

# Air Current Tester Instructions



## WHAT IT IS

A sealed red Teflon plastic tube 1-1/4" in diameter and 7" long with a 1/4" Teflon connector, a 2" rubber hose with cap/nozzle "T". A 10 ml glass vial of smoke generating chemical (double the regular size) is pre-installed inside the tube at the factory. No mess; Just bend to activate. Ideal for locating leaks and detecting air currents. Shelf life, unlimited. Good for 1000+ puffs or one year when activated (with cleaning), then discard.

Your Air Current Tester includes: 1 loaded Air Current Tester with cap/nozzle, 1 storage tube (with absorption packet, 2 cleaner sticks, 2 spare nozzles, 1 spare 3" rubber hose), MSDS instructions and this Model 4 instruction sheet.

## BENEFITS OVER CONVENTIONAL RECHARGEABLE SMOKE GUNS

- o Clean
- o Indoor Activation
- o Unbreakable No Glass Vials of Chemical
- o Professional appearance
- o Low Maintenance

## REMOVE PUFFER FROM STORAGE TUBE

Cut or remove tape where noted: "Open This End", and twist off cap.

Do Not open where noted: "SPARES" & "Spare Cap, Nozzle, "T" and Hose", unless spares are needed.

## ACTIVATE NEW AIR CURRENT TESTER

Remove the cap/nozzle "T".

Point the nozzle up.

Place thumbs 3" from end caps and 1/2" apart.

Bend the red tube till the internal glass vial breaks.

Hold the nozzle up for one minute. (To allow the liquid to flow into the internal wick.)

Hold the puffer horizontally or up for next 10 minutes. (To allow the liquid to flow into the internal wick.)

Useable immediately. (Although it may take several hours for the smoke to flow at its maximum).



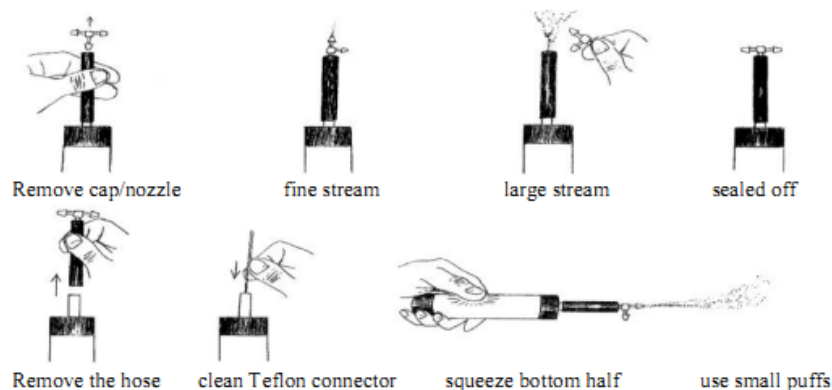
Bend to Activate-Hold Upright

**Use at your own risk.** Retrotec does not approve the air current testers for use in any application and does NOT maintain they meet any safety standards whatsoever. The MSDS describes the chemical inside the air current tester which can only be accessed in small puffs as it mixes with air which reduces exposure to the chemical but does not reduce risk completely. Physical damage to the tester or the case will increase the risk. Even though over 250,000 testers have been used since 1985 and no harmful effects on humans have been reported, the chemical is corrosive and should be treated as such. Numerous electronic devices have been damaged from the corrosive smoke which is why an airtight tube is provided and why Retrotec manufactures a tool case with an outside pocket to reduce contact with metal items.

*If corrosive effects are a concern, use Retrotec's Dragon Puffer that uses vaporized oil on a heating element similar to fogging machines used for staged events and special effects.*

## OPERATING THE PUFFER

- 1) Remove the cap/nozzle "T" outdoors or in front of an exhaust fan because pressure can build up inside the puffer creating a smoke cloud upon first opening the nozzle cap.
- 2) Gently squeeze the last 4" of the red tube furthest from the nozzle to get a smoke stream. Direct small puffs toward suspected leaks.
- 3) Clean the nozzle with the wood stick supplied or a toothpick or wire every hour or as required. Wipe goop from the tip with a dry paper towel. Remove the 3" rubber hose and clear the 1/4" teflon connector regularly.
- 4) Replace puffer inside airtight tube with dehydrating packet.



## STORAGE

Store inside the storage tube, horizontally, in a cool (below 90° F) dry place away from the sun, electronics and metal. The chemicals will corrode and damage electronics and metal.

## CAP/NOZZLE REPLACEMENT

- 1) Replace cap/nozzle "T" or hose when it begins to deteriorate NOT when it gets plugged.
- 2) Discard the old cap/nozzle - replace with new cap/nozzle from storage tube end labeled "spare cap/nozzle".

## CAUTION

- o Do not inhale the chemical smoke!
- o Read the MSDS safety data sheet provided for Titanium Tetrachloride (TiCl<sub>4</sub>).
- o Use the smoke in small quantities.
- o Pressurize the enclosure being tested for leaks so that test smoke gets blown outdoors.
- o Keep away from children.
- o DO NOT LEAVE IN SUN
- o DO NOT STORE ABOVE 90° F

## CARRYING

Use belly pouch. Carry puffer nozzle up. DO NOT carry nozzle down in your pocket - it may leak!

## LIQUID SPILLS

Flush with cold water. Wash hands immediately. Clear smoke immediately with blower door exhaust fans and/or open doors.

# Material Safety Data Sheet

For use with Retrotec's Air Current Tester  
Emergency Phone Number (24 hours) CHEMTREC (800-424-9300)  
Outside US: 703-527-3887

## SECTION 1

### CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION

**PRODUCT NAME:** Titanium Tetrachloride  
**COMMON NAME OR SYNONYMS:** Titanium Chloride, Titanium (IV) Chloride  
**SPEX CATALOG NUMBER:** VIL004

Manufacturer/Supplier  
SPEX CERTIPREP  
203 Norcross Avenue  
Metuchen, NJ 08840

SPEX CERTIPREP LTD  
2 Dalston Gardens  
Stanmore, Middlesex HA7 1BQ  
England  
Tel: (0) 20 8204 6656

## SECTION 2

### COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS MATERIAL	%	TLV UNITS	CAS #	EINECS	VOLUME
TiCl <sub>4</sub>	~100	0.5 mg/m <sup>3</sup>	[7550-45-0]		10ml

## SECTION 3

### HAZARD IDENTIFICATION

Corrosive. Harmful by ingestion. May be fatal if ingested. Irritating to the eyes and skin.  
Toxic by inhalation. Inhalation may cause lung damage. Water reactive.

## SECTION 4

### FIRST AID MEASURES

*General:* Remove contaminated clothing, wash thoroughly before reuse.  
*Eyes:* Flush with water for at least 15 minutes occasionally lifting upper and lower eyelids.  
*Skin:* Remove contaminated clothing and flush with water thoroughly. *Inhalation:* Move to fresh air. Get medical attention immediately. *Ingestion:* Get immediate medical attention immediately. If the patient is conscious, give large quantities of water. Do not induce vomiting.

## SECTION 5

### FIRE FIGHTING MEASURES

Flash Point: Not applicable.  
Extinguishing media: Carbon Dioxide or Dry Chemical. Do not use water or foam  
Special Hazards and Procedure: Contact with water may evolve flammable hydrogen gas.  
Protective Equipment: Wear self-contained breathing apparatus and full protective suit.

## SECTION 6

### ACCIDENTAL RELEASE MEASURES

Do not contact with water. Ventilate area. Wear protective equipment. Do not allow to enter drainage systems or water ways. Neutralize with soda ash, limestone etc. Wipe up and put into a sealed container for proper disposal. Wash spill site with water after material pick up is complete. Wear chemical resistant glasses, gloves and clothing.

## SECTION 7

### HANDLING & STORAGE

Ensure good ventilation/exhaustion at work place. Have an immediate availability of an eye wash in case of emergency. Store at room temperature. Keep the container tightly closed.

## SECTION 8

### EXPOSURE CONTROLS/PERSONAL PROTECTION

Wear goggles, protective apron and acid resistant gloves. Use under fume hood. In case of brief exposure, use MSHA/NIOSH approved respirator.

## SECTION 9

### PHYSICAL & CHEMICAL PROPERTIES

Form:	Liquid
Appearance & odor:	Transparent with acrid odor
% volatiles by vol. @ 21C:	100
Solubility:	Reacts violently with water
pH:	No information found
Melting point:	-24.1C
Boiling Point:	136C
Vapor Pressure(mm Hg):	10 @ 21C

## SECTION 10

### STABILITY & REACTIVITY

Stability: Stable under normal storage and use. Absorbs moisture from the air and evolves dense white fumes.  
Incompatibilities: Potassium metal, hydrofluoric acid or hydrogen fluoride, water. Contact with water.  
Reactivity: Reacts strongly water avoid moisture and incompatibles.  
Hazardous Decomposition Products: Oxides of the contained metal and halogen, possibly also free or ionic halogen.  
Hazardous Polymerization: Will not occur.

## SECTION 11

### TOXICOLOGICAL INFORMATION

May produce caustic effect on skin, mucous membranes and eyes. Swallowing will lead to a strong caustic effect on mouth and throat.

#### TOXICITY DATA:

Concentrated TiCl<sub>4</sub>—RTECS#-XR1925000  
Inhalation-rat LC50: 400 mg/m<sup>3</sup>

**SECTION 12**  
**ECOLOGICAL INFORMATION**

Do not allow product to reach ground water, water bodies or sewage system.

---

**SECTION 13**  
**DISPOSAL CONSIDERATIONS**

Contact local Hazardous or Chemical waste disposal agency for regulations.

---

**SECTION 14**  
**TRANSPORT INFORMATION**

**Ground:**

CLASS 6.1, 8

UN/ID # 1838

Packing Group: I

Proper Shipping Name: Titanium Tetrachloride

---

**SECTION 15**  
**REGULATORY INFORMATION**

USA:

SARA: Subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372.

Components of this solution are reported in EPA TSCA Inventory List.

WHMIS Classification (Canada): CLASS D

EC Guidelines:

C: Corrosive

Risk Phrases:

14 – Reacts violently with water

34 - Causes burns

Safety Phrases:

36/37/39 - Wear suitable protective clothing, gloves, and eye/face protection

26 - In case of contact with eyes, rinse immediately with plenty of water and seek

Medical attention

45 - In case of accident or if you feel unwell, seek medical advice immediately

7 – keep container tightly closed

8 – keep container dry

53 - Avoid exposure - obtain special instruction before use. Note: Restricted to

Professional Users

**SECTION 16**  
**OTHER INFORMATION**

SPEX CERTIPREP ASSUMES NO RESPONSIBILITY AND MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AS TO THE ACCURACY OR COMPLETENESS OF THE DATA CONTAINED HEREIN. INDICATED SAFETY MEASURES MAY NOT REFLECT ALL APPROPRIATE SAFETY MEASURES. PROTOCOL ANALYTICAL, LLC ASSUMES THAT ONLY QUALIFIED INDIVIDUALS, TRAINED AND FAMILIAR WITH

PROCEDURES SUITABLE TO THIS PRODUCT, WILL HANDLE THIS PRODUCT.

**References:**

The Sigma/Aldrich Library of Chemical Safety Data, Ed.I, (1985) Registry of Toxic Effects of Chemical Substances, 1981-82

Patty's Industrial Hygiene and Toxicology, 3

Revised Edition, Vol. 2A, 1981

Threshold Limit Values and Biological Exposure Indices for 1988-89, ACGIH

Dangerous properties of Industrial Materials by N. Irving Sax and Richard J. Lewis, Sr. (Ninth Edition)

Date: August 3, 2011