



RESEARCH BRIEF

Research Request:

Passenger Smoke Hoods

Research Response:

Smoke Hoods are protective head coverings which, as a minimum, have a filter system that prevents wearers from breathing in unwanted smoke gases and particulates generated in a fire. They may also incorporate a small oxygen generator by which means their useful endurance as a protective device is increased. They are made of a heat resistant material which is able to retain its integrity up to temperatures in excess of 350 degrees Celsius.

The most important basic function of any smoke hood is its ability to convert toxic carbon monoxide to relatively harmless carbon dioxide through a catalytic process. Most smoke hood designs also use some form of activated charcoal filter to screen out corrosive gases such as ammonia and chlorine and acidic gases such as hydrogen chloride and hydrogen sulfide. The temperature of inhaled gases must also be maintained within acceptable limits. A key issue in the design of all smoke hoods is the assumed respiration rate which will vary according to the extent of physical activity by a factor of approximately three. Because minimum-use duration requirements specified by Regulators for Cabin Crew Smoke Hoods are usually 20 minutes when 'physically active', they also incorporate a potassium dioxide cartridge which functions as an oxygen generator in addition. Overall, these hoods are of much more substantial construction and provide greater all-round protection for the wearer than the lightweight 'basic' smoke hoods which have been consistently proposed for passenger use.

Smoke Hoods are now routinely provided for Cabin Crew but, despite years of debate dating back to as long ago as an NPRM issued by the FAA in 1969, they have not yet been approved for passenger use in commercial operations. Should smoke hoods ever be approved for passenger use for commercial operations, they will clearly have a lower performance requirement, which will reduce their weight and complexity so that their effective use by people with only the guidance of a cabin safety briefing and instruction cards is practicable. It is mainly concerns about the range of passenger abilities to use such equipment, and awareness of experience with passenger oxygen mask use during cabin de-pressurization, which has prevented the adoption of smoke hoods for passengers.

Source: Eurocontrol Skybrary

Passenger Smoke Hood Manufacturers

The following list of smoke hoods, in no particular order, are designed for passenger use and are the closest in similarity to the Tefcon Provita smoke hood. (*PRISM Solutions does not endorse or recommend any particular product.)

ESSEX PB&R- SCU



Manufacturer	ESSEX PB&R
Product Name	SCU
Cost per unit	\$407.30
Carbon Monoxide Protection?	Yes
Replacement schedule	10.5 years
Dimensions	7.5x2x9.5
Protection Time	60 minutes
Fire Resistance	Dripping thermoplastics: 390° F Transient flame: 1800° F for 5 seconds
Standards complied with	Same control standards as the FAA approved Essex Crewmember PBE
Bulk Discount?	No
Website	http://www.smokehoods.com/products/scu_main.aspx
Notes	100% Aviation Grade oxygen. 10,000ft cabin pressure altitude limit. The Essex SCU is the only personal smoke hood on the market which uses the same materials, design, manufacturing process, protection factor, and control standards as the FAA approved Essex Crewmember PBE.

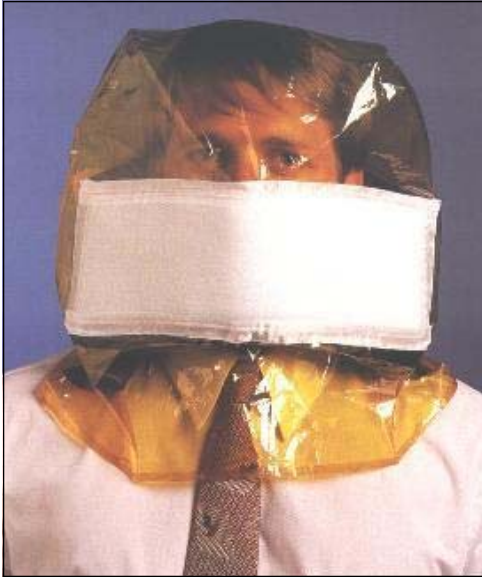
ESSEX PB&R– Plus 15 Escape Smoke Hood



Manufacturer	ESSEX PB&R
Product Name	Plus 15 Escape Smoke Hood
Cost per unit	114.95
Carbon Monoxide Protection?	Yes
Replacement schedule	5.5 years
Dimensions	7x4x5
Protection Time	15 minutes
Fire Resistance	500-540F
Standards complied with	EN 403 Certification
Bulk Discount?	90 per unit for 45 units
Website	http://www.beyondbulbs.com/Essex-PB-R-Plus-15-Escape-Smoke-Hood-pr-254.html
Notes	http://www.westernsafety.com/essexescapehood/escapehood.html

Dräger Parat C

Manufacturer	Dräger
Product Name	Parat C
Cost per unit	150
Carbon Monoxide Protection?	Yes
Replacement schedule	6 years (filter and valve charge)
Dimensions	5.5x3x7.5
Protection Time	15 minutes
Fire Resistance	Flash tested 1,200F
Standards complied with	Approved by NIOSH as a 30-minute General Category Escape Mask
Bulk Discount?	No
Website	http://www.buydraegertubes.com/parat-c-2.aspx
Notes	

Tecfen Provita

Manufacturer	Tecfen
Product Name	Provita
Cost per unit	120
Carbon Monoxide Protection?	No
Replacement schedule	Unknown
Dimensions	8x6x1
Protection Time	20 minutes
Fire Resistance	None
Standards complied with	None
Bulk Discount?	None
Website	http://www.tecfe.com/survival/hood.html
Notes	

Elmridge iEvac Fire Escape Hood



Manufacturer	Elmridge
Product Name	iEvac Fire Escape Hood
Cost per unit	189.95
Carbon Monoxide Protection?	Yes
Replacement schedule	5.5 years
Dimensions	6 3/4x 6 1/8x 5 1/4
Protection Time	30 minutes
Fire Resistance	980 - 1700F
Standards complied with	US Coast Guard, USFA-FEMA, NIOSH, NFPA
Bulk Discount?	No
Website	http://www.amazon.com/Elmridge-Protection-Products-EBP-200-Training/dp/B003JQL2RM
Notes	http://www.elmridgeprotection.com/ievac/index.php

Safe Escape ASE 30



Manufacturer	Safe Escape
Product Name	ASE 30
Cost per unit	70
Carbon Monoxide Protection?	Yes
Replacement schedule	5 years
Dimensions	Soft case- 4x5.5x7 inches. Hard Case-5.5x9x4.5
Protection Time	30 minutes
Fire Resistance	1400F
Standards complied with	EN403:2004
Bulk Discount?	4 dollars off for every 10
Website	http://www.raytechcatalog.com/product_info/ase30-smoke-hood-411.html
Notes	http://www.safehomeproducts.com/shp2/sc/shopexd.aspx?id=1441&PLC=1&GFM=41&referer=http://www.safehomeproducts.com/shp2/product/safe-escape-fire-and-smoke-hood-ase30a-hard-case/escape-hoods-for-smoke-and-gases/1441/1441.aspx&source=GoogleBase&EOR=x&ESR=2&dir=shp2&b=sf5d&w=1107&h=944&f=N&tp=60370&frompg=99&topg=99&menupage=1