



BILL LEE
Governor

TENNESSEE BUREAU OF INVESTIGATION

901 R.S. Gass Boulevard
Nashville, Tennessee 37216-2639
(615) 744-4000
Facsimile (615) 744-4500
TDD (615) 744-4001



DAVID B. RAUSCH
Director

MEMORANDUM

TO: Chad Johnson, Quality Assurance Manager
Brett Trotter, Forensic Chemistry Technical Leader

FROM: Michael Bleakley, SA – Forensic Scientist Supervisor *MDB*

DATE: April 17, 2023

SUBJECT: Risk Assessment for the use of a benchtop ductless hood

On March 10, 2023, Gabe Hendy of Safety Plus, LLC, certified the benchtop hood, model DWS-24-A, serial number DWS000016, manufactured by AirScience. This hood will be used for active general Forensic Chemistry testing in the laboratory at a makeshift benchtop workstation due to overcrowding of the laboratory.

He tested airflow via anemometer and smoke tests and approved it for use in general casework not containing contagious biological hazards. The speed of the fan can be modified by a dial; he marked with a sharpie the setting he tested.

Main filters will be changed annually and can be disposed via incinerator. If heavy, sustained usage occurs (entire work weeks for months straight), then the main filters should be changed semi-annually. This hood should be kept running whenever in active use, and can be used for short-term, active storage of working chemicals and extractions in progress. Overnight storage of chemicals is not recommended, even while running the hood continuously. If bulk powders are introduced into the prefilters, then the prefilters should be changed more frequently than the manufacturer's recommendations.

Movement of the hood is allowed so long as the ambient airflow is considered. Direct airflow from the climate controls will alter the airflow pattern into the filters and can cause infiltration of solvents into the surrounding airspace.

Monitoring of the hood operation is not a passive test; the only viable option is to test the airflow with a Kimwipe dropped into the hood's working area to view movement. Additionally, there is a warning light that indicates any filter blockages or issues with the fan. The fan is also loud, so any interruption in operation caused by malfunction or power loss would be instantly obvious to the user. My recommendation is to use the warning lights and noise of the fan as the main test for routine operation, and use the Kimwipe test as a quarterly check for proper suction or whenever the operator has reason to question the hood (different sound or prolonged inactivity).

Attachment: Certification Report from Safety Plus, dated March 10, 2023, by Gabe Hendy



INTERNATIONALLY ACCREDITED SINCE 1994

CERTIFICATION REPORT

March 10, 2023

GH031023-1

Performance Testing

prepared for

Knoxville Crime Lab
As Installed/Used Conditions

Tennessee Bureau of Investigation

1791 Neals Commerce Lane
Knoxville, TN 37914

prepared by



PO Box 2549

Chattanooga, TN 37409

Phone: (423) 822-0487 · Fax: (423) 822-0547



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Customer: Tennessee Bureau of Investigation
Location: Knoxville TN
Date: March 10, 2023 Test #: GH031023-1 1
Department: Knoxville Crime Lab
Unit #: DWS000016 Model: DWS-24A
Unit Manufacturer: Air Science
Unit Type: Ductless Hood - Carbon Filter

Separative Enclosure Field Test

Airflow Velocity Tests

			PASS	FAIL	N/A
Velocity Test:	(Limits: <u>72-88 **</u>)	<u>85</u> fpm	☒	☐	☐
Work Area:		<u>3.79</u> ft ²			
Airflow Volume:		<u>322</u> cfm			
Smoke Patterns Test:					
Downflow	☒	Edge Retention ☒	☒	☐	☐
Pressure Gauge:	S/N <u>---</u>	<u>---</u> in. wg.	☐	☐	☒

Filter Leak Tests

Carbon	<u>24 x 24 x 6</u> in.	Qty: <u>1</u>	<u><0.01</u> %	New ☐	Full ☐	☒	☐	☐
Prefilter	<u>19 x 24 x 1</u> in.	Qty: <u>1</u>	Clean ☐	Fair ☐	Loaded ☐	☒	☐	☐

Worker Comfort Tests

Noise Level: (Ambient / Normal)	<u>--</u> / <u>--</u> dBA	☐	☐	☒
Lighting Level: (On / Off)	<u>--</u> / <u>--</u> ft. cd.	☐	☐	☒
Vibration: Background <u>--</u> Total <u>--</u> Actual <u>--</u> rms		☐	☐	☒
View Panel Condition: Cracked ☐ Crazed ☐ Broken ☐		☒	☐	☐

**** Manufacturer recommends a downflow of 80fpm +/- 10%****

Certification Summary:

Unit Certification:	Pass ☒	Fail ☐
Work Completed By:	<u>Gabe Hendy</u>	
Work Accepted By:	<u>Michael Bleakley</u>	
Next Certification Due:	<u>March 2024</u>	
Standard Referenced:	ISO 14001:2015	☒
	TEST RP-CC-034	☐ -002.2
	Manufacturer's Criteria	☒

MFG Date 28NOV2022