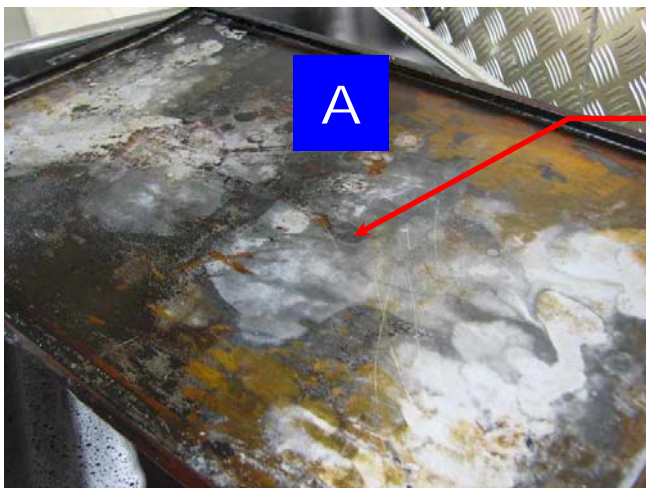
Control Settings

Ultrasonic Cleaner

- Temperature = 60 °C
- Timer = 10 minutes / cycle
- Micro Nice (Bio 3 Mex) with water ratio = 1 to 5

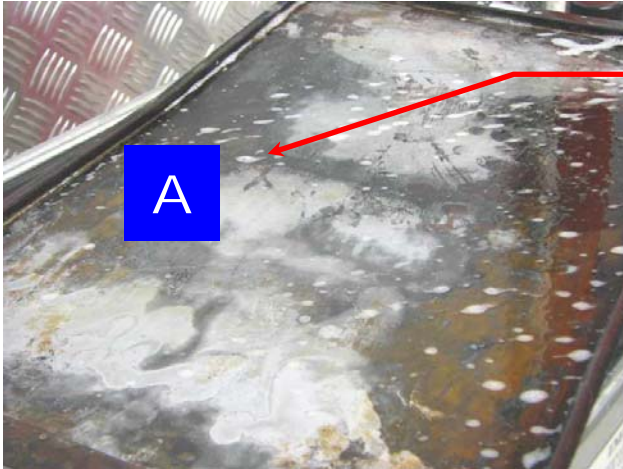
Note : Scraping method was not used to clean the hardened flux from the contaminated tray during testing

a] 10 minutes later (first cycle)



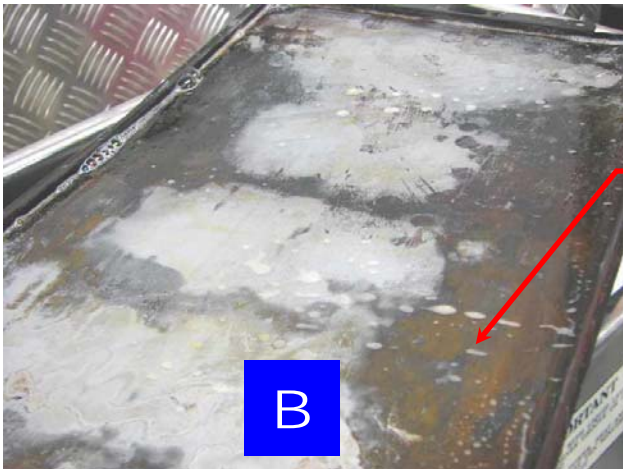
Note that the center portion of the tray (straight line) has been cleaned up nicely

b] 20 minutes later (second cycle)



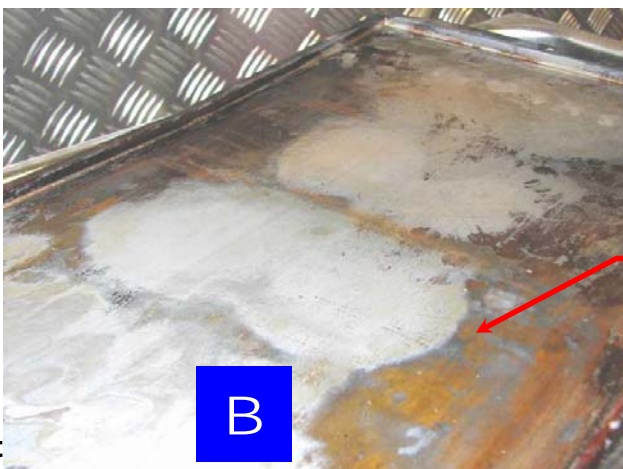
The yellowish color of flux stain (section A) has been greatly reduced

c] 30 minutes later (third cycles)



Yellowish color of flux stain (section B) is further reduced

d] 40 minutes later (fourth cycles)



Clarity of the water is achieved (section B)

Benefit

- Bio 3 Mex penetrates through the flux stain, reduces the surface tension, and helps to remove the hard core flux stain from the tray's surface effectively (more than 70% based on DOE). The scraping method is only capable of removing a small amount of the flux stain.
- Providing an extra set of trays to support during cleaning time using the ultrasonic cleaner is beneficial.
- Non flammable / non combustible
- Non CFC
- Non volatile
- Non irritant
- Biodegradable 85% after 9 days
- Anti-static
- Herbal odor
- Safe, environment friendly and meets ISO 14000 requirements
- Water based with pH 4.0 0 – 5.00
- Better housekeeping by frequently cleaning and changing
- Recyclable (< 2 times) and cost saving.

Cost Comparison :

No	Product Name	Price (litre)	Ratio	Remarks
1	Resist Stripper	RM 13	N/A	Currently still using to clean oven reflow
2	Micro Nice – Bio 3 Mex	RM 6.90 RM 8.63 RM 11.50	1 : 5 1 : 4 1 : 3	<i>New propose cleaning agent</i> • <i>Flexibility</i> <i>- Existing cleaning agent for TCM part as well</i>

Conclusion :

Naturally we can determine that the Bio 3 Mex is responding well to the lead-free flux stain Even on the hard core stains, Bio 3 Mex is capable of removing about 70% of the flux stain from the tray. Currently we are performing tests without using a scraper within a 40 minutes period. Moreover, Bio 3 Mex is more environmentally friendly and harmless for the end user during cleaning time. The herbal odor is acceptable (without wearing face mask) which was personally verified by myself, and I am satisfied with the cleaning results.

Oven Reflow Cleaning Evaluation

Control Settings :

- Mixed with hot water
- Micro Nice (Bio 3 Mex) with water ratio = 1 to 2



Line 2 oven reflow, photo shows the white bracket has been contaminated with dry and hardened flux for a long period of time.



Right after the chemical being sprayed, the yellowish surface (flux) immediately turned into a clean white paint color. The chemical reacted quickly and softened the harden flux (without mechanical action)



Comparison of the same bracket
-Half of the bracket cleaned with Bio 3 Mex
-The other half has not been cleaned