

# CageRack Containment Report

1. **M.I.C.E.<sup>®</sup> CageRack Validation for ABSL-3**
2. **OptiMICE<sup>®</sup> CageRack Validation for ABSL-3**
3. **Tracer Gas Containment Report** (Modified ASHRAE 110-1995)
4. **Conclusions**

Prepared on June 15, 2007 by Germain Rivard, DVM, PhD  
MouseCare Inc.,  
Ithaca, NY

**MouseCare**



# 1. M.I.C.E.<sup>®</sup> CageRack Validation for ABSL-3

Germain Rivard, DVM, PhD, MouseCare, Ithaca, NY

May 2007 at BioLink, 4641 Crossroads Park Drive, Liverpool, NY

- Cage & Rack Integrity
  - M.I.C.E. Cage Static and under Normal Operating Conditions
    - Smoke Containment Assessment



# 1. M.I.C.E.<sup>®</sup> CageRack Validation for ABSL-3

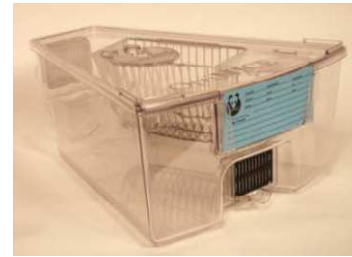
- **M.I.C.E. Cage Integrity Test**
  - Static Smoke Test
    - No visible smoke leakage was detected around the perimeter of the static cage
- **M.I.C.E. Rack Integrity Test**
  - Exhaust Duct Systems
    - No visible smoke leakage was detected around the perimeter of the ventilated rack and associated vent hoses
- **M.I.C.E. Cage under Normal Operating Conditions**
  - Smoke Containment Assessment
    - No visible smoke leakage was detected around the perimeter of the ventilated cages on rack
    - No background leakage was detected in the general area of the test positions

## 2. OptiMICE® CageRack Validation for ABSL-3

Germain Rivard, DVM, PhD, MouseCare, Ithaca, NY

May 2007 at BioLink, 4641 Crossroads Park Drive, Liverpool, NY

- OM Cage Integrity
- OM Rack Integrity



## 2. OptiMICE® CageRack Validation for ABSL-3

Tests were conducted by an Independent Service Contractor  
at BioLink, 4641 Crossroads Park Drive, Liverpool, NY

- **Cage Integrity Test**
  - Static Smoke Test
  - Vented Exhaust Smoke Test
- **Rack Integrity Test**
  - Exhaust Duct Systems

## 3. Tracer Gas Containment Report (Modified ASHRAE 110-1995)

- **Cage under Normal Operating Conditions**
  - SF6 Containment Assessment

## 2. OptiMICE® CageRack Validation for ABSL-3

- **Cage Integrity Test**

- **Static Smoke Test**

- Pressurize with smoke all exterior surfaces from within to assure no leakage of smoke to the outside.
    - Acceptance: Hold pressure for 10 minutes. No visible smoke outside the cage.



## 2. OptiMICE® CageRack Validation for ABSL-3

- **Cage Integrity Test**

- Static Smoke Test

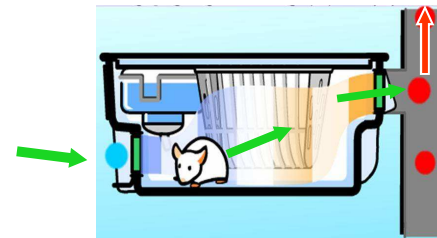
- Pressurize with smoke all exterior surfaces from within to assure no leakage of smoke to the outside.
    - Acceptance: Hold pressure for 10 minutes. No visible smoke outside the cage.

- Vented Exhaust Smoke Test (Acceptance & Performance)

- Airflow within the cage is toward the exhaust and no dead spots for refluxing
    - Ventilation efficiencies in minutes required for a removal efficiency of 99% smoke

**EVC** (HVAC-assist, Single-Pass Airflow by Exhaust Ventilation)

15 ACH  
4 min. for 99% smoke removal efficiency



- 0.02 m/s

## 2. OptiMICE® CageRack Validation for ABSL-3

- Cage Integrity Test
- **Rack Integrity Test**
  - Exhaust Duct Systems
    - By Photometer for Leaks and Imperfect Junctions: No Leak was detected
    - By Smoke for Directional Airflow: Single-Pass Exhaust Airflow and No visible smoke leakage
- **Cage under Normal Operating Conditions**
  - SF6 Containment Assessment



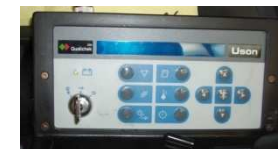


## 2. OptiMICE® CageRack Validation for ABSL-3

- **OptiMICE Cage Integrity Test**
  - Static Smoke Test
    - No visible smoke leakage was detected around the perimeter of the static cage
  - Vented Exhaust Smoke Test
    - No visible smoke leakage was detected around the perimeter of the ventilated cages on rack
- **OptiMICE Rack Integrity Test**
  - Exhaust Duct Systems
    - Using the photometer, no leak was detected
    - No visible smoke leakage was detected around the perimeter of the ventilated rack and associated vent hoses

# 3. Tracer Gas Containment Report (Modified ASHRAE 110-1995)

- Cage Integrity Test
- Rack Integrity Test
  - Exhaust Duct Systems
- **Cage under Normal Operating Conditions**
  - SF6 Containment Assessment: No Leakage Detected



## 3. Tracer Gas Containment Report (Modified ASHRAE 110-1995)

- **OptiMICE Cage** (under Normal Operating Conditions)
  - SF6 Containment Assessment
    - No leakage was detected around the perimeter of the test cages on rack
    - No background leakage was detected in the general area of the test positions



# CONCLUSIONS

## Acceptance of Both

- M.I.C.E.<sup>®</sup> Caging System

(Manufactured by Animal Care Systems, Centennial, CO)

- OptiMICE<sup>®</sup> Caging System

(Manufactured by Animal Care Systems, Centennial, CO)

for Containment and/or ABSL-3 Applications

