

NEXTTEQ LLC 8406 Benjamin Rd., Suite J Tampa, Florida 33634 USA Toll free Tel: (877)312-2333 / (813)249-5888 Toll free Fax: (877)312-2444 / (813)249-0188		MSDS P/N 50811320-340N Rev. D 5/2007 Revision: May 10, 2007		
Part I – Material Identification				
Material Name: VeriFit® Irritant Smoke Generator (P/N 50811000-310N) Chemical Name: Stannic Chloride (CAS No. 7646-78-8, UN No. 1827) Synonyms: a) Tin tetrachloride, Tin (IV) Chloride b) Air Flow Indicator Tube c) Irritant Smoke Generator Formula: SnCl4 Chemical Family: Metal Chloride				
Part II – Ingredients & Hazards				
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.		Exposure Limits		
		<u>Tin Inorganic Compounds</u> ACGIH – TLV: TWA 2 mg/m ³ OSHA PEL: 2 mg/m ³ <u>Hydrogen Chloride</u> OSHA PEL: Ceiling 5 ppm ACGIH-TLV: STEL Ceiling 2 ppm Listed in the 2004 ACGIH-TLV handbook with a carcinogenicity notation of A4, which is defined as “Not classifiable as a human carcinogen”.		
Part III – Physical Data				
<u>Stannic Chloride</u>		<u>Hydrogen Chloride</u>		
Appearance: Colorless liquid Boiling Point: 237.2°F Melting Point: -22.36°F Volatility: N/A Specific gravity: 2.23 g/cm ³ (at 68°F) Solubility: NA N/A = Not Available		Appearance: Colorless to slightly yellow gas, irritating odor Boiling Point: -121°F Melting Point: NA Specific Gravity: N/A Vapor Pressure: 40.5 atm Solubility in Water: 37% by weight @ room temperature Vapor Density: (Air=1) = 1.268 N/A = Not Available		
Part IV – Fire & Explosive Data				
Flashpoint & Method:		Autoignition Temp. °F:		Flammability Limits In Air Volume %:
N/A		N/A		Lower: Upper:
				N/A N/A
Extinguishing Media: Use extinguishing media suitable for the material that is burning. 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 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. Unusual Fire and Explosion Hazards: Fire encompassing the tubes will emit toxic fumes of chlorides. Violently reacts with water to generate heat. Generates smoke with moisture in air. Mixing with alkali metal may result in an explosion. N/A = Not Available				
Part V – Health Hazard Information				
Exposure Limits Information: <u>Tin Inorganic Compounds</u> ACGIH-TLV: TWA 2 mg/m ³ OSHA PEL: 2 mg/m ³		<u>Hydrogen Chloride</u> OSHA PEL: Ceiling 5 ppm ACGIH-TLV: STEL Ceiling 2 ppm Listed in the 2004 ACGIH-TLV handbook with a carcinogenicity notation of A4, which is defined as “Not classifiable as a human carcinogen”.		

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Part V – Health Hazard Information (continued)	
Toxicological Information: <u>Stannic Chloride</u> Skin Corrosion: May result in extreme irritation and burns to the skin. Irritation (Skin, Eyes): Eye contact may result in extreme irritation to the eyes. Acute Toxicity: When Inhaled, irritates nose, throat, and respiratory tract.	<u>Hydrogen Chloride</u> Acute Toxicity: When Inhaled, irritates nose, throat, and respiratory tract.
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. Emergency & First Aid Procedure: Eyes: Immediately flush eyes with large amounts of clean running water for at least 15 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 and wash with soap for at least 15 minutes. Get medical help in cases of large area contact or if irritation persists. Inhalation: Remove test subject to fresh air. Restore and/or support breathing as necessary. Provide oxygen therapy for persistent coughing or if breathing is difficult. Keep test subject warm and at rest. Get medical help. Swallowed: If swallowed, get medical help immediately. ASSISTANCE: IF THE USER IS CONFUSED ABOUT THE PROPER USE OF THE SMOKE TUBE / GENERATOR, ANY INSTRUCTIONS, WARNINGS, LABELS, OR THE MANUAL, THE USER SHOULD CONTACT NEXTTEQ LLC FOR ASSISTANCE PRIOR TO USING THE PRODUCT. NEXTTEQ'S TOLL-FREE NUMBER IS: (877) 312-2333; LOCAL NUMBER IS (813) 249-5888.	
Part VI – Reactivity Information	
Stability: SnCl ₄ 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. Conditions to avoid: Reacts with turpentine, alcohols, and amines causing a potential fire hazard. 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 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 law and regulations, including but not limited to EPA regulations.	
Part VIII – Special Protection Information	
Protective Equipment: For irritant smoke qualitative fit testing, wear respiratory protection in accordance with 29 CFR 1910.134 and 42 CFR Part 84 and good practice. Wear safety goggles to minimize eye contact and keep eyes closed during exposure to irritant smoke. Wear chemical resistant safety gloves with resistance to broken glass in accordance with NIOSH and OSHA standards and good practice.	

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Part IX – Special Precautions & Comments

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.

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

Shipping Information: Ship this product according to local, state, and federal laws and regulations, including, but not limited to, federal Department of Transportation regulations in DOT 49 CFR.

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 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 is present:

- The test subject has pre-existing respiratory, cardiovascular, bronchial, or sinus medical condition.
- The test subject is under a physician's care for respiratory, cardiovascular, bronchial, or sinus problems.
- The test subject is being treated for allergies, hypersensitivity, or asthma or has a pre-existing allergy, hypersensitivity, or other condition.
- 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.

Part X – DISCLAIMER OF WARRANTIES

THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS DOCUMENT ARE PROVIDED FREE WITHOUT CHARGE SOLELY FOR USE BY QUALIFIED INDUSTRIAL OR COMMERCIAL USERS AT THEIR DISCRETION AND RISK. READ, UNDERSTAND, AND COMPLY WITH ALL INSTRUCTIONS, WARNINGS, LABELS, AND MANUALS BEFORE USING AND WHILE USING GASTEC CORPORATION'S OR NEXTTEQ LLC'S PRODUCTS. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS CONTAINED IN THIS DOCUMENT ARE BASED UPON DATA AND OTHER INFORMATION THAT NEXTTEQ LLC BELIEVES TO BE CORRECT AND COMPLETE AS OF THE DATE ISSUED, BUT THE ACCURACY AND COMPLETENESS THEREOF IS NOT GUARANTEED AND NO WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE INFORMATION OR RECOMMENDATIONS CONTAINED IN THIS DOCUMENT. THIS INFORMATION IS NOT INTENDED AS A LICENSE TO OPERATE UNDER OR A RECOMMENDATION TO PRACTICE OR TO INFRINGE UPON ANY PATENT, TRADEMARK, TRADE SECRET, OR PROPRIETARY INFORMATION OF NEXTTEQ LLC, GASTEC CORPORATION, OR OTHERS COVERING ANY PROCESS, COMPOSITION, OR MATTER, OR USE. THE USER IS RESPONSIBLE FOR DETERMINING WHETHER THE PRODUCT OR COMPONENT IS FIT FOR A PARTICULAR PURPOSE AND SUITABLE FOR THE USER'S METHOD OF USE OR APPLICATION. THE TEST SUBJECTS' SENSITIVITY TO STANNIC CHLORIDE VARIES. THE SIZE OF DIFFERENT MANUFACTURERS' ASPIRATION BULB PUMPS OR BELLOWS PUMPS VARIES. THE PACKING DENSITY AND CHEMICAL PURITY OF DIFFERENT MANUFACTURERS' IRRITANT SMOKE TUBES VARY. THE SKILL AND TRAINING OF TEST ADMINISTRATORS VARY. GIVEN THE VARIETY OF FACTORS THAT CAN AFFECT THE USE AND APPLICATION OF A PRODUCT OR COMPONENT, SOME OF WHICH ARE UNIQUELY WITHIN THE USER'S KNOWLEDGE OR CONTROL, IT IS ESSENTIAL THAT THE USER EVALUATE THE PRODUCT OR COMPONENT TO DETERMINE WHETHER THE PRODUCT OR COMPONENT IS FIT FOR A PARTICULAR PURPOSE AND ADDITIONALLY SUITABLE FOR USER'S METHOD OF USE OR APPLICATION AND SUITABLE FOR THE TEST SUBJECT. NEXTTEQ LLC'S WARRANTY IS SET FORTH IN NEXTTEQ LLC'S SALES TERMS AND CONDITIONS MADE BY NEXTTEQ LLC AND ACCEPTED BY BUYER IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY OTHER AFFIRMATION OF FACT, RECOMMENDATION, OR PROMISE THAT RELATES TO THE GOODS, THIS DOCUMENT, OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, WHICH ARE EXPRESSLY DISCLAIMED. THIS PRODUCT OR COMPONENT IS ONLY FOR SALE, FOR USE BY, AND STORAGE BY A TRAINED, QUALIFIED, PROFESSIONAL, COMMERCIAL, OR INDUSTRIAL USER. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION SET FORTH IN NEXTTEQ LLC'S SALES TERMS AND CONDITIONS. NEXTTEQ LLC SHALL NOT BE LIABLE FOR DIRECT OR INDIRECT CONSEQUENTIAL, INCIDENTAL, STATUTORY, PUNITIVE, OR OTHER DAMAGES OR LOSS RESULTING FROM THE PROPER OR IMPROPER USE OF EITHER THE PRODUCT OR COMPONENT SOLD BY NEXTTEQ LLC OR ANY INFORMATION OR RECOMMENDATION CONTAINED IN THIS DOCUMENT.

Part XI – LIMITATION OF DAMAGES

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THE PARTIES HERETO AGREE THAT BUYER'S SOLE AND EXCLUSIVE DAMAGES FOR SELLER'S BREACH SHALL BE LIMITED TO THE PRICE OF THE GOODS SOLD AND THAT ALL OTHER DAMAGES, INCLUDING BUT NOT LIMITED TO, CONSEQUENTIAL, INCIDENTAL, EXEMPLARY, PUNITIVE, AND STATUTORY DAMAGES ARE EXCLUDED. THE PARTIES FURTHER AGREE THAT THIS LIMITATION OF DAMAGES PROVISION IS INDEPENDENT OF THE LIMITATION OF REMEDIES PROVISION AND WILL BE ENFORCEABLE EVEN IF A REMEDY FAILS ITS ESSENTIAL PURPOSE.

Part XII – LIMITATION OF REMEDIES

THE PARTIES HERETO AGREE THAT BUYER'S SOLE AND EXCLUSIVE REMEDY AGAINST THE SELLER SHALL BE, AT SELLER'S OPTION, (1) REPAIR OF THE DEFECTIVE GOODS (2) REPLACEMENT OF THE DEFECTIVE GOODS OR (3) REPAYMENT OF THE PURCHASE PRICE OF THE DEFECTIVE GOODS. IF SELLER IS UNABLE TO PROVIDE ANY SELECTED REMEDY, SELLER MAY ELECT TO PROVIDE BUYER WITH ANY REMAINING EXCLUSIVE REMEDY UNTIL ALL EXCLUSIVE REMEDIES HAVE BEEN EXHAUSTED. THE NUMBER OF REMEDIES PROVIDED AND THE ORDER IN WHICH THE REMEDIES ARE PROVIDED SHALL BE DETERMINED SOLELY BY THE SELLER. THIS EXCLUSIVE REMEDY IS ONLY AVAILABLE TO THE BUYER IF BUYER RETURNS THE DEFECTIVE GOODS TO SELLER FOR INSPECTION AND SELLER'S INSPECTION DETERMINES A DEFECT EXISTS AND THAT THE DEFECT WAS NOT CAUSED IN WHOLE OR IN PART BY THE BUYER OR BY ANYONE'S USE, OPERATION, STORAGE, MAINTENANCE, REPAIR, HANDLING, OR TRANSPORTATION OF THE DEFECTIVE GOODS WHICH WAS INCONSISTENT WITH SELLER'S OR THE MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS, OR WARNINGS.