



North Safety Products
2000 Plainfield Pike
Cranston, RI 02921-2019

TO OUR VALUED CUSTOMER

North Safety Products Purchases its 770047 Smoke Irritant Tubes from NEXTTEQ LLC.

A copy of NEXTTEQ LLC MSDS for that product is on the next five pages.

NEXTTEQ LLC

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MSDS Form C 101

Revision: 8/02
Part Number: 9501
Description: Smoke Tube
Page: 1 of 4

Part I – Material Identification**Material Name:** Smoke Tube**Chemical Name & Synonyms:** Stannic Chloride (CAS No. 7646-78-8, UN No. 1827)

- Tin tetrachloride, Tin(IV) Chloride
- Air Flow Indicator Tube
- Irritant Smoke Tube
- Gastec Smoke Tester Tube
- VeriFit Tube – VeriFit is a registered trademark of Nextteq LLC.

Chemical Family: Metal Chloride**Formula:** SnCl₄**Part II – Ingredients & Hazards**

Stannic chloride reacts with ambient humidity to liberate a white smoke consisting of hydrogen chloride (HCL) and tin compounds. Smoke tube is a mixture of vermicutite and stannic chloride filled in a glass tube. Reacts with turpentine, alcohols, and amines causing fire hazard.

%Ca 100
(Comb.)**TLV**5 ppm ceiling for HCL.
2 mg/M³ for tin compounds.**Part III – Physical Data**

Physical Data for HCl Boiling Point, 1 ATM, °F (°C): -121 (-85)*

Vapor Pressure, mm Hg: 41.6 @ 20 °C*

Solubility in Water: 37% by weight @ room temperature*

Vapor Density (Air=1)= 1.268*

*Physical data for HCL

Specific Gravity: N/A

Evaporation Rate: N/A

Appearance & Odor: Hydrogen chloride is a colorless, corrosive, and toxic gas with a pungent odor. It fumes strongly in moist air forming white hydrochloric acid fume. The emitted tin compound has a strong irritating odor.

Part IV – Fire & Explosive Data

Flash Point & Method	Auto Ignition Temp. °C	Flammability Limits In Air Volume %	Lower	Upper
			None	None
None	None		None	None

Extinguishing Media: Suitable for surrounding fire.

Special Firefighting Produces: Firefighters should use SCBA units to protect against possible toxic decomposition products and wear protective clothing. If there is a fire around the storage of the tubes, move the tubes or cool the tubes by giving a large amount of water. If a lot of the tubes are broken, do not put water on the glass tubes.

Unusual Fire & Explosion Hazards: Fire encompassing the tubes will emit toxic fumes of chlorides.

Part V – Health Hazard Information

Applicable TLV's: HCl= 5 ppm ceiling (2001 TLV Book). OSHA PEL= 5ppm ceiling
Tin compounds= 2 mg/m³ as tin (2001 TLV Book). OSHA PEL= 2 mg/m³

Acute toxicity: Rat: LD₅₀ 1530 mg/kg
Rabbit: LD₅₀ 2470, mg/kg

Effects of Overexposure: Hydrogen chloride gas (and the acid fume) is corrosive. Prolonged inhalation of gas concentrations moderately above the TLV can irritate nasal passages. Inhalation of higher concentrations (above 50 ppm) for short period 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 100 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.

Emergency & First Aid Procedure:

Eyes: Immediately flush eyes with large amounts of clean running water for at least fifteen minutes, occasionally lifting the lower and upper lids to flush the area under the lids. Contact a physician.

Skin: Flush the affected areas with large amounts of clean running water for at least fifteen minutes. Get medical help in case of large area contact or if irritation persists.

Inhalation: Remove victim to fresh air. Restore and/or support breathing as necessary. Provide oxygen therapy for persistent coughing or if breathing is difficult. Keep victim warm and at rest. Get medical help.

Swallowed: If material containing this chemical is swallowed get medical help immediately.

ASSISTANCE: IF THE USER IS CONFUSED ABOUT THE PROPER USE OF THE SMOKE TUBE, ANY INSTRUCTIONS, WARNINGS, LABELS OR THE MANUAL, THE USER SHOULD CONTACT NEXTTEQ LLC FOR ASSISTANCE PRIOR TO USING THE PRODUCT. NEXTTEQ'S TOLL FREE TELEPHONE AND FAX NUMBERS ARE: (877) 312-2333 AND (877) 312 2444.

Part VI – Reactivity Information

Stability: HCl is a stable compound. It does not undergo hazardous polymerization, however HCl can catalyze some polymerization of other compounds.

Conditions to avoid: Incompatible materials include alkaline, amines, metal oxides, hydroxides, copper, brass, zinc, and other metals and turpentine and alcohols.

Hazardous Decomposition Products: When heated to decomposition, the smoke tubes will emit chloride fume.

Part VII – Spill, Leak & Disposal Procedures

Spill Procedure: Does not apply. (Refer to below)

Broken tube Cleanup: Broken glass tubes should not be picked up with bare hands.

Disposal Procedure: Soak used tubes in large volume of water and neutralize with sodium carbonate or equivalent alkaline substance. Dispose of tubes via landfill. Consult local authorities to assure compliance with all local, state, and federal regulations.

Part VIII – Special Protection Information

Protective Equipment: No respirator protection is required if local ventilation is adequate. However, Respiratory protection is recommended during normal use. Safety glasses with side shields should be worn to minimize eye contact. Safety gloves are not necessary for normal use, although skin contact with HCl and broken glass tubes should be avoided and therefore safety gloves are recommended.

When conducting irritant smoke respirator fit testing, test only respirator and cartridge types specified in 29CFR1910.134(appendix A) in the appropriate test protocol. Persons conducting such tests should use a respirator with HEPA filter or equivalent NIOSH approved filter suitable for dust, fumes, mists and acid gases.

Part IX – Special Precautions & Comments

Dangerous To Life: Read, understand and comply with all instructions, warnings and 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 to be sold to, only for use by, and only for storage by trained, qualified, professional industrial or commercial users.

Handling & Storage: Store in the original container in a cool dry place. Protect against light, heat, moisture and physical damage.

Other Precautions: Avoid eye and skin contact with smoke. Do not directly breath the smoke. Avoid the build up 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 unprotected face or eyes. Test only one person at a time. Do not blow smoke between test subjects. 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 before eating, drinking, smoking, applying cosmetics, or inserting or removing contact lenses. Use NIOSH approved HEPA plus acid gas filters/respirators or equivalent filters/respirators specified by NIOSH when using this product for fit testing.

Do not use this product for respirator fit testing or a "Sensitivity Check" if the test subject has pre-existing respiratory, cardiovascular, or bronchial medical condition, is under a physician's care for a respiratory, cardiovascular, or bronchial problems or is being treated for allergies, hypersensitivity, asthma or is allergic to or hypersensitive to hydrogen chloride, stannic chloride, stannic oxide, stannic dioxide, tin tetrachloride, tin compounds, hydrochloric acid or metal chloride.

Part X – DISCLAIMER OF WARRANTIES

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