

ISO-POD CBSP System

Protects Responders and Personnel from Chemical and Biological Threats

The ISO-POD CBSP System was designed to protect and reduce the risk to first responders and medical personnel from contaminated patients for both chemical and biological threats. The system features a host of improvements over traditional Isolation Pods that enable the responders and medical personnel to treat the patient while reducing risk of exposure to chemical and biological contaminants. Workers are protected by having contaminated air purified by filtration media mounted on an ISO-POD CBSP. Filtered air is pulled through the ISO-POD unit by the negative pressure generated by the ISO-POD blower. The ambient air is pulled thru the HEPA filter and into the POD, and contaminated air under negative pressure on the inside of the POD is pulled thru the pair of CBRN filters on the air outlet.

Benefits:

- Reduces risk of respiratory illness of those working around contaminated persons
- Longer work time on a single battery charge; blower can continuously operate while plugged in as well for longer work durations
- Independent low-flow and low battery alarms permit safe and timely notice of change out
- Hot swap filter capability utilizing a filter selector valve, change one filter while air is still being filtered thru the other and negative pressure maintained for safer filter swapping operations

Features:

The ISO-POD CBSP Isolation Pod features the latest innovations in mobile patient isolation:

- Microprocessor controlled blower technology for consistent, reliable blower performance
- Filter port selector allowing for safe swapping of one filter while still filtering air thru the other
- Advanced, chemical, biological, radiological and nuclear protective filters to mitigate hazards and protect first responders
- Built in backboard slot to add stability to the Pod and to enhance patient transport capability.
- Ambulance exhaust capability to take outgoing gas to ambulance exhaust system.
- Nominally 16 air exchanges per hour, exceeding the CDC guideline of >12 air exchanges per hour
- Provides nominally 0.07 or greater inches H₂O vacuum inside ISO-POD exceeding CDC minimum guidelines of >0.01 inches H₂O.
- Independent low-flow and low battery alarms on the ISO-POD blower unit.



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Features Continued:

The ISO-POD CBSP Isolation Pod features the latest innovations in mobile patient isolation:

- Ruggedized carry handle system
- Lengthened glove port option for increased reach capability while working with patients and enlarged glove port diameter.
- Full length window option for increased patient comfort and user visibility.
- Rigid support plate system to better maintain ISO-POD CBSP shape and transportability.
- In POD patient restraint strapping system and external gurney strapping system.
- Optional adapter system available to mate with hospital and ambulance suction systems for exhausting purposes.

Technical Specifications:

Air Changes per Hour	16 nominally
Lithium-Ion On-board/Duration	7—8 Hours, Continuous run time on AC power
Expected Life of Li-Ion Battery	500 Charge/Discharge Cycles
Operating Temperature	-20°C to +49°C (-4°F to +120°F)
Overall Dimensions	Width: 28" Height: 18" Length: 89"
System Weight	40 lbs.
System Negative Pressure	0.07 inches water column or greater when running two filters
Securing and Patient Restraint	Internal patient restraints ; External gurney straps

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Chemical Resistance, Black Containment Material:

Exposure	Rating	Exposure	Rating
AFF	A	JP-4 Jet Fuel	A
Acetic Acid (5%)	B	JP-5 Jet Fuel	A
Acetic Acid (50%)	C	JP-8 Jet Fuel	A
Ammonium Phosphate	T	Kerosene	A
Ammonium Sulfate	T	Magnesium Chloride	T
Antifreeze (Ethylene Glycol)	A	Magnesium Hydroxide	T
Animal Oil	A	Methanol	A
Aqua Regia	X	Methyl Alcohol	A
ASTM Fuel A (100% Iso-Octane)	A	Methyl Ethyl Ketone	X
ASTM Oil #2 (Flash Pt. 240 deg C)	A	Mineral Spirits	A
ASTM Oil #3	A	Naphtha	A
Benzene	X	Nitric Acid (5%)	B
Calcium Chloride Solutions	T	Nitric Acid (50%)	C
Calcium Hydroxide	T	Perchlorethylene	C
20 % Chlorine Solution	A	Phenol	X
Clorox	A	Phenol Formaldehyde	B
Conc. Ammonium Hydroxide	A	Phosphoric Acid (50%)	A
Corn Oil	A	Phosphoric Acid (100%)	C
Crude Oil	A	Phthalate Plasticizer	C
Diesel Fuel	A	Potassium Chloride	T
Ethanol	A	Potassium Sulphate	T
Ethyl Acetate	C	Raw Linseed Oil	A
Ethyl Alcohol	A	SAE-30 Oil	A
Fertilizer Solution	A	Salt Water (25%)	B
#2 Fuel Oil	A	Sea Water	A
#6 Fuel Oil	A	Sodium Acetate Solution	T
Furfural	X	Sodium Bisulfite	T
Gasoline	B	Sodium Hydroxide (60%)	A
Glycerin	A	Sodium Phosphate	T
Hydraulic Fluid- Petroleum Based	A	Sulphuric Acid (50%)	A
Hydraulic Fluid-Phosphate		Tanic Acid (50%)	A
Ester Based	C	Toluene	C
Hydrocarbon Type II (40% Aromatic)	C	Transformer Oil	A
Hydrochloric Acid (50%)	A	Turpentine	A
Hydrofluoric Acid (5%)	A	Urea Formaldehyde	A
Hydrofluoric Acid (50%)	A	UAN	A
Hydrofluosilicic Acid (30%)	A	Vegetable Oil	A
Isopropyl Alcohol	T	Water (200 deg F)	A
Ivory Soap	A	Xylene	X
Jet A	A	Zinc Chloride	T

Ratings are based on visual and physical examination of samples after removal from the test chemical after the samples were immersed for 28 days at room temperature. Results represent ability of material to retain its performance properties when in contact with the indicated chemical.

Rating Key:

- A** – Fluid has little or no effect
- B** – Fluid has minor to moderate effect
- C** – Fluid has severe effect
- T** – No data - likely to be acceptable
- X** – No data - not likely to be acceptable

Vapor Transmission Resistance**Tested according to ASTM D814-55 Inverted Cup Method**

Perhaps a more meaningful test is determination of the diffusion rate of the liquid through the membrane.

The vapor transmission rate to various chemicals was determined by the ASTM D814-55 inverted cup method. All tests were run at room temperature and results are shown in the table.

Chemical	g/hr/m²
Water	0.11
#2 Diesel fuel	0.03
Jet A	0.11
Kerosene	0.15
Hi-Test Gas	1.78
Ohio Crude Oil	0.03
Low-Test Gas	5.25
Raw Linseed Oil	0.01
Ethyl Alcohol	0.23
Naphtha	0.33
Perchloroethylene	38.58
Hydraulic Fluid	0.006
100% Phosphoric Acid	7.78
50% Phosphoric Acid	0.43
Ethanol (E-96)	0.65
Transformer Oil	0.005
Isopropyl Alcohol	0.44
JP4 (E-96)	0.81
JP8 (E-96)	0.42
Fuel B (E-96)	6.28
Fuel C (E-96)	7.87

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