From: http://www.analytyka.com.mx/english/MSDS/T/T0092.htm

Analytyka ®
REACTIVOS Y MATERIAS PRIMAS ESPECIALES

PROFEPA:	01-800-770-3372
SETIQ:	01-800-002-1400
PROTECCION CIVIL:	01-800-004-1300

AMPEX CHEMICALS, S.A. DE C.V., SANTA ANA 577, ESCOBEDO, N.L., MEX. 66055, TEL: (81) 8307-2043

THIONYL CHLORIDE

1. Product Identification

Synonyms: Sulfinyl chloride; Sulfurous oxychloride; Thionyl dichloride; Sulfur chloride oxide
CAS No.: 7719-09-7
Molecular Weight: 118.98
Chemical Formula: SOCl2
Product Codes: T0092

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Thionyl Chloride	7719-09-7	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. MAY BE FATAL IF INHALED. HARMFUL IF SWALLOWED. VAPORS CAUSE SEVERE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. WATER REACTIVE.

Health Rating: 4 - Extreme
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Water Reactive)
Contact Rating: 4 - Extreme (Corrosive)
Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Corrosive. Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Inhalation may be fatal as a result of spasm inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.
Ingestion:

Corrosive. May cause burning pain in throat, abdominal pain, nausea, and vomiting.
Skin Contact:
Corrosive. Liquid contact may cause blistering burns, irritation, and pain. Vapors may be severely irritating to the skin.
Eye Contact:
Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Chronic Exposure:
Prolonged or repeated exposure may cause conjunctivitis, dermatitis, rhinitis, and pneumonitis.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

---

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

---

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard. May react violently with water or moist air.
Can liberate flammable hydrogen gas when in contact with metal and moisture.
Explosion:
Sealed containers may rupture when heated.
Fire Extinguishing Media:
Carbon dioxide or dry chemical. Do not use water or foam.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire exposed containers cool. Keep water from getting inside containers. Structural firefighter's protective clothing is ineffective for fires involving this material. Stay away from sealed containers.

---

6. Accidental Release Measures

Do not contact with water. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash,

lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

---

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Use air-drying vent tube or inert gas for partial withdrawals from containers or drums. Keep away from water. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

---

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-ACGIH Threshold Limit Value (TLV):
1 ppm Ceiling
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).
Skin Protection:
Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

---

9. Physical and Chemical Properties

Appearance: Clear, pale yellow to red liquid.
Odor: Characteristic, pungent odor.
Solubility: Decomposes in water.
Specific Gravity: 1.64 @ 20C/4C
pH: No information found.
% Volatiles by volume @ 21C (70F): 100
Boiling Point: 76C (169F) @ 760 mmHg; Decomposes @ 140C (284F)
Melting Point: -105C (-157F)
Vapor Density (Air=1): 4.1
Vapor Pressure (mm Hg): 100 @ 21C (70F)
Evaporation Rate (BuAc=1): No information found.

---

10. Stability and Reactivity

Stability:
Stable at room temperature in sealed containers. Fumes on exposure to moist air. Hydrolyzes in presence of moisture to sulfur dioxide and hydrogen chloride gas.
Hazardous Decomposition Products:
Decomposes when heated above 140C (284F) forming chlorine, sulfur dioxide, and sulfur monochloride and giving a suffocating odor.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Water, ammonia, chloryl perchlorate, dimethyl sulfoxide, linseed oil, quinoline, sodium, 2,4-hexadiyn-1-6-diol,
o-nitrobenzoyl acetic acid, and o-nitrophenylacetic acid.
Conditions to Avoid:
Heat, moisture, incompatibles.

---

11. Toxicological Information

Inhalation rat LC50: 500 ppm/1-hour.

Ingredient	Known	Anticipated	IARC Category
Thionyl Chloride (7719-09-7)	No	No	None

---

12. Ecological Information

Environmental Fate:
When released to moist soil or water, this material is expected to hydrolyze.
Environmental Toxicity:
No information found.

---

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

---

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: THIONYL CHLORIDE
Hazard Class: 8
UN/NA: UN1836
Packing Group: I
Information reported for product/size: 500ML
International (Water, I.M.O.)

Proper Shipping Name: THIONYL CHLORIDE
Hazard Class: 8

UN/NA: UN1836
Packing Group: I
Information reported for product/size: 500ML

15. Regulatory Information

Ingredient	TSCA	EC	Japan	Australia
Thionyl Chloride (7719-09-7)	Yes	Yes	Yes	Yes

Ingredient	Korea	DSL	NDSL	Phil.
Thionyl Chloride (7719-09-7)	Yes	Yes	No	Yes

Ingredient	RQ	TPQ	List	Chemical Catg.
Thionyl Chloride (7719-09-7)	No	No	No	No

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Thionyl Chloride (7719-09-7)	No	No	No

Chemical Weapons Convention: Yes TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: Yes (Pure / Liquid)

Australian Hazchem Code: 4WE
Poison Schedule: None allocated.
WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **4** Flammability: **0** Reactivity: **2** Other: **Water reactive**
Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. MAY BE FATAL IF INHALED. HARMFUL IF SWALLOWED. VAPORS CAUSE SEVERE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. WATER REACTIVE.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Wash thoroughly after handling.
Do not breathe vapor or mist.
Keep container closed.
Use only with adequate ventilation.
Do not contact with water.
Label First Aid:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

Product Use:
Laboratory Reagent.
Revision Information:
Jan. 2008.
Disclaimer:
****

ANALYTYKA provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. ANALYTYKA MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, ANALYTYKA WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

****