

**Animal Care Systems, Inc.
M.I.C.E.® Caging System:
An Innovative Concept In Rodent Caging**



- ▶ Odor and Allergen Free
- ▶ **Low Stress Environment**
- ▶ Fail Safe
- ▶ **HVAC-Driven and Motor Free**
- ▶ Silent Operation
- ▶ **Vibration Free**
- ▶ Easy Maintenance
- ▶ **Enhanced Quality of Life**



Microenvironmental Comfort
Isolation
Containment
Enrichment

Patented design featuring one-pass airflow for superior air quality and stable conditions



Helping you achieve responsible animal care

ANIMAL CARE SYSTEMS inc.

Source Control of Contaminants

- ▶ Closed-System Design
- ▶ Isolation and Containment
- = Occupational Allergy Protection

Exhaust Ventilation

- ▶ HVAC-Assist
- ▶ Direct Venting
- ▶ Stable Micro Environment
- = Fail Safe Convection

Low Stress Environment

- ▶ Improved Air Quality
- ▶ One-Pass Airflow
- ▶ Integrated Enrichment Features
- = Elimination of Variables

Ergonomic Considerations

- ▶ Two Part Cage
- ▶ External Access to Food and Water
- ▶ Push-On Water Bottle Cap
- ▶ Streamlined Operation
- = Superior Ergonomics

Economical

- ▶ High Population Density
- ▶ Maintenance and Calibration Free
- ▶ Low HVAC Requirements
- ▶ Requires No Electricity
- = Best Overall Value

Modular Design

- ▶ Maximized Room Space
- ▶ Light Weight and Mobile
- ▶ Configurable Rack Sizes
- ▶ One Rack Multi Species Housing
- = Maximized Rack Density



**Animal Care Systems, Inc.,
Helping You Achieve Responsible Animal Care**

Animal Care Systems, Inc. (ACS) manufactures a state-of-the-art vented caging system that has eliminated electrically powered blower motors. The system functions by HVAC-assisted exhaust venting under negative pressure relative to your animal room. It is the only closed-system isolation container for rodents that provides a true barrier at cage level with good air quality and a total volume air change within the cage.

Because Animal Care Systems, Inc. strives to meet the needs of both animals and their caregivers, we make the vented M.I.C.E.® Caging System with one primary goal:

Quality of Life

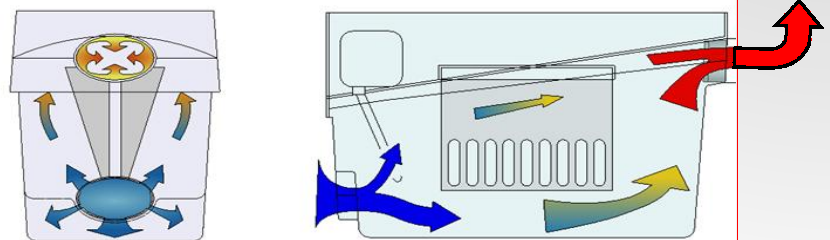
Innovative Design Improves Room and Controls Air Quality

An animal care and use program involves many scientific disciplines. The goal is to improve and control air quality for animals, personnel and the environment. A good strategy is to eliminate airborne contaminants including allergens, waste gases and thermal loads at the source.

The M.I.C.E.® System achieves this goal. Our vented caging system efficiently supplies clean air and eliminates contaminants at the source. Instead of mixing and diluting air, the exhaust ventilated system directs and filters room air through cages and racks directly to the building's exhaust in a one-pass air-flow. The system provides good air quality and bio-safety to animals and personnel.

Due to its flexible, modular design, the M.I.C.E.® System stands out as the ideal choice for animal facilities. From new construction to retrofits and from entire buildings to counter-top isolated containment spaces, quality of air and life is improved and costs are significantly reduced.

One-Pass Airflow



Microbiological Challenge of the M.I.C.E.® System

Several institutions have microbiologically challenged the M.I.C.E.® System, including Charles River Laboratories and University of Colorado Health Science Center. They proved the integrity of our closed-system design, which provides a barrier at cage level.

In the Charles River study, four generations of pups as well as all adults were necropsied, including a complete serology, bacteriology, and parasitology panel. After a four month period the colonies remained pathogen free.



Helping you achieve responsible animal care

ANIMAL CARE SYSTEMS Inc.

DESCRIPTION OF THE M.I.C.E.® CAGING SYSTEM

The M.I.C.E.® Caging System is unique in the field of protected environmental rodent housing. It uses a one-pass, low velocity airflow and sound thermodynamic principles to maintain a comfortable, low-stress animal environment.

This innovative system eliminates electrically powered blowers, and instead combines HVAC-assisted direct exhaust venting with natural convective airflow to create an ideal microenvironment for rodents.

The modular, closed-system, barrier isolation caging system provides maximum flexibility while increasing population density and improving the welfare of both animals and their caretakers.

Microenvironmental Comfort
Isolation
Containment
Enrichment



Cages are available in Bayer Makrolon® Polycarbonate and BP Amoco Udel® Polysulfone

Cross-Contamination Challenge of M.I.C.E. Cages Using MHV-A59 Inoculated Mice

Dianna M. Blau, PhD, University of Colorado Health Sciences Center, Denver, CO

Release of Virus From Cages

+/-	+/+	0/0	+/-
NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL
0/0	S/S	-/-	+/-
NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL
+/-	0/0	0/0	-/-
NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL
S/S	-/-	0/0	0/0
NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL
+/+	0/0	+/+	0/0
NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL
S/S	SB	S/S	SB
NEUTRAL	NEUTRAL	NEUTRAL	NEUTRAL

0/0: Control no filter
S/S: Control with filter
SB: Blank box

+/-, +/+, -/- genotype of mice with respect to receptor.
+/- and -/- represent cages where virus would be shed.

Microbiological Validation of the M.I.C.E.® System

OF1 (CWR)

Nude SV595 00 system

Paratuberculosis serotypes

Staphylococcus aureus

Escherichia parvularis

Proteus mirabilis

MHV-A59 W5V 3-19-93

M.I.C.E. cages (N1 to 2) 2 SOPF mice per cage

Open cages (N6 to 10) 2 Challenged mice per cage

M.I.C.E. cages (N11 to 15) 2 SOPF mice per cage

Chart of Positive Results Over the Different Tests

T = 105 days

Cap #	Cap Type	Sept.	Prost.	Edu.	Intest.	MHV
1	SOPF-ITD	-	-	-	-	-
2	SOPF-HP	-	-	-	-	-
3	SOPF-ITD	-	-	-	-	-
4	SOPF-HP	-	-	-	-	-
5	SOPF-ITD	-	-	-	-	-
6	CHALLENGE	-	-	**	****	****
7	CHALLENGE	-	-	***	***	***
8	CHALLENGE	*	**	***	***	***

CHARLES RIVER LABORATORIES
Contributing to the Search for Healthier Lives

Pore Size (µm)	Challenge Organism
0.1	Acholeplasma laidlawii
0.2	Bevundimonas diminuta
0.3	Mouse Hepatitis Virus
0.45	Serratia marcescens
0.8	Lactobacillus sp.
1	Candida albicans Proteus mirabilis Pseudomonas aeruginosas Klebsiella pneumoniae
1.5	Staphylococcus aureus

Absolute Filter: 100% Collection Efficiency at 0.3µ

At low-pressure and low velocity, it is as efficient as HEPA Filtration.

Closed-System Caging Exhaust Ventilated Rack

PROTECT

- ▶ ANIMALS
- ▶ PERSONNEL
- ▶ ENVIRONMENT

IMPROVE

- ▶ BREEDING PERFORMANCES
- ▶ ANIMAL WELFARE
- ▶ DATA QUALITY
- ▶ STANDARDIZATION

MAXIMIZE

- ▶ CARE
- ▶ PRODUCTIVITY
- ▶ SPACE

SAVE

- ▶ TIME
- ▶ ENERGY
- ▶ MONEY

**Animal Care Systems, Inc.
M.I.C.E.® Caging System
Technical Specifications**

Single-Sided Rack Dimensions

Rack Assembly #	Rack Description	Number of Cages Per Rack	Population Capacity (Based on six Mice Per Cage)	Length in Inches (mm)	Width in inches (mm)	Height in inches (mm)
M85010S1 P85010S1	Single Module, Single-Sided	14 Cage	84 Mice	16.25 (413)	23.25 (591)	75.5 (1918)
M85010S2 P85010S2	Two Module, Single-Sided	28 Cage	168 Mice	32.5 (826)	23.25 (591)	75.5 (1918)
M85010S3 P85010S3	Three Module, Single-Sided	42 Cage	252 Mice	48.75 (1238)	23.25 (591)	75.5 (1918)
M85010S4 P85010S4	Four Module, Single-Sided	56 Cage	336 Mice	65.0 (1651)	23.25 (591)	75.5 (1918)
M85010S5 P85010S5	Five Module, Single-Sided	70 Cage	420 Mice	81.25 (2064)	23.25 (591)	75.5 (1918)

Double-Sided Rack Dimensions

Rack Assembly #	Rack Description	Number of Cages Per Rack	Population Capacity (Based on six Mice Per Cage)	Length in inches (mm)	Width in inches (mm)	Height in inches (mm)
M85015D2 P85015D2	Two Module, Double-Sided	28 Cage	168 Mice	16.25 (413)	36.5 (927)	75.5 (1918)
M85015D4 P85015D4	Four Module, Double-Sided	56 Cage	336 Mice	32.5 (826)	36.5 (927)	75.5 (1918)
M85015D6 P85015D6	Six Module, Double-Sided	84 Cage	504 Mice	48.75 (1238)	36.5 (927)	77.5 (1969)
M85015D8 P85015D8	Eight Module, Double-Sided	112 Cage	672 Mice	65.0 (1651)	36.5 (927)	77.5 (1969)
M85015D10 P85015D10	Ten Module, Double-Sided	140 Cage	840 Mice	81.25 (2064)	36.5 (927)	77.5 (1969)

Rack Assembly Numbers Preceded By "M" are Polycarbonate. Rack Assembly Numbers Preceded By "P" are Polysulfone.



For more information about the unique M.I.C.E.® Caging System, contact Animal Care System, Inc. or your local ACS Distributor.

Please visit us on the Web at www.AnimalCareSystems.com

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