



TESTING REPORT

Applicant: WALRAVEN PTE LTD
Report ID: R20240719504
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DATA CLEAN ASIA PTE LTD

TESTING REPORT

Sample Information and Testing Requirement

| | |
|--------------------|---|
| Applicant | WALRAVEN PTE LTD |
| Consignor | Eldrich Low |
| Sample Information | BUP sample 2018 41X41 2.5 BUP |
| Test Item | SEM imaging and EDX elemental analysis for examination of dust samples for the presence of zinc whiskers. |
| Testing Results | Please refer to next page(s) |

Note: (1) The testing report is valid only for the sample(s) submitted to DCA. If there is any objection concerning the testing report, it is required that the objection should be put forth to DCA within 1 week from the reception date of the report. (2) The sample information is supplied by the Client (or any of its agents or representatives) to DCA. DCA doesn't warrant and won't have any liability or responsibility to determine that the information is true, accurate, representative, complete and not misleading in any respect.

TESTING REPORT

1. Subject

Examination of dust samples for the presence of zinc whiskers.

2. Instrument and testing procedure

(1) Scanning Electron Microscope (SEM)

The SEM imaging analysis was conducted on a ZEISS Sigma 300 Field Emission Scanning Electronic Microscopy with acceleration voltage of 5kV and vacuum environment of $< 5 \times 10^{-5}$ Pa. The received samples were sputtered with an ultrathin layer of platinum coatings before SEM analysis to enhance the image resolution. Photographs of typical deposits and fibers were taken for each sample.

(2) Energy Dispersive X- Ray Spectroscopy (EDX)

To conduct EDX elemental analysis, the acceleration voltage was set to 10kV and the working distance to 14mm. The x-ray detector was moved down to 45mm and the live time was set for 200 seconds. The dead time (DT) on the bottom of spectrum window was adjusted to fall in between 25 to 30% by changing the spot size. Typical EDX elemental analysis spectrum was taken for each sample.

3. Findings

The findings are centralized in the table below:

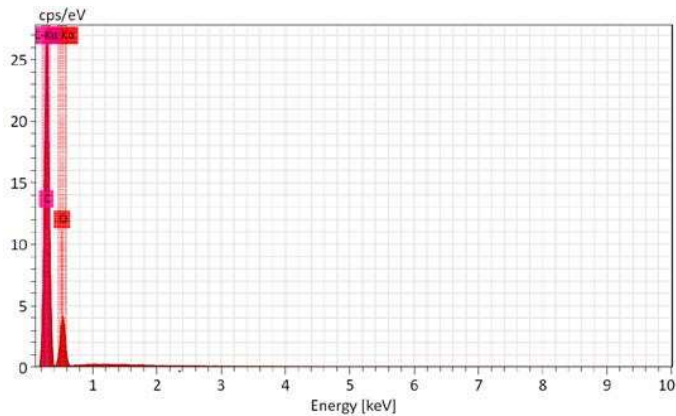
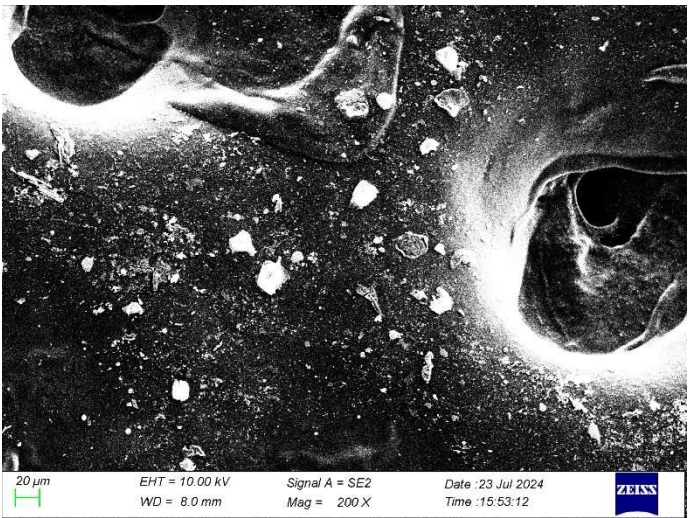
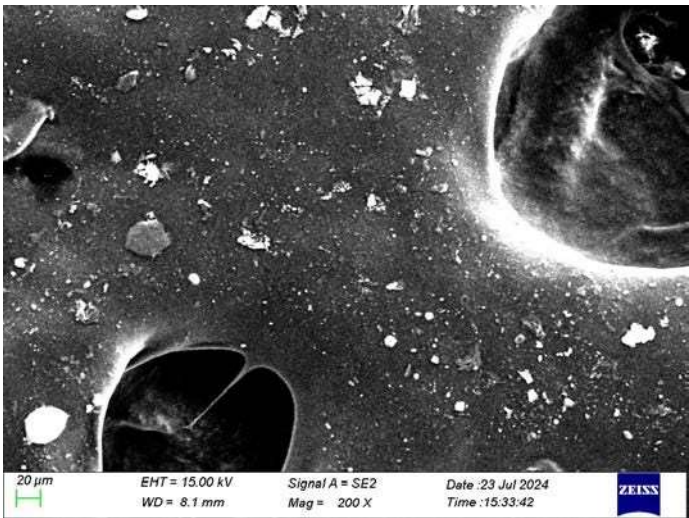
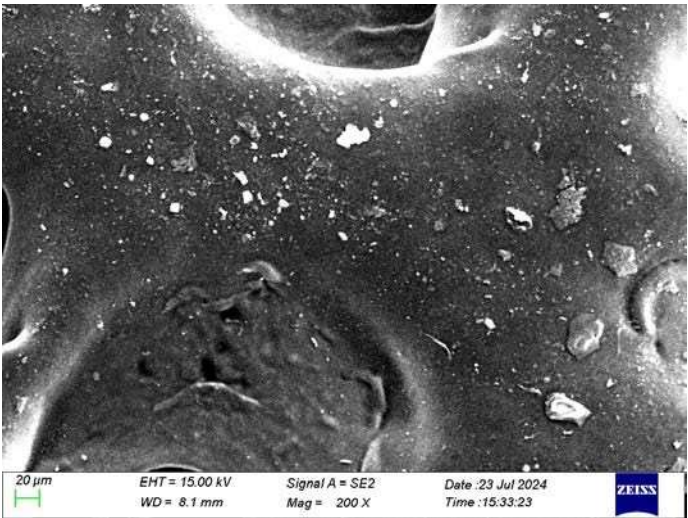
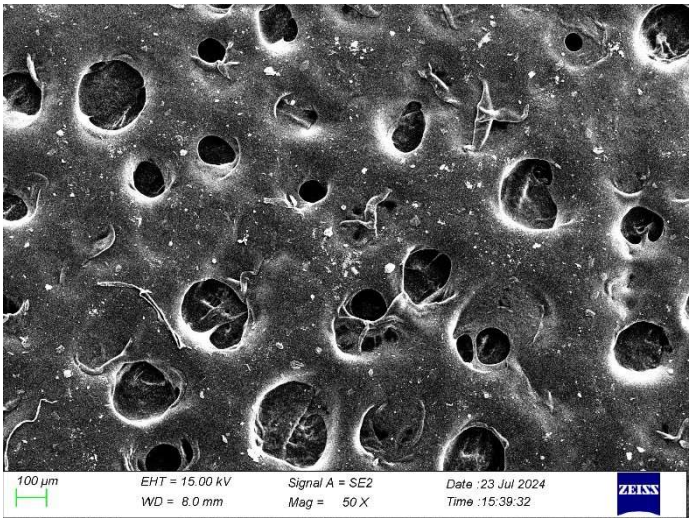
| Sample No. | Client Identification | Zinc Whiskers Present | Figure |
|------------|-------------------------------|-----------------------|----------|
| 1 | BUP sample 2018 41X41 2.5 BUP | No | Figure 1 |

4. Conclusions

Evidences of zinc whiskers were found in 0 out of 1 sample submitted for examination.

5. Testing results

(Figure 1) SEM imaging and EDX elemental analysis for BUP sample 2018 41X41 2.5 BUP



***** END OF REPORT *****

Tested by:

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Aaron Yang
Technical Manager

