

1. Identification

Product identifier Fit Test Kit, Irritant Smoke

Other means of identification
Product code VeriFit® 770046, 140090, 770040, 770047, 140038

Recommended use Respirator Fit Testing

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name: Honeywell Safety Products USA

Address: 900 Douglas Pike
 Smithfield, RI 02917

Telephone: 800 873 5242

Contact Person hsptechsupport@honeywell.com

E-mail: msds@chemtrec.com

Emergency telephone number: +1-703-741-5500 for USA/Canada

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Environmental hazards

Hazardous to the aquatic environment, acute hazard	Category 3
Hazardous to the aquatic environment, long-term hazard	Category 3

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention	Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Contact with water liberates toxic gas.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Stannic Chloride		7646-78-8	100

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not use mouth-to-mouth method if victim inhaled the substance. For breathing difficulties, oxygen may be necessary. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Causes digestive tract burns. Irritating to mucous membranes. May cause respiratory irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Edema. Headaches, nausea and vomiting.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Excessive heat may be released on contact with water. Fire hazard caused indirectly by release of Hydrogen Chloride gas on exposure of broken tubes to moist air. Contact with water emits corrosive HCl gas and tin compounds.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire fighting equipment/instructions

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.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Keep unnecessary personnel away. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Containers must be labeled.

Small Spills: Absorb in vermiculite, dry sand or earth and place into containers. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

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.

Provide adequate ventilation. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store at temperature below 40°C. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
Fit Test Kit, Irritant Smoke	PEL	2 mg/m3
Components	Type	Value
Stannic Chloride (CAS 7646-78-8)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Material	Type	Value
Fit Test Kit, Irritant Smoke	TWA	2 mg/m3
Components	Type	Value
Stannic Chloride (CAS 7646-78-8)	TWA	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
Fit Test Kit, Irritant Smoke	TWA	2 mg/m3
Components	Type	Value
Stannic Chloride (CAS 7646-78-8)	TWA	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Use only the pump(s) at the flow rates specified in OSHA CFR 1910.134 and 29 CFR 1910.139. If the pump is operated at non-specified flow rates it could increase the smoke and fume concentrations and cause serious injury or death.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear tight-fitting goggles or face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Skin protection	
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Sealed ampoule of liquid stannic chloride (<0.5 ml).
Color	Colorless.
Odor	Characteristic.
Odor threshold	Not determined.
pH	Not determined.
Melting point/freezing point	-28 °F (-33.33 °C)
Initial boiling point and boiling range	237 °F (113.9 °C)
Flash point	Not applicable.
Evaporation rate	Not determined.
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not determined.
Explosive limit - upper (%)	Not determined.
Vapor pressure	24 hPa (18 mm Hg) at (20°C / 68 F)
Vapor density	Not determined.
Relative density	Not determined.
Solubility(ies)	
Solubility (water)	Not miscible or difficult to mix.
Solubility (solvents)	0% (organic solvents).
Partition coefficient (n-octanol/water)	Not determined.
Auto-ignition temperature	Not determined.
Decomposition temperature	Not determined.
Viscosity	Not determined.
Other information	
Density	2.23 g/cm ³ (18.609 lbs/gal) at (20°C / 68 F)
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product reacts with water and will generate heat.
Chemical stability	Reacts with water and moisture in the air to form a smoke of HCL and tin oxychlorides.
Possibility of hazardous reactions	Will not occur, but HCL may catalyze the polymerization of other compounds.
Conditions to avoid	Contact with incompatible materials. Do not expose to air until use.

Incompatible materials Bases. Ethylene Oxide. Water, moisture. Alcohols. Metals. Amines. Metal oxides. Turpentine.

Hazardous decomposition products Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact Causes severe skin burns.

Eye contact Causes serious eye damage.

Ingestion Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Causes digestive tract burns. Irritating to mucous membranes. May cause respiratory irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Edema. Headaches, nausea and vomiting.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

Further information Stannic Chloride is considered highly toxic and is corrosive to the skin, eyes, and respiratory tract. Contact with moisture releases hydrochloric acid fumes, which are also highly corrosive. Contact with moist air also releases tin compounds, which may be toxic. Symptoms of inhalation exposure include severe coughing, wheezing, shortness of breath, headaches, nausea, and vomiting. Produces lung irritation and damage to the mucous membranes of the upper respiratory tract. In extreme cases, pulmonary edema can occur. Exposure to skin causes irritation or tissue burns. May be fatal if swallowed or on excessive contact.

Users are not exposed to the hazardous components until the tubes are broken. Read, understand and comply with all labels, warnings and instructions before use. Failure to comply may cause serious injury or death.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available on bioaccumulation.

Mobility in soil The product is insoluble or slightly soluble in water. Expected to have low mobility in soil.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1827
UN proper shipping name Stannic chloride, anhydrous
Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Label(s) 8
Packing group II
Environmental hazards
 Marine pollutant No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions B2, IB2, T7, TP2
Packaging exceptions 154
Packaging non bulk 202
Packaging bulk 242

IATA

UN number UN1827
UN proper shipping name Stannic chloride, anhydrous
Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Label(s) 8
Packing group II
Environmental hazards No
ERG Code 8W
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1827
UN proper shipping name STANNIC CHLORIDE, ANHYDROUS
Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Label(s) 8
Packing group II
Environmental hazards
 Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

General information

Note: Product meets requirements for Dangerous Goods in Excepted Quantities (all transport modes). It may be eligible for Excepted Quantity exemption, dependant on quantity of units within the outer package.

15. Regulatory information**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA).**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

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US. New Jersey Worker and Community Right-to-Know Act

Stannic Chloride (CAS 7646-78-8)

US. Pennsylvania Worker and Community Right-to-Know Law

Stannic Chloride (CAS 7646-78-8)

US. Rhode Island RTK

Stannic Chloride (CAS 7646-78-8)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Stannic Chloride (CAS 7646-78-8)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes

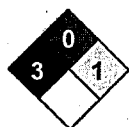
Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 01-October-2015
Revision date 14-December-2018
Version # 02
NFPA ratings



Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Gas Generation Tube Data Sheet Irritant Smoke

Color : A white smoke is generated. The tube changes from a dark reddish brown to a lighter reddish brown. The tube can be used with the supplied rubber caps.

Reagent Type : Stannic chloride

Reaction Principle : $\text{SnCl}_4 + \text{H}_2\text{O} \rightarrow \text{Stannic oxychlorides} + 2\text{HCl}$

Humidity Range : 10- 95%RH. The smoke generating life increases about 10% at 20%RH and decreases about 10% at 80%RH (incoming air humidity).

Temperature Range : 0 – 40 degree C (32 – 104 degree F). As temperature decreases the smoke lasts longer and is less intense.

Storage Life and Conditions : 2 years in darkness at 5 – 25 degree C (40 – 77 degree F)

CAUTIONS ON USE :

- Read, understand and comply with all labels, warnings and instructions accompanying these tubes before use. Failure to comply may cause serious injury or death.
- For use in respirator fit testing according to OSHA 29CFR1910.134 (Appendix A) , OSHA 1910.139 and CSA Z94.4-02.
- Wear safety glasses and gloves to protect against chemical exposure and flying glass. Wear a respirator when exposed to smoke. Vapors are corrosive to skin and overexposure can result in serious injury or death.
- DO NOT inhale smoke directly. If inhaled enough to cause coughing, remove victim to fresh air. If coughing persists, provide oxygen and contact a physician.
- Use only in a well ventilated area. DO NOT use in a confined space.
- DO NOT use under a respirator fit testing hood or other enclosed space because fume concentrations may build up to levels that can cause serious injury or death.
- Avoid contact of smoke with skin. DO NOT direct smoke stream directly at the skin during fit testing. If smoke contacts skin for prolonged time, flush with copious amounts of water for 15 minutes and contact a physician.
- Use only the pump(s) at the flow rates specified in OSHA 29CFR1910.134, 1910.139 and CSA Z94-4.02 If the pump is operated at non-specified flow rates it could increase the smoke and fume concentrations and cause serious injury or death.
- DO NOT use smoke tubes in areas that may contact food or food eating areas.
- DO NOT use fit testing on persons with pre-existing respiratory or related medical conditions or are allergic to tin compounds or hydrochloric acid.

Caution : Dispose of spent or expired tubes according to local regulations. Each tube contains 0.7 g of stannic chloride before use. Tube contents generate hydrochloric acid on contact with water.