

**INSTRUCTION  
MANUAL**  
**Nextteq Irritant  
Smoke Tube Kit**



Irritant Smoke Tube Kit

**NEXTTEQ**<sup>®</sup>  
**INTERNATIONAL**

BETTER TECHNOLOGY. BETTER QUALITY.  
BETTER VALUE.

# **INXTTEQ®** Irritant Smoke Tube Kit

OSHA 29 CFR 1910.134

**The Nextteq Irritant  
Smoke Tube Kit  
provides a respirator  
fit testing and airflow  
indication system  
that is:**

- *quick*
- *simple*
- *economical*



Available in:

Irritant Smoke Tube Kit  
5-pack  
P/N NX9500-5

Irritant Smoke Tube Kit  
10-pack  
P/N NX9500-10





BETTER TECHNOLOGY. BETTER QUALITY.  
BETTER VALUE.

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NOTE: The Nextteq Sensitivity Check Protocol (P/N 90401) can be downloaded from [www.nextteq.com](http://www.nextteq.com) or by contacting Nextteq Customer Service.

## I. INTRODUCTION

The Nextteq Irritant Smoke Tube Kit, a pump and tube system, are quick, simple, and economical to use for respirator fit testing and airflow indication. The kit contains everything needed to perform multiple fit tests without the cost of extra equipment. The Nextteq aspiration bulb pump and Nextteq irritant smoke tube is ready for immediate use. There is no warm-up time or calibration required. Also, there are no special sensitivity test chemical mixtures to prepare in advance.

### High quality glass tube –

In the event of accidental tube breakage, each Nextteq smoke tube is wrapped in a thin transparent film that protects against the shattering of the glass tube and the release of Stannic Chloride.

**Clearly marked “A” symbol** – for correct insertion into the “A”spiration Bulb.

**One-Way Valve** – provides safe one-way operation of air flow by test administrator towards the test subject.



### **NEXTTEQ®**

A brand name that indicates the highest quality tube available in the market, exclusively sold by Nextteq International LLC.

**Part number NX9501 and Lot number printed on every tube.** Nextteq's part number and quality assurance number is printed on every Nextteq smoke tube. Smoke tubes of the same production lot have the same Lot No. When a Lot No. is registered, sample tubes with that Lot No. are retained and monitored periodically to verify the quality.

**Nextteq Aspiration Bulb Pump** – 30cc bulb is easy to use repeatedly when testing multiple subjects.

## Nextteq Aspiration Bulb Pump And Smoke Tube System

## OSHA COMPLIANT

Irritant smoke is the only OSHA-accepted qualitative fit testing method that does not rely on the test subject's subjective response. Other types of qualitative fit tests, such as banana oil (Isoamyl acetate), saccharin, or Bitrex, may cause false negative results. There is no need for chamber construction, nebulizers, electric pumps, mixing jars, batteries, special test masks, mask probes, or testing hoods. With a five-year shelf life and broad environmental operating conditions, you can perform fit testing and airflow tracking anytime, and virtually anywhere.

Nextteq recommends the following protocol be used whenever the Nextteq Irritant Smoke Tube Kit is used for qualitative irritant smoke respirator fit testing:

1. Qualitative Respirator Fit Testing to be performed in strict compliance with OSHA 29 CFR 1910.134 at the following intervals:
  - A. At time of initial respirator selection and fitting.
  - B. Annually after the initial fit testing or other successful qualitative fit test.
  - C. Whenever the respirator becomes “unacceptable” to the employee and the employee properly notifies the employer of the condition. (A respirator may be unacceptable if it causes irritation or pain to the employee or if, because of discomfort, the employee is unable to wear the respirator for the time required.)
  - D. Whenever there is an obvious change in the employee's physical condition that could affect respirator fit. (An obvious change in physical condition could include facial scarring, dental changes, cosmetic surgery, or changes in body weight.)



There are two Nextteq Irritant Smoke Tube Kits for Respirator Fit Testing and Airflow Indication (**Kit Part Number NX9500-10 includes 10 tubes** and **Kit Part Number NX9500-5 includes 5 tubes**) that include the following:

1	Part No. Item
	NX9501-10 One box of Nextteq Irritant Smoke Tubes with Instructions and Warnings (Each box contains ten tubes with black caps)
	or
	NX9501-5 One box of Nextteq Irritant Smoke Tubes with Instructions and Warnings (Each box contains five tubes with black caps)
2	90005 One Nextteq One-Way Valve Aspiration Bulb Pump
3	NX9503 One Nextteq Carrying Case
4	9504-10 Two Tube Breaker Pins
5	9504-20 One Tube Protector
6	NX9505 One Nextteq Irritant Smoke Tube Kit Manual

A package of Nextteq Irritant Smoke Tubes (**Part Number NX9501-10 or NX9501-5**), which can also be purchased separately, includes the following:



The Nextteq Sensitivity Check Protocol (P/N 90401) can be downloaded from [www.nextteq.com](http://www.nextteq.com) or by contacting Nextteq customer service. (877-312-2333)

## II. SPECIFICATIONS

### Aspiration Bulb Pump

Length:	3.1 in / 78 mm
Diameter:	1.6 in / 41 mm
Capacity:	30 cc
Operating Temperature:	32°F to 104°F / 0°C to 40°C
Operating Relative Humidity:	10% to 95% RH
Storage Temperature:	41°F to 77°F / 5°C to 25°C
Storage Condition:	Secure, dry, cool space away from direct light

### Smoke Tubes

Length:	4.3 in / 110 mm
Diameter:	0.28 in / 7 mm
Delivered Volume:	~ 30 ml
Active Ingredient:	Stannic Chloride ( $\text{SnCl}_4$ )
Fluid Admitted:	Air
Generated Smoke Strokes:	Approximately 200 (depending on humidity)*
Color of Generated Smoke:	White
Operating Temperature:	32°F to 104°F / 0°C to 40°C
Operating Relative Humidity:	10% to 95% RH
Storage Temperature:	41°F to 77°F / 5°C to 25°C
Storage Condition:	Secure, dry, cool space away from direct light
Shelf Life:	5 Years

*\* At 20% or less relative humidity, the number of strokes capable of generating smoke will increase by ~10%. At 80% relative humidity, the number of strokes capable of generating smoke will decrease by ~10%.*

### III. WARNINGS



1. Before using this product, read, understand, and comply with all labels, warnings, instructions, and other literature accompanying the product including but not limited to this manual, the SDS (also available as P/N 90040 and as a part of this manual in Section V.), the Sensitivity Check Protocol (also available as P/N NX90401 online at [www.nextteq.com](http://www.nextteq.com)), and Nextteq Instructions and Warnings included in the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5). Failure to comply with all warnings and instructions could cause property damage, serious injury, or death.
2. Operate the product in strict compliance with manufacturer's specifications and instructions.
3. Be thoroughly familiar with this product, the manufacturer's instructions and warnings, and associated equipment before using this product.
4. Inspect this product and associated equipment for damage or defects before using. Do not proceed with Respirator Fit Testing or Sensitivity Check if this product or associated equipment is damaged or defective.
5. Keep all bystanders away from this product during use or testing.
6. Do not remove, alter, or cover any label, instruction, or warning.
7. Use only in well-ventilated areas to prevent the buildup of smoke or fumes. The buildup of smoke or fumes may increase the concentration of the smoke or fumes to dangerous levels, resulting in property damage, serious injury, or death.



8. Do not use under a hood or other enclosed area. Do not use in a confined space. Use under a hood, other enclosure, or in a confined space may increase the concentration of fumes or smoke to dangerous levels, resulting in property damage, serious injury, or death.
9. Do not directly breathe the fumes or smoke. Avoid prolonged breathing of smoke or fumes. Prolonged breathing of smoke or fumes may result in property damage, serious injury, or death.
10. Do not blow smoke or fumes directly into a person's unprotected face. Blowing smoke or fumes directly into a person's unprotected face could result in serious injury, or death.
11. Wear respiratory protection in accordance with OSHA 29 CFR 1910.134 and NIOSH 42 CFR 84 when directly exposed to fumes or smoke.
12. Wear eye protection in accordance with OSHA standards when exposed to fumes or smoke or when breaking glass tube tips. If contact lenses are worn, they should be worn in strict compliance with applicable NIOSH, OSHA, and ACOEM standards.
13. Do not blow smoke directly into eyes or onto skin. Avoid smoke contacting eyes or skin. Eyes should be tightly closed and remain closed during Respirator Fit Testing and until smoke clears. Blowing smoke into a person's eyes could result in serious injury.
14. Respirator Fit Testing should be performed in strict compliance with OSHA 29 CFR 1910.134.
15. For OSHA qualitative irritant smoke respirator fit testing, only use the Nextteq-specified pump(s) at the flow rates specified in OSHA 29 CFR 1910.134. For all other uses of irritant smoke tubes, only use the manufacturer-specified pump at the manufacturer-specified flow rate. If the pump is operated at non-specified flow rates, smoke or

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fume concentrations may increase to dangerous levels, resulting in property damage, serious injury, or death.

16. Only use the pumps specified by the manufacturer. Only operate the pumps in strict compliance with the manufacturer's specifications and instructions. If a non-specified pump is used or if the pump is operated not in accordance with the manufacturer's specifications and instructions, smoke or fume concentrations may increase to dangerous levels, resulting in property damage, serious injury, or death.
17. Do not operate this product closer to test subjects or test administrator than specified by OSHA 29 CFR 1910.134 and the manufacturer. Operating at non-specified distances could increase smoke or fume concentrations to dangerous levels, resulting in property damage, serious injury, or death.
18. The smoke tube contains stannic chloride that combines with humidity to liberate a white smoke consisting of hydrogen chloride and tin compounds.
  - A. If inhaled and repeated coughing or trouble breathing occurs, immediately remove test subject to fresh clean air. Restore and support breathing as necessary.
  - B. If coughing or breathing difficulty persists, immediately provide oxygen and immediately contact a physician.
  - C. If smoke contacts eyes, immediately flush eyes with copious amounts of clean running water for fifteen (15) minutes, including under eyelids, and immediately contact a physician.
  - D. If smoke contacts a large area of skin, contacts skin for a prolonged period, or if irritation persists, immediately flush affected area with copious

amounts of clean running water for fifteen (15) minutes and immediately contact a physician.

19. Do not use this product for Respirator Fit Testing or Sensitivity Check if any of the following conditions are present:
  - A. The test subject has a pre-existing respiratory, cardiovascular, or bronchial medical condition.
  - B. The test subject is under a physician's care for a respiratory, cardiovascular, or bronchial ailment; sinus, nasal, or ear infection; or impaired immune system; or asthma.
  - C. The test subject is hypersensitive or allergic to stannic chloride, stannic oxide, hydrogen chloride, tin tetrachloride, tin compounds, or metal chloride.
  - D. The test subject has failed the medical evaluation specified by OSHA 29 CFR 1910.134.
20. Do not remove or adjust respirator during Respirator Fit Testing or in the presence of smoke or fumes. Move to an area of fresh clean air before removing or adjusting respirator.
21. The respirator to be tested must be equipped with high efficiency particulate air (HEPA) or P100 series filters.
22. Do not eat, drink, take internally, inhale smoke into the mouth, or consume contents of smoke tube as it may result in serious injury, or death.
23. Do not heat or burn the smoke tubes or throw smoke tubes into a fire. Smoke tubes may emit dangerous toxic fumes.
24. After using smoke tubes or after being exposed to smoke or fumes, wash face, hands, and any areas exposed to fumes or smoke thoroughly with soap and water before eating, drinking, smoking, applying cosmetics, inserting

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or removing contact lenses, or touching eyes or mucous membranes.

25. Do not spray smoke or fumes of smoke tube into ventilation ducts unless you have first checked to ensure the smoke will not be blown onto unprotected people.
26. Do not spray smoke in and/or over areas that have the possibility of contaminating food or beverages, surfaces that come in contact with food or beverages, food or beverage containers, and/or food preparation, serving, or holding areas.
27. This product is only for sale to, only for use by, and only for storage by trained, qualified, technically competent, and professional industrial, commercial, military, or government users.
28. Do not dispose of expired or used smoke tubes in domestic or residential waste. Smoke tubes must be disposed of properly because the tube contains chemicals. Dispose of smoke tubes in strict accordance with all federal, state, and local statutes, ordinances, and regulations.
29. Smoke tubes are primarily composed of glass and chemicals. Keep smoke tubes out of the reach of children.
30. During the Sensitivity Check, do not place the open end of the smoke tube closer than 36 inches from the test subject's face. Do not point the open end of the smoke tube toward the test subject's face. If the smoke tube is placed too close to the test subject's face or points toward the test subject's face, smoke or fume concentrations may increase to dangerous levels, resulting in property damage, serious injury, or death.
31. Perform the Respirator Fit Test and/or Sensitivity Check strictly in accordance with OSHA 29 CFR 1910.134, this

manual, Nextteq's Sensitivity Check Protocol, and other instructions provided by Nextteq.

32. Use the Nextteq Aspiration Bulb Pump for Respirator Fit Testing and the Sensitivity Check strictly in accordance with this manual, OSHA 29 CFR 1910.134, Nextteq's Sensitivity Check Protocol, and the manufacturer's warnings, instructions, and specifications.
33. Prior to starting the Respirator Fit Test or the Sensitivity Check:
  - A. Instruct the test subject to immediately step into fresh, clean air in the event of any exposure or response to irritant smoke.
  - B. Give the test subject a complete and accurate description of the following:
    - I. The Respirator Fit Test
    - II. The Sensitivity Check
    - III. The test subject's duties and responsibilities in accordance with this manual, the Sensitivity Check Protocol, OSHA 29 CFR 1910.134, and Nextteq Instructions and Warnings (included with the box of Nextteq Irritant Smoke Tubes P/N NX9501-10 or P/N NX9501-5)
    - IV. The risk of serious injury or death if the instructions or warnings are not followed
34. Do not start or continue the Respirator Fit Test or the Sensitivity Check if any of the following occurs:
  - A. The test subject does not pass the initial Sensitivity Check, as outlined in OSHA 29 CFR 1910.134.
  - B. The test subject does not pass the User Seal Check, as outlined in OSHA 29 CFR 1910.134.
  - C. There is any hair, clothing, caps, eyeglasses, hearing aids or other objects between the test

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subject's skin and the respirator facepiece seal surface or if any object interferes with valve functions.

- D. The test subject has not correctly donned, positioned, and adjusted the respirator in accordance with OSHA 29 CFR 1910.134.
- E. The test subject has not passed a medical evaluation in accordance with OSHA 29 CFR 1910.134 prior to this test.
- F. The test subject is in poor health or any of the following conditions are present:
  - I. The test subject has a pre-existing respiratory, cardiovascular, or bronchial medical condition.
  - II. The test subject is under a physician's care for a respiratory, cardiovascular, or bronchial ailment; sinus, nasal, or ear infection; or impaired immune system; or asthma.
  - III. The test subject is hypersensitive or allergic to stannic chloride, stannic oxide, hydrogen chloride, tin tetrachloride, tin compounds, metal chloride.
- G. The Respirator Fit Test and/or Sensitivity Check Administrator is not an experienced, trained, qualified, professional Respirator Fit Test and/or Sensitivity Check Administrator able to perform his or her duties in accordance with OSHA 29 CFR 1910.134 including, but not limited to correctly performing the following:
  - I. Instructing the test subject.
  - II. Demonstrating the techniques for performing the tests.
  - III. Conducting the tests.
  - IV. Preparing test materials.

- V. Inspecting and testing all the equipment and components and confirming that all equipment and components are in good working order and may be used together.
  - VI. Demonstrating the proper technique to generate a small, weak, dilute stream of irritant smoke with an aspiration bulb pump.
  - VII. Recognizing an invalid test.
35. Do not distribute a Nextteq Irritant Smoke Tube Kit without a complete set of Nextteq instructions, warnings, specifications, and SDS. Distributing a Nextteq Irritant Smoke Tube Kit without a complete set of warnings, instructions, specifications, and SDS may result in misuse and lead to property damage, serious injury, or death.
  36. Do not expose the test subject too frequently to irritant smoke. Do not re-expose the test subject to irritant smoke until the test subject specifically and expressly confirms that all effects from the prior exposure to irritant smoke have ceased.
  37. A test subject's sensitivity to irritant smoke varies based upon size, weight, heredity, age, health, and other factors. Some test subjects may respond to a greater degree than others to irritant smoke. During the Sensitivity Check, the administrator shall consider the test subject's sensitivity and be careful to generate a small, weak, dilute stream of smoke that is the absolute minimum stream of irritant smoke necessary to elicit a response from the test subject.
  38. The Nextteq Irritant Smoke Tube Kit, Nextteq Irritant Smoke Tubes, and Nextteq Aspiration Bulb Pump are only to be used for Respirator Fit Testing and Sensitivity Check in strict compliance with OSHA 29 CFR 1910.134, this manual, Nextteq's Sensitivity Check Protocol, and other instructions provided by Nextteq LLC.

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39. Do not substitute, modify, or omit parts or components. Use exact manufactured replacement parts in configurations specified by the original manufacturer. Substitution of unauthorized parts may result in property damage, accident, serious injury, or death.
  40. The Nextteq Aspiration Bulb Pump has an internal volume of approximately 30 milliliters. The pump produces a volume of approximately 25 milliliters with each complete and uniform bulb compression plus or minus 5 milliliters per compression.
  41. To produce a flow rate of approximately 200 milliliters per minute with the Nextteq Aspiration Bulb Pump, uniformly and completely compress the bulb smoothly and continuously every 8 seconds for 1 minute.
  42. To produce a small, weak, dilute concentration of smoke using the Nextteq Aspiration Bulb Pump, slowly and gently compress the bulb at a controlled, uniform, steady rate until a small, weak, dilute stream of smoke is produced that is the absolute minimum necessary to elicit a response from the test subject being tested.  
Then immediately stop compressing the bulb and release the partially compressed bulb. No additional smoke is to be generated.
  43. Do not insert a Nextteq Irritant Smoke Tube into an operating electronic pump.
  44. Do not use a Nextteq Irritant Smoke Tube with an electronic pump for the Sensitivity Check. The electronic pump may not be calibrated; the flow rate may be set too high; and the pump may not automatically shut off rapidly. Any of these could lead to an increased concentration of smoke or fumes, resulting in property damage, serious injury, or death.
  45. Do not dispose of irritant smoke tubes with turpentine, alcohols, or amines. Exposure to turpentine, alcohols, or



amines may result in a chemical reaction and fire resulting in property damage, serious injury, or death.

46. Before using or attempting to use this product, users should wear the following:
  - A. Safety gloves in accordance with OSHA standards and good practice.
  - B. Respiratory protection in accordance with OSHA 29 CFR 1910.134 and NIOSH 42 CFR 84.
  - C. Eye protection in accordance with OSHA standards and good practice. Contact lenses should be worn in strict compliance with applicable NIOSH, OSHA, and ACOEM standards.
47. This product(s) is designed for qualitative respiratory fit testing in ambient atmospheres of 40% relative humidity to 90% relative humidity. Do not use this product(s) in atmospheres of less than 40% relative humidity. Use of this product(s) below 40% relative humidity may increase the irritant effect of the smoke.
48. Do not fit test N95, R95, P95, N99, R99, or P99 particulate respirators with a Nextteq Irritant Smoke Tube. Fit testing the particulate respirators listed above with a Nextteq Irritant Smoke Tube may result in serious personal injury, sickness, and/or death.
49. Ship or transport this product in accordance with all federal, state, and local laws and regulations, including federal DOT regulation 49 CFR, and OSHA and FAA regulations.
50. Keep this manual and the Nextteq Instructions and Warnings included in the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5) available for reference and training.
51. Check with your transportation provider before transporting the Nextteq Irritant Smoke Tube Kit or

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Nextteq Irritant Smoke Tubes on an airplane, train, bus, or other method of transportation.

52. Remember, the product is only as safe as the product user.
53. If you need more information or if you have any questions about operation or use, contact Nextteq at one of the following telephone numbers: toll free 877-312-2333 or local number 813-249-5888.

#### **IV. OWNER/USER RESPONSIBILITY**

1. The OWNER and/or USER must have an accurate and complete understanding of the manufacturer's warnings and additionally the manufacturer's operating instructions before using this product. Warning information should be emphasized and understood.
2. If the operator of this product or any person tested by this product is not fluent in English, the manufacturer's warnings and the manufacturer's operating instructions shall be accurately and completely read by the OWNER and/or USER and discussed immediately and fully with the operator of the product in the operator's native language prior to the operator using or attempting to use the product. In addition, it is the responsibility and duty of the OWNER and/or USER to make sure that the operator understands and complies with all of the manufacturer's warnings and all of the manufacturer's operating instructions prior to using or attempting to use this product.
3. If the OWNER and/or USER is confused about the proper use of the Nextteq Irritant Smoke Tube Kit, any instructions or warnings or labels, specifications, test protocols, or manuals, before using or attempting to use this product, the OWNER and/or USER should call Nextteq International LLC at one of the following telephone numbers: toll free 877-312-2333 or local number 813-249-5888 and/or toll free fax 877-312-2444 or local fax 813-249-0188. The OWNER and/or USER may also review information concerning the product on Nextteq's website at [www.nextteq.com](http://www.nextteq.com).

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## V. Safety Data Sheet (SDS)

This SDS is also available at [www.nextteq.com](http://www.nextteq.com) as P/N NX90040.

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### Part 1 Identification

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Product identifier

**Trade name:** Nextteq Irritant Smoke Tube Kit  
using Nextteq Irritant Smoke Tubes  
(P/N NX9500-5 (5 pack))  
using Nextteq Irritant Smoke Tubes  
(P/N NX9500-10 (10 pack))

**CAS Number:** 7646-78-8

**EC number:** 231-588-9

**Index number:** 050-001-00-5

**Relevant identified uses of the substance or mixture and uses advised against**

#### Product description

Glass tube used for irritant smoke generation, designed for Irritant Smoke Qualitative Fit Testing as specified by the U.S. Occupational Safety and Health Administration (OSHA).

#### Application of the substance / the mixture

**Dangerous To Life:** Read, understand and comply with all instructions, warnings, labels, and other literature accompanying this product before attempting to use or using this product. Use this product strictly in accordance with the manufacturer's instructions, specifications, and warnings and only with the manufacturer's specified parts, components, and accessories.

**Class of Users:** This product is only for sale to, only for use by, and only for storage by trained, qualified, technically competent, and professional commercial, industrial, military, or government users.

ASSISTANCE: IF THE USER IS CONFUSED ABOUT THE PROPER USE OF THE SMOKE TUBE / KIT, ANY INSTRUCTIONS, WARNINGS, LABELS, OR THE MANUAL, THE USER SHOULD CONTACT NEXTTEQ INTERNATIONAL LLC FOR ASSISTANCE PRIOR TO USING THE PRODUCT. NEXTTEQ'S TOLL-FREE NUMBER IS: (877) 312-2333; LOCAL NUMBER IS (813) 249-5888.

### **Details of the supplier of the safety data sheet**

#### **Manufacturer/Supplier:**

Nextteq International LLC

8406 Benjamin Rd, Ste J

Tampa, FL 33634

877-312-2333

[www.nextteq.com](http://www.nextteq.com)

**Emergency telephone number:** 877-312-2333

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## **Part 2 - Hazard(s) identification**

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### **Classification of the substance or mixture** Corrosion

Causes severe skin burns and eye damage.

Harmful to aquatic life with long lasting effects.

#### **Additional information:**

Stannic Chloride reacts with ambient humidity to liberate a white smoke consisting of hydrogen chloride (HCl) and tin compounds. The emitted smoke has a strong irritating odor.

#### **Label elements**

#### **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

## Hazard pictograms



GHS05

**Signal word** Danger

**Hazard-determining components of labeling:**

Stannic Chloride

**Hazard statements**

Causes severe skin burns and eye damage.

Harmful to aquatic life with long lasting effects.

**Precautionary statements**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves/protective clothing/eye protection/face protection.

Avoid release to the environment.

Wash thoroughly after handling.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Wash contaminated clothing before reuse.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER/doctor.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

## Classification system: NFPA ratings (scale 0 - 4)



Health = 3  
Fire = 0  
Reactivity = 0

HEALTH	3
FIRE	0
REACTIVITY	0

Health = 3  
Fire = 0  
Reactivity = 0

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## Part 3 - Composition/information on ingredients

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### Chemical characterization: Substances

#### CAS No. Description

7646-78-8 Stannic Chloride (<0.8 g in each Nextteq Irritant Smoke Tube)

#### Identification number(s)

**EC number:** 231-588-9

**Index number:** 050-001-00-5

**Additional information:** Stannic Chloride reacts with ambient humidity to liberate a white smoke consisting of hydrogen chloride (HCl) and tin compounds. The emitted smoke has a strong irritating odor.

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## Part 4 - First-aid measures

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### Description of first aid measures

**General information:** Immediately remove any clothing soiled by the product.

**After inhalation:** Supply fresh air. Consult a doctor for complaints. In case of unconsciousness, place patient securely on side position for transportation.

**After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

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## **Most important symptoms and effects, both acute and delayed**

Effects of Overexposure: Hydrogen chloride gas is corrosive. Prolonged inhalation of gas concentrations moderately above the ACGIH: TLV ceiling of 2 ppm can irritate nasal passages. Inhalation of higher concentrations (above 2 ppm) for short periods of time can cause choking and coughing, and produce severe irritation to the mucous membranes of the upper respiratory tract. The NIOSH-recommended IDLH level is 50 ppm. HCl can cause severe irritation and tissue burns. If deeply inhaled, pulmonary edema may occur. The emitted tin compound is also an irritant to eyes, skin and mucous membranes, due to its acidity.

**Indication of any immediate medical attention and special treatment needed.** No further relevant information available.

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## **Part 5 - Fire-fighting measures**

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### **Extinguishing media**

#### **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

#### **Special hazards arising from the substance or mixture**

Fire encompassing the tubes will emit toxic fumes of chlorides, which violently reacts with water to generate heat. Generates smoke with moisture in air. Mixing with alkali metal may result in an explosion. **Advice for firefighters** If there is a fire around the area where tubes are stored, move the tubes or cool the tubes by dousing with a large amount of water. Do not put water on tubes that have been crushed or broken.

**Protective equipment:** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.



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## Part 6 - Accidental release measures

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### **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

**Environmental precautions:** Inform respective authorities in case of seepage into water ways or sewage systems.

### **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (i.e., sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

### **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## Part 7 - Handling and storage

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### **Handling:**

#### **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.

#### **Information about protection against explosions and fires:**

No special measures required.

#### **Conditions for safe storage, including any incompatibilities**

#### **Storage:**

#### **Requirements to be met by storerooms and receptacles:**

No special requirements.

#### **Information about storage in one common storage facility:**

Not required.

#### **Further information about storage conditions:**

Keep receptacle tightly sealed.

**Specific end use(s)**

No further relevant information available.

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**Part 8 - Exposure controls / personal protection**

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**Additional information about design of technical systems:**

No further data; see section 7.

**Control parameters**

**Components with occupational exposure limits:**

**7646-78-8 Stannic Chloride**

PEL Long-term value: 2 mg/m<sup>3</sup> as Sn

REL Long-term value: 2 mg/m<sup>3</sup> as Sn

TLV Long-term value: 2 mg/m<sup>3</sup> as Sn

**Additional information:** The lists that were valid during the creation were used as basis. Hydrogen chloride gas is corrosive. Prolonged inhalation of gas concentrations moderately above the ACGIH: TLV ceiling of 2 ppm can irritate nasal passages. Inhalation of higher concentrations (above 2 ppm) for short periods of time can cause choking and coughing, and produce severe irritation to the mucous membranes of the upper respiratory tract. The NIOSH-recommended IDLH level is 50 ppm. HCl can cause severe irritation and tissue burns. If deeply inhaled, pulmonary edema may occur. The emitted tin compound is also an irritant to eyes, skin and mucous membranes, due to its acidity.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:** Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

**Breathing equipment:** If voluntary use of respiratory protection is used, select an air purifying respirator equipped with either P100 or acid gas cartridges for protection against

hydrogen chloride fumes that are generated with the use of this product.

### Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Select glove material based on penetration times, rates of diffusion and degradation.

**Material of gloves** The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Penetration time of glove material** The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

**Eye protection:** Tightly sealed goggles.

## Part 9 - Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

Sealed glass tube with  
 Stannic Chloride  
 adsorbed onto inert solid  
 media.

#### Appearance:

**Form:**

Solid

**Color:**

Brown gray

**Odor:**

Irritating sensation

**Odor threshold:**

Not determined.

**pH-value (60 g/l) @ 20 °C (68 °F):** 0.2

#### Change in condition

**Melting point/Melting range**

-33.3 °C (-28 °F)

<b>Boiling point/Boiling range</b>	114 °C (237 °F)
<b>Flash point:</b>	Not applicable.
<b>Flammability (solid, gaseous):</b>	Not applicable.
<b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
<b>Auto igniting:</b>	Not determined.
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
<b>Vapor pressure @ 20 °C (68 °F):</b>	24 hPa (18 mm Hg)
<b>Density @ 20 °C (68 °F):</b>	2.23 g/cm <sup>3</sup> (18.609 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Vapor density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>Organic solvents:</b>	0.0 %
<b>Other information</b>	No further relevant information available.

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## Part 10 - Stability and reactivity

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**Reactivity** No further relevant information available.

### Chemical stability

#### Thermal decomposition / conditions to be avoided:

SnCl<sub>4</sub> decomposes upon exposure to moist air or water. HCl is a stable compound. It does not undergo hazardous

polymerization; however, HCl can catalyze polymerization of other compounds.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** Reacts with turpentine, alcohols, and amines causing a potential fire hazard.

**Incompatible materials:** Incompatible materials include alkali compounds, amines, metal oxides, hydroxides, copper, brass, zinc, other metals, turpentine, and alcohols. Mixing with alkali metals may result in an explosion.

**Hazardous decomposition products:** When heated to decomposition, the smoke tubes will emit chloride fume.

## Part 11 - Toxicological information

### Information on toxicological effects

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

**7646-78-8 Stannic Chloride**

	LC50/4 h	480 mg/l (Trout)
	EC50	14 mg/l (daphnia)
Oral	LD50	99 mg/kg (mouse) Intraperitoneal
Inhalative	LC50/4 h	1.35 mg/l (rat)

**Primary irritant effect:**

**on the skin:** Strong caustic effect on skin and mucous membranes.

**on the eye:** Corrosive effect.

**Additional toxicological information:** Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

Substance is not listed.

**NTP (National Toxicology Program)**

Substance is not listed.

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## OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

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### Part 12 - Ecological information

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#### Toxicity

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Bioaccumulative potential** No further relevant information

**Mobility in soil** No further relevant information available.

#### Ecotoxicological effects:

**Remark:** Harmful to fish

#### Additional ecological information: General notes:

Generally not hazardous for water.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Harmful to aquatic organisms.

#### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

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### Part 13 - Disposal considerations

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#### Waste treatment methods

**Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

#### Uncleaned packagings:

##### Recommendation:

- i) Used items that no longer generate smoke do not need any special cleaning before disposal.
- ii) Used items should not be disposed of until they no longer generate smoke, or are neutralized using water and

- sodium carbonate (or equivalent alkaline substance).
- iii) Unused items should not be disposed of until the stannic chloride ampoule is broken and they are either allowed to fully react until they no longer smoke, or are neutralized using water and sodium carbonate (or equivalent alkaline substance). Consult local authorities to assure compliance with all local, state, and federal law and regulations, including but not limited to EPA regulations.

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## Part 14 - Transport information

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### UN-Number

**DOT, ADR, IMDG, IATA**

UN1827

**UN proper shipping name**

**DOT**

Stannic Chloride, anhydrous

**ADR**

UN1827 Stannic Chloride,  
anhydrous

**IMDG, IATA**

STANNIC CHLORIDE,  
ANHYDROUS

### Transport hazard class(es)

**DOT**



Limited Quantity

**Class**

8 Corrosive substances

**Label**

8

## ADR



Limited Quantity

**Class  
Label**

8 (C1) Corrosive substances  
8

## IMDG, IAT



Limited Quantity

**Class  
Label**

8 Corrosive substances  
8

**Packing group**

**DOT, ADR, IMDG, IATA** II

**Environmental hazards:**

**Marine pollutant:** No

**Special precautions for user** Warning: Corrosive substances

**Danger code (Kemler):** X80

**EMS Number:** F-A,S-B

**Segregation groups** Acids

**Transport in bulk according  
to Annex II of MARPOL73/78  
and the IBC Code**

Not applicable.

**Transport/Additional information:**

**DOT** Ground Transportation – 49 CFR 173.4 small quantity exception for net inner packings with less than 30 grams of authorized solids each. Each individual Irritant Smoke Tube contains <0.8 grams



Stannic Chloride and this exception applies to net inner packings of less than 1 kilogram (1000 grams) of Stannic Chloride (up to 1250 individual Nextteq Irritant Smoke Tubes, or 250 NX9501-5 Nextteq Irritant Smoke Tube Boxes containing 5 tubes each or 125 NX9501-10 Nextteq Irritant Smoke Tube boxes containing 10 tubes each).

**IATA** Air Transportation – IATA excepted quantity for net inner packings with less than 30 grams of Stannic Chloride each. Each individual Irritant Smoke Tube contains <0.8 grams Stannic Chloride and this exception applies to net inner packings of less than 500 grams of Stannic Chloride (up to 625 individual Nextteq Irritant Smoke Tubes, or 125 NX9501-5 Nextteq Irritant Smoke Tube Boxes containing 5 tubes each or 62 NX9501-10 Nextteq Irritant Smoke Tube boxes containing 10 tubes each).

**UN “Model Regulation”:** UN1827, Stannic Chloride, anhydrous, 8, II

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## Part 15 - Regulatory information

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**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Sara**

**Section 355 (extremely hazardous substances):** Substance is not listed.

**Section 313 (Specific toxic chemical listings):** Substance is not listed.

**TSCA (Toxic Substances Control Act):** Substance is listed.

**Proposition 65**

**Chemicals known to cause cancer:** Substance is not listed.

**Chemicals known to cause reproductive toxicity for females:** Substance is not listed.

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**Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

**Chemicals known to cause developmental toxicity:**

Substance is not listed.

**Carcinogenic categories**

**EPA (Environmental Protection Agency)** Substance is not listed.

**TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.

**GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS05

**Signal word** Danger

**Hazard-determining components of labeling:** Stannic Chloride

**Hazard statements** Causes severe skin burns and eye damage. Harmful to aquatic life with long lasting effects.

**Precautionary statements**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves/protective clothing/eye protection/face protection.

Avoid release to the environment.

Wash thoroughly after handling.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue

rinsing.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER/doctor.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

### **National regulations:**

Substance is not listed.

### **State Right to Know**

CAS: 7646-78-8 Stannic Chloride

RTECS: XP 8750000



Skin Corr. 1B, H314;

Aquatic Chronic 3, H412  $\leq 2.5\%$

Substance is not listed.

### **Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

## **Part 16 - Other information**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

### **Recommended restriction of use**

Other Precautions: Avoid eye and skin contact with smoke. Do not directly breathe the smoke. Avoid the buildup of smoke. Use in a well-ventilated area. Do not use under a hood or in a confined space. Do not blow smoke directly into anyone's

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unprotected face or eyes. Test only one person at a time. Do not blow smoke between test subjects. Immediately after using the smoke tube or being exposed to the smoke, scrub face, hands, and any area exposed to the smoke with soap and clean running water and always before eating, drinking, smoking, applying cosmetics, or inserting or removing contact lenses.

Do not use this product for respirator fit testing or a “Sensitivity Check” if any of the following conditions are present:

- a) The test subject has pre-existing respiratory, cardiovascular, bronchial, or sinus medical condition.
- b) The test subject is under a physician’s care for respiratory, cardiovascular, bronchial, or sinus problems.
- c) The test subject is being treated for allergies, hypersensitivity, or asthma or has a pre-existing allergy, hypersensitivity, or other condition.
- d) The test subject is allergic to or hypersensitive to hydrogen chloride, Stannic Chloride, stannic oxide, stannic dioxide, tin tetrachloride, tin compounds, hydrochloric acid, or metal chloride.

### **Abbreviations and acronyms:**

<b>ADR:</b>	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
<b>ADN:</b>	The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
<b>IMDG:</b>	International Maritime Code for Dangerous Goods
<b>DOT:</b>	US Department of Transportation

<b>IATA:</b>	International Air Transport Association
<b>ACGIH:</b>	American Conference of Governmental Industrial Hygienists
<b>EINECS:</b>	European Inventory of Existing Commercial Chemical Substances
<b>CAS:</b>	Chemical Abstracts Service (division of the American Chemical Society)
<b>NFPA:</b>	National Fire Protection Association (USA)
<b>HMIS:</b>	Hazardous Materials Identification System
<b>(USA) LC50:</b>	Lethal concentration, 50 percent
<b>LD50:</b>	Lethal dose, 50 percent
<b>Skin Corr. 1B:</b>	Skin corrosion/irritation, Hazard Category 1B
<b>Aquatic Chronic 3:</b>	Hazardous to the aquatic environment - Chronic Hazard, Category 3

## **VI. OPERATING INSTRUCTIONS FOR RESPIRATOR FIT TESTING**

### **A. Required Steps before Smoke Generation**

1. Before using this product, read, understand, and comply with all labels, warnings, instructions, and other literature accompanying the product, including but not limited to this manual, the SDS (P/N NX90040) available online at [www.nextteq.com](http://www.nextteq.com), the Sensitivity Check Protocol (P/N 90401) in this manual, and Nextteq Instructions and Warnings included in the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5).
2. Inspect this product and associated equipment for damage or defects before using. Do not proceed with Respirator Fit Testing or Sensitivity Check if this product or associated equipment is damaged or defective.
3. Use the Nextteq Irritant Smoke Tube Kit, the Nextteq Aspiration Bulb Pump or the Nextteq One-Way Valve

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Aspiration Bulb Pump, and Nextteq Irritant Smoke Tubes in strict compliance with Nextteq specifications, instructions, and warnings, including but not limited to this manual and Nextteq Instructions and Warnings included in the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5).

4. Do not start or continue the Respirator Fit Test or the Sensitivity Check if any of the following conditions are present:
  - A. The test subject has a pre-existing respiratory, cardiovascular, or bronchial medical condition.
  - B. The test subject is under a physician's care for a respiratory, cardiovascular, or bronchial ailment; sinus, nasal or ear infection; or impaired immune system; or asthma.
  - C. The test subject is hypersensitive or allergic to stannic chloride, stannic oxide, hydrogen chloride, tin tetrachloride, tin compounds, or metal chloride.
  - D. The test subject has failed the medical evaluation specified by OSHA 29 CFR 1910.134.
5. Do not perform or administer Irritant Smoke Qualitative Respirator Fit Testing using the Nextteq Irritant Smoke Tube Kit (P/N NX9500-10 or P/N NX9500-5), Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5), or the Nextteq One-Way Valve Aspiration Bulb Pump (P/N 90005) unless you are a fully trained, qualified, and professional commercial, industrial, military, or government test administrator experienced in correctly conducting irritant smoke qualitative respirator fit testing and fully trained and experienced in generating a small, weak, dilute stream of smoke with an irritant smoke tube and an aspiration bulb pump.

6. Use only in well-ventilated areas to prevent the buildup of smoke or fumes. Do not use under a hood or other enclosed area. Do not use in a confined space.
7. Irritant Smoke Qualitative Respirator Fit Testing should be performed in strict compliance with OSHA 29 CFR 1910.134. The respirator to be tested must be equipped with high efficiency particulate air (HEPA) or P100 series filters.
8. Test subject's eyes should be tightly closed and remain closed during Irritant Smoke Qualitative Respirator Fit Testing or Sensitivity Check until smoke clears. Do not remove or adjust respirator during Irritant Smoke Qualitative Respirator Fit Testing or in the presence of smoke or fumes. Move to an area of fresh clean air before removing or adjusting respirator.
9. A test subject's sensitivity to irritant smoke varies based upon size, weight, heredity, age, health, and other factors. Some test subjects may respond to a greater degree than others to irritant smoke. During the Sensitivity Check, the administrator shall consider the test subject's sensitivity and be careful to generate a small, dilute, weak stream of smoke that is the absolute minimum stream of irritant smoke necessary to elicit a response from the test subject.
10. Do not re-expose the test subject to irritant smoke until the test subject specifically and expressly confirms that all effects from the prior exposure to irritant smoke have ceased.
11. Test only one test subject at a time.
12. For Irritant Smoke Qualitative Respirator Fit Testing, the Nextteq Aspiration Bulb Pump has an internal volume of approximately 30 milliliters. The Nextteq Aspiration Bulb Pump produces a volume of approximately 25 milliliters with each complete and

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uniform bulb compression plus or minus 5 milliliters per compression. To obtain a flow rate of approximately 200 milliliters per minute, uniformly and smoothly press the bulb every 8 seconds for 1 minute.

13. To determine the precise volume of the Nextteq Aspiration Bulb Pump, fill the bulb with water and empty the contents into a measuring cup. Next, calculate the number of compressions per unit of time necessary to generate the desired flow rate.
14. Perform the irritant smoke qualitative respirator fit testing in accordance with OSHA 29 CFR 1910.134.
15. Before commencing the Irritant Smoke Qualitative Respirator Fit Testing, the fully trained, qualified, and professional commercial, industrial, military, or government test administrator shall perform the following:
  - A. Provide the test subject with a description of the test and instruct the test subject in the test subject's duties and responsibilities before, during, and after the test in accordance with OSHA 29 CFR 1910.134 and Nextteq specifications, operating instructions, and warnings and Nextteq Instructions and Warnings included with the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5).
  - B. Ensure the test subject has read, understands, and explicitly agrees to comply with all the duties, responsibilities, and provisions of the OSHA irritant smoke qualitative fit testing protocol that apply to the test subject per OSHA CFR 1910.134 as well as all warnings and instructions incorporated in Nextteq's Irritant Smoke Tube Kit Manual and Nextteq Instructions and Warnings included with the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or



P/N NX9501-5).

- C. Instruct the test subject to minimize his or her exposure to the smoke and keep his or her eyes tightly shut during the test.
- D. Instruct the test subject to immediately step away from the smoke and into fresh, clear air in the event of any exposure or response to irritant smoke.
- E. Instruct the test subject to demonstrate the following:
  - I. The proper method for donning the respirator
  - II. The proper method for securing a snug respirator fit
  - III. The proper method for manually checking the respirator fit
  - IV. Explain to the test subject that the test subject should not participate in an Irritant Smoke Qualitative Respirator Fit Test if the test subject:
    - a. Has a pre-existing respiratory, cardiovascular, bronchial, or sinus medical condition.
    - b. Is under a physician's care for a respiratory, cardiovascular, or bronchial ailment; sinus, nasal, or ear infection; or impaired immune system; or asthma.
    - c. Is allergic to or hypersensitive to hydrogen chloride, stannic chloride, stannic oxide, stannic dioxide, tin tetrachloride, tin compounds, hydrochloric acid, or metal chloride or chemicals in general.

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- F. Ensure that the test subject does not have any hair growth, beard, mustache, or sideburns which cross the respirator sealing surface or any type of apparel or equipment that interferes with a satisfactory respirator fit.

## **B. Steps for Smoke Generation**

1. Break the tip off a fresh tube by bending each tube end in the tube tip breaker supplied with the Nextteq Irritant Smoke Tube Kit (P/N NX9500-10 or NX9500-5).
2. Place the black cap on one broken end of the smoke tube.
3. Pointing the tube end with the black cap away from you, insert the other end of the tube into the aspiration bulb pump, being careful not to compress the bulb.
4. Immediately before commencing use, remove the black cap from the end of the smoke tube.

**NOTE:** Retain the black cap for later use.

5. Holding the pump at half arm's length away from you, place the protective tube sheath over the jagged end of the smoke tube and aim the smoke tube tip away from you and other people in the area.

**CAUTION:** Prior to compressing the bulb, ensure the smoke tube is aimed in the correct direction and at the correct distance from the test subject.

7. Perform the Sensitivity Check and/or the Respirator Fit Test in strict compliance with OSHA 29 CFR 1910.134 and any other applicable regulations. A detailed Sensitivity Check Protocol (P/N NX90401) is available on Nextteq's website ([www.nextteq.com](http://www.nextteq.com)).
8. When testing is complete, carefully remove the tube from the aspiration bulb pump and remove the

protective tube sheath. Place a black cap on each end of the broken tube. Store in a secure, dry, cool space away from direct light and out of the reach of children.

9. When the smoke tube is exhausted, dispose of the tube in accordance with all Federal, State, and Local laws and regulations as well as the Warnings in section III and the SDS in Section V of this manual.

IF YOU HAVE ANY QUESTIONS ABOUT THE OPERATION, PERFORMANCE, OR USE OF THE NEXTTEQ IRRITANT SMOKE TUBE KIT, NEXTTEQ IRRITANT SMOKE TUBES, NEXTTEQ ASPIRATION BULB PUMP, THIS TEST PROTOCOL, OR THE NEXTTEQ INSTRUCTIONS OR WARNINGS, NEXTTEQ CAN BE CONTACTED AT ONE OF THE FOLLOWING TELEPHONE NUMBERS: TOLL FREE 877-312-2333 OR LOCAL NUMBER 813-249-5888.

## **VII. OPERATING INSTRUCTIONS FOR AIRFLOW INDICATION**

### **A. Required Steps before Smoke Generation**

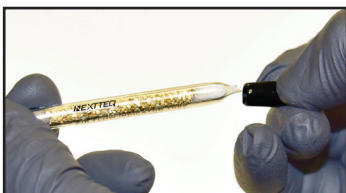
1. Before using this product, read, understand, and comply with all labels, warnings, instructions, and other literature accompanying the product, including but not limited to this manual, the SDS (also available as P/N NX90040) in this manual, and Nextteq Instructions and Warnings included in the box of Nextteq Irritant Smoke Tubes (P/N NX9501-10 or P/N NX9501-5).
2. Inspect this product and associated equipment for damage or defects before using.

## B. Steps for Smoke Generation

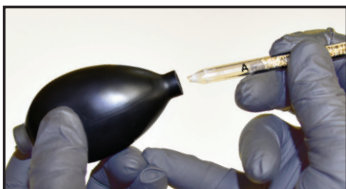
1. Determine where the airflow indication is needed.
2. Break the tip off a fresh tube by bending each tube end in the tube tip breaker supplied with the Nextteq Irritant Smoke Tube Kit (P/N NX9500-10 or P/N NX9500-5).



3. Place the black cap on one broken end of the smoke tube.



4. Pointing the tube end with the black cap away from you, insert the other end of the tube into the aspiration bulb pump, being careful not to compress the bulb.





5. Immediately before commencing use, remove the black cap from the end of the smoke tube.



**NOTE:** Retain the black cap for later use.

6. Holding the pump at half arm's length away from you, aim the smoke tube tip away from you and other people in the area.

**CAUTION:** Prior to compressing the bulb, ensure the smoke tube is aimed in the correct direction of the area being studied.

7. Slowly, gently, and uniformly compress the bulb at a controlled, steady rate until the bulb is completely compressed.
8. A white aerosol is emitted allowing visualization of air currents.

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IF YOU HAVE ANY QUESTIONS ABOUT THE OPERATION, PERFORMANCE, OR USE OF THE NEXTTEQ IRRITANT SMOKE TUBE KIT, NEXTTEQ IRRITANT SMOKE TUBES, NEXTTEQ ASPIRATION BULB PUMP, THIS TEST PROTOCOL, OR THE NEXTTEQ INSTRUCTIONS OR WARNINGS, NEXTTEQ CAN BE CONTACTED AT ONE OF THE FOLLOWING TELEPHONE NUMBERS: TOLL FREE 877-312-2333 OR LOCAL NUMBER 813-249-5888.

## **VIII. TROUBLESHOOTING**

1. If the Nextteq Irritant Smoke Tube does not emit smoke when air is forced into the tube, the tube may be clogged due to water vapor absorption. To correct this problem, place the tube in a warm, flame-free, moisture-free environment to dry out the tube.

**WARNING:** Heating the end plugs of the tube with a match or lighter to accelerate drying is not recommended, as this heat may generate toxic fumes.

## **IX. STORAGE AND DISPOSAL**

1. A Nextteq Irritant Smoke Tube may be used as many as 40 times depending upon environmental conditions and the skill of the administrator.
2. Upon the completion of each Sensitivity Check, a fit testing, or an airflow indication exercise, if the smoke tube has not been consumed and when testing is complete, the administrator shall, with the smoke tube tip pointed away from the administrator and others, slowly compress the pump bulb. When the pump bulb is fully compressed, place a cap over the exposed end of the smoke tube. Do not remove the aspiration bulb pump. Store the partially consumed smoke tube with the cap affixed to one end and the compressed aspiration bulb pump affixed to the other end of the smoke tube.
3. When the smoke tube is consumed, or is being disposed of prior to being consumed, gently remove the aspiration bulb pump from the smoke tube, being careful not to compress the bulb. Turn the bulb upside down over an appropriate waste receptacle and gently shake the bulb to discard any residual material from the irritant smoke tube. Neutralize and dispose of any residual smoke tube material and the smoke tube in accordance with federal, state, and local regulations and laws.
4. Store the Nextteq Irritant Smoke Tube Kit, the Nextteq Irritant Smoke Tubes, and the Nextteq Aspiration Bulb Pump in a safe, secure, dry, cool space away from direct light and out of the reach of children.

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## **X. WARRANTY**

### **DISCLAIMER OF WARRANTIES**

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## XI. NEXTTEQ VERIFIT® IRRITANT SMOKE GENERATORS FOR RESPIRATOR FIT TESTING

The VeriFit Irritant Smoke Generator is manufactured by Nextteq International, LLC in the U.S.A. The patented plastic design integrates all traditional fit testing kit components into one convenient device. The small bellows size provides the optimum amount of smoke for fit testing, yet minimizes the risk of overexposure.

Unlike other test methods, there is no need for chamber construction, nebulizers, electric pumps, mixing jars, batteries, special test masks, mask probes, or testing hoods. There are also no parts to calibrate, warm up, sterilize, or clean.

The VeriFit Irritant Smoke Generator comes ready to use. Everything you need for immediate qualitative fit testing is in one sleek, safe, and convenient smoke generator.

### OSHA COMPLIANT



Available in:  
 VeriFit 6-pack  
 P/N 90095  
 VeriFit 10-pack  
 P/N 50811000-310N





BETTER TECHNOLOGY. BETTER QUALITY.  
BETTER VALUE.

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February 2021

Nextteq Irritant Smoke Tube Kit Instruction Manual

P/N NX9505

Nextteq Irritant Smoke Tube Kits are assembled by Nextteq International LLC in the United States of America.

Images and drawings used in this manual are for explanatory purposes only and may not be identical with the actual device in their appearance, size, color, or positions.

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