

HOT SHIELD FACE MASK / FR RESPIRATOR HOUSING MODEL HS-4 FOR THE SUNDSTROM BRAND SR-100 HALF FACE RESPIRATOR

SUMMARY DESCRIPTION

Hot Shield Fire Resistant Respirator Housing Model HS-4 is designed specifically for the Sundstrom brand, model SR-100 Half Face Respirator. The HS-4 has been designed by firefighters for wildland firefighting, but has found application in several other industries who need the respiratory protection of the Sundstrom SR-100 and thermal protection for their face & neck.

The HS-4s patented design provides a high degree of thermal protection to face & neck areas. This is accomplished by its unique design and the use of highly thermally resistant materials, both of which are crucial to protecting human skin. We use CarbonX, a proprietary fabric that far exceeds the Radiant Protective Performance requirements of NFPA #1977 Standards for Wildland PPE (see charts on website) and even NFPA #1971 Standards for Structural Firefighting and NFPA #2112.

The combination of the HS-4 FR Mask Housing with the Sundstrom SR-100 translates to easier breathing and greater comfort to the user, even for when used for prolonged periods of time. This special combo allows "fit testing" of individuals (if fit testing is a necessity or desire) as the HS-4 does not interfere with the fit, form or function of the Sundstrom SR-100 respirator. The sealing surfaces are not impeded by the HS-4. The CarbonX materials also absorb perspiration, adding to overall user comfort. Conclusion: The HS-4 protects the both the user *and* the respirator. Features 3M Scotchlite Reflective Trim for nighttime visibility. Fastens behind the neck (Velcro). One size fits all, machine washable.

HS-4 DATA SHEET

Name:	Hot Shield FR Housing HS-4
Model Number:	HS-4
Weight:	3.8 oz. / 106.4 grams
Wt of HS-4 & SR-100:	15.9 oz / 450.8 grams
Sizing:	One size fits all (hook & loop fasteners behind neck)
Main Benefits:	Protection from burns to the face AND to the respirator itself.
Description:	A facial protection safety garment designed exclusively for use with the Sundstrom SR100 Half Face Respirators. Mask is designed to completely cover said respirator without interfering in the face-to-respirator seal thereby allowing for individual fit testing. Mask can hang loosely around neck until ready for immediate use. Mask uses FR hook and loop fasteners to secure around back of neck.
Main Users:	Mask is used by firefighters and other workers in areas where heat, flame and airborne particulate hazards exist and a self-contained breathing apparatus is impractical or impossible.
Limitations:	Not a respirator itself; must be used with the Sundstrom SR-100
Coverage:	Most areas of the face and neck. Leaves ears exposed.
Care:	Hand, machine or dry clean.
Warranty:	One year materials and workmanship.

FREQUENTLY ASKED QUESTIONS OF THE HOT SHIELD FR FACE PROTECTOR & RESPIRATOR HOUSING FOR THE SUNDSTROM SR-100 HALF FACE RESPIRATOR

Q: WHAT IS THE HOT SHIELD HS-4?

A: The HOT SHIELD HS-4 is a highly thermally resistant mask housing designed specifically for the Sundstrom SR-100 Half Face Respirator.

Q. HOW DOES THE HOT SHIELD® HS-4 PROTECT YOU?

A: In general, our products greatly reduce the risk of burns to your face by the use of highly thermally resistant materials combined with our patented design. The outer shell of every Hot Shield mask, shroud or respirator housing is made of super tough & extreme fire resistant CarbonX fabric. CarbonX is an inherently non-flammable fabric that will not burn, melt, drip, ignite, shrink, or char when exposed to direct flame or extreme heat; are highly resistant to molten metal splash, flammable liquids, and certain chemicals. When exposed to intense heat or flame, the CarbonX fiber blend carbonizes and then expands, eliminating any oxygen content within the fabric, tested to achieve an astonishing Limit of Oxygen rating of 55. The CarbonX thermal protective properties will not wash out or wear away.

CarbonX accomplishes this with less weight than traditional PPE materials. CarbonX is lightweight, soft to the touch, and flexible, wearing much like cotton. CarbonX also breathes well, wicks away moisture, and dries quickly, enhancing the wearer's comfort and productivity and reducing the potential for fatigue and heat stress.

CarbonX was initially developed by a race car driver after he suffered severe burns and is used extensively in that industry in racing suits & gloves. Hot Shield USA has been using CarbonX exclusively since November 2001.

Q: HAS THE HOT SHIELD HS-4 BEEN INDEPENDENTLY TESTED?

A: The individual component CarbonX fabrics we use have been tested and far exceed the thermal performance requirements as set forth in both NFPA Standard #1977 Wildland Protective Clothing and Equipment, Editions 2011 & 2016. You can find these testing requirements in Section 8.2, Radiant Protective Performance (RPP), Section 8.3 Flame Resistance and 8.4 Heat & Thermal Shrinkage Resistance. Also, CarbonX test data can be found on the website www.carbonx.com.

Q: IS THE HOT SHIELD HS-4 A RESPIRATOR?

A: No, the HS-4 is a fire resistant mask housing specifically designed to fit the Sundstrom SR-100 Half Face Respirator. The HS-4 is designed for the thermal protection of the user & the respirator.

Q: IS THE HOT SHIELD HS-4 COMPLIANT WITH NFPA STANDARDS?

A: To date, NFPA Standard #1977 Wildland Protective Clothing and Equipment does not contain a category for "face masks", only shrouds. Until then, it is our understanding and those of everyone else we have consulted on this issue, until this is established in the standard, no face mask has a testing process, method or standard for which to be tested against. Consequently, firefighters, users, workers,

employers are free to choose whatever face mask they wish to protect themselves or their employees from the hazards of heat and flame.

However it is important to know all the issues surrounding “wildland face masks”, “wildland respirators” and applicable regulatory standards in order to obtain a true & clear understanding of heretofore very confusing issue. We offer the following logical, linear numbered items in order to help you understand the entire issue. Then you can make an informed decision for yourself, your department and/or your employees.

#1- NFPA Standard #1977 does not contain a specific category for a “face mask”. It does contain a category for a “face/neck shroud”, however face/neck shrouds and face masks are different and cannot be considered to be identical.

#2- Until a “face mask” category is written into NFPA Standard #1977, no product or face mask has a standard or bench mark to follow and/or be tested against. This includes the Hot Shield HS-4 or any other face mask commercially available.

#3- The Hot Shield HS-4 is a face mask/housing that does not interfere with the fit, form or function of the half face respirator for which it is specifically designed (the Sundstrom SR-100).

#4- All Hot Shield masks, including the Hot Shield model HS-4, far exceed the *thermal protection performance requirement minimums* of any & all categories listed in NFPA Standard #1977 Editions 2011 & 2016 (pants, shirts, etc), as well as NFPA Standard #1971 and #2112.

#5- Thermal protection performance minimums found in NFPA Standard #1977 are set so low that even FR cotton will “meet or exceed” the Standard!! Ponder that for a minute and read #6.

#6- Human skin will begin to burn at approximately at a mere 116 degrees F. If a chosen piece of protective clothing meets the minimum thermal protective performance, but cannot adequately prevent *the inside temperature* from rising beyond 116 degree F for more than 1 second of time, your skin will suffer a burn. Logic dictates our skin must be adequately protected from the heat & flame that can often be encountered in the wildland firefighting environment, or any thermally challenging environment.

#7- NFPA #1984 “Standard on Respirators for Wildland Fire-Fighting Operations” does have specific and detailed requirements for a “wildland *respirator*”. However, it is our understanding that no manufacturer has been able to create a wildland respirator that can meet this Standard. In essence, a Standard was created in absence of an actual device. Fire departments are free to choose whether to adopt Standard #1984 or not.

Q: CAN THE HOT SHIELDHS-4 PROTECT ME FROM SUPER HEATED AIR?

A: No. Only a positive pressure breathing apparatus can do that! However, in an environment like wildland firefighting operations, where a SCBA is impossible or impractical, the only remaining option is a negative pressure filtration device combined with extreme heat protection....which is exactly what the HS-4 with the Sundstrom SR-100 provides.

Q: IS THE HOT SHIELD HS-4 COMPATIBLE WITH BOTH FORESTRY TYPE AND STRUCTURE TYPE HELMETS? WHAT ABOUT MY EXISTING SHROUD?

A: It does not matter which type of helmet you use. The HS-4 is a 1 of 2 components. The SR-100 Half Face Respirator is the other. Together, they comprise a “stand alone” breathing and face protection system. Your standard shroud will only close around the bottom of this mask/respirator combo.

Q: IS THE HOT SHIELD HS-4 COMPATIBLE WITH GOGGLES? PRESCRIPTION GLASSES?

A: Yes. That is one of the advantages.

Q: WHY IS THE SUNDSTROM SR-100 HALF FACE RESPIRATOR A GOOD CHOICE?

A: #1- It features the least inhalation restriction of any half face respirator available in the world. The SR-100 utilizes nearly the entire exposed visible portion of the single large cartridge filter, not just a small 2” opening like most respirator designs. The total square inches of filter media is greater than any other half face respirator canister. #2- Exhalation efficiency is vastly easier than other makes because instead of just one exhalation valve, Sundstrom incorporates two (2) valves. #3- The body of the SR-100 is high grade silicone (less irritation), being more pliable and comfortable to the wearer, molding more easily to individual faces and reducing hard, uncomfortable pinch points. #4- The user adjustable “set it and forget it” neck hang strap is very user-friendly and requires only one initial adjustment.

Q: WHAT KIND OF MAINTENANCE OR ANY SPECIAL CLEANING PROTOCOLS IS REQUIRED?

A: The HS-4 can be hand washed, machine washed or dry cleaned. Simply remove the HS-4 from the Sundstrom SR-100 prior to washing. Fasten any Velcro before machine washing to prevent ripping and tearing of fabric mesh. Re-install after completely dry. The Sundstrom SR-100 can be hand washed and if desired, disinfected from virus contact; see the Sundstrom data sheet for specific cleaning instructions for disinfecting against Covid-19.

Q: WHAT LENGTH OF SERVICE CAN I EXPECT TO SEE?

A: With normal firefighter abuse/use, you should not find replacement issues for at least 5-10 years. There is not much to break or tear. We warranty all of our products for one full year. Most of what we see in repairs/returns is simply caused by people not removing the filter before washing, abusing the mask by storing hard tools (pliers, etc) in the same pocket as the mask.

Q: WHAT ELSE DO I NEED TO KNOW ABOUT THE HS-4?

A: Hot Shield USA has put together a combination of 3 products, known as the HS-4 Combo. The first product is the “HS-4”, a face protective mask and respirator cover specifically designed to “mate” with the Sundstrom brand half face respirator model SR-100. The 2nd product in the HS-4 Combo is the Sundstrom WFR Kit. This kits contains not only the SR-100 for which the HS-4 is specifically designed for, but also all the components necessary for respiratory protection in a wildland firefighting environment, including HEPA particulate cartridge (SR-510) and a chemical cartridge (SR-232). The Sundstrom SR-100 is truly the best half face respirator made anywhere in the world, in performance, breathability and comfort. The SR-100 is made of the finest silicone, is easy to don & doff and allows for “fit testing”. The 3rd product in the HS-4 Combo is Hot Shields Web Case. A bright yellow nylon cordura bag/pouch, designed to carry a Hot Shield mask and accommodates the HS-4 w/ the

SR-100. The Web Case is easily secured onto ones wildland pack, webbing harness or similar with straps & snaps, and quickly removes to transfer back to ones wildland gear bag.

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