



1 PRODUCT AND COMPANY IDENTIFICATION

Thio and Fine Chemicals

Arkema Inc.
2000 Market Street
Philadelphia, PA 19103

EMERGENCY PHONE NUMBERS:

Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 767-5089 (24Hrs)

Information Telephone Numbers	Phone Number	Available Hrs
Customer Service	1-800-628-4453	8:30 to 5:30 EST

Product Name SPOTLEAK 1013
Product Synonym(s)
Chemical Family Cyclic alkyl sulfide
Chemical Formula C4H8S
Chemical Name Thiophene, tetrahydro-
EPA Reg Num
Product Use Odorant for Natural Gas

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical Wt. %	OSHA
Tetrahydrothiophene	110-01-0	100%	Y

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

The components of this product are all on the TSCA Inventory list.

3 HAZARDS IDENTIFICATION

Emergency Overview

Clear to pale yellow liquid; gas-like odor

DANGER!

FLAMMABLE LIQUID AND VAPOR.

CAUSES SKIN BURNS.

CAUSES EYE IRRITATION.

MAY BE HARMFUL IF SWALLOWED.

MAY CAUSE RESPIRATORY TRACT IRRITATION.

MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS MAY CAUSE NAUSEA, HEADACHE OR DIZZINESS.

Potential Health Effects

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, it is considered to be slightly toxic if swallowed, no more than slightly toxic if absorbed through skin, practically non-toxic if inhaled, severely irritating to eyes and corrosive to skin. This material has a strong objectionable odor that may cause nausea, headache, or dizziness. High vapor concentrations may be irritating to the eyes and respiratory tract, and may result in central nervous system (CNS) effects such as headache, dizziness, nausea, drowsiness and, in severe exposures, loss of consciousness.

4 FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Get medical attention.

IF ON SKIN, immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

IF SWALLOWED, do NOT induce vomiting. Give water to drink. Get medical attention immediately. 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. Get medical attention.

5 FIRE FIGHTING MEASURES**Fire and Explosive Properties**

Auto-Ignition Temperature	202 C		
Flash Point	<55 F	Flash Point Method	TCC
Flammable Limits- Upper	12.1		
Lower	1.1		

Extinguishing Media

Use water spray, carbon dioxide, foam or dry chemical.

Fire Fighting Instructions

Water may be ineffective. Use water spray or water fog to cool surrounding surfaces and prevent fire damage or rupture of containers. Fire fighters and others who may be exposed to products of combustion should wear full fire fighting gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Fire and Explosion Hazards

When burned, the following hazardous products of combustion can occur:

Hydrogen sulfide

Sulfur oxides

Oxides of carbon

Vapors can travel to a source of ignition and flash back.

6 ACCIDENTAL RELEASE MEASURES**In Case of Spill or Leak**

Extinguish or turn off ignition or combustion sources. Contain spill. Stop leak at source if this can be done safely. Ventilate area only if odor control is not an issue. Nonessential personnel should leave the area until cleanup is completed. Cover spill area with closed-cell foam to reduce odors (use of Aqueous Film Forming Foam (AFFF) with polymeric layer is acceptable). If foam is unavailable, absorb spill with liquid-binding material (e.g. diatomaceous earth, saw dust universal binder) and deodorize residue on ground with 3-10% hydrogen peroxide. If spill is contained within a large containment area, add 5% bleach solution (sodium hypochlorite) in a 50 parts bleach solution to one part product dilution ratio. Swimming pool chemicals (hypochlorite compounds) work effectively in deodorizing product. If these are applied to product, the crystals must be accompanied by sufficient water of dilution so that the considerable heat of reaction will be absorbed. Enzyme or bacteria based deodorizers are also acceptable for use. Place waste materials into Department of Transportation (DOT)-approved drums for disposal. Where practicable wash area down with water. Keep concentrate and wash water from entering sewers or waterways. Consult a regulatory specialist

6 ACCIDENTAL RELEASE MEASURES

to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7 HANDLING AND STORAGE**Handling**

Do not get in eyes, on skin or on clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep away from heat, sparks and flame.
Do not taste or swallow.

CONTAINER HAZARDOUS WHEN EMPTY. Emptied container retains vapor and product residue. Follow labeled warnings even after container is emptied. RESIDUAL VAPORS MAY EXPLODE ON IGNITION. DO NOT CUT, DRILL GRIND OR WELD ON OR NEAR THIS CONTAINER. Improper disposal or reuse of this container may be dangerous and/or illegal.

Storage

Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly rated, grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate and create a fire hazard. All storage containers, including containers such as drums, cylinders and IBC's, must be bonded and grounded during filling and emptying operations. Store away from oxidizers and reactive materials. Keep container tightly closed. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION**Engineering Controls**

Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposures. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Eye / Face Protection

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin Protection

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash skin thoroughly after handling.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION**Respiratory Protection**

Avoid breathing vapor or mist. Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Airborne Exposure Guidelines for Ingredients

The components of this product have no established Airborne Exposure Guidelines

- Only those components with exposure limits are printed in this section.
- Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.
- ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.
- WEEL-AIHA Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic skin reactions.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Clear to pale yellow liquid; gas-like odor
pH	NE
Specific Gravity	1.002
Vapor Pressure	0.7 psia @ 38C
Vapor Density	3.04
Melting Point	NA
Freezing Point	<-50 F
Boiling Point	120.9 C (249.6 F)
Solubility In Water	Insoluble @ 20 C
Solubility in Other Materials	Alcohols, ethyl ether
Evaporation Rate	NE
Percent Volatile	100
Viscosity	1.042 cP @ 20 C
Molecular Weight	88.16
n-Octanol/Water Partition Coefficient	log Pow = 1.6
Other Physical Data	Refractive index: 1.505 @ 20 C Odor threshold: 1 ppb Critical temperature: 306 C Critical pressure: 55.8 bar

10 STABILITY AND REACTIVITY**Stability**

This material is chemically stable under normal and anticipated storage and handling conditions.

Incompatibility

Avoid contact with strong oxidizers, acids, bases, reducing agents.

Hazardous Decomposition Products

None known.

11 TOXICOLOGICAL INFORMATION**Toxicological Information**

Data on this material and/or its components are summarized below.

Single exposure (acute) studies indicate:

Oral - Slightly Toxic to Rats (LD50 1,850 mg/kg)

Dermal - No More Than Slightly Toxic to Rabbits (LD50 >2,000 mg/kg)

Inhalation - Practically Non-toxic to Rats (4-hr LC50 6,270 ppm)

Eye Irritation - Severely Irritating to Rabbits

Skin Irritation - Severely Irritating to Corrosive to Rabbits (4-hr exposure)

Increased white blood cell counts were observed in rats following repeated inhalation exposure. No birth defects were noted in rats exposed by inhalation during pregnancy, even at levels that produced significant adverse effects on the mothers. No genetic changes were observed in tests using bacteria or animal or human cells.

12 ECOLOGICAL INFORMATION**Ecotoxicological Information**

Data on this material and/or its components are summarized below.

Tetrahydrothiophene

This material is slightly toxic to *Daphnia magna* (48-hr EC50 24 mg/l), algae (72-hr EC50 90 mg/l) and zebrafish (96-hr LC50 >60 mg/l).

Chemical Fate Information

Data on this material and/or its components are summarized below.

Tetrahydrothiophene

This material is not readily biodegradable (10% after 28-days) and is practically not bioaccumulable (log Pow 1.6). It is degraded in air by OH radicals (half-life 9.7-hours).

13 DISPOSAL CONSIDERATIONS**Waste Disposal**

Incineration is the recommended method for disposal observing all local, state and federal regulations. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.



14 TRANSPORT INFORMATION

DOT Name Tetrahydrothiophene
DOT Technical Name
DOT Hazard Class 3(8)
UN Number UN2412
DOT Packing Group PG II
RQ
DOT Special Information Subsidiary Hazard - Corrosive

15 REGULATORY INFORMATION

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health	Y	Fire	Y
Delayed (Chronic) Health	N	Reactive	N
		Sudden Release of Pressure	N

The components of this product are all on the TSCA Inventory list.

Ingredient Related Regulatory Information:

SARA Reportable Quantities

CERCLA RQ

SARA TPQ

Tetrahydrothiophene

NE

New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right-to-Know Substances List.

Tetrahydrothiophene

16 OTHER INFORMATION

Revision Information

Revision Date 11 OCT 2004 Revision Number 8
Supersedes Revision Dated 19-AUG-2004

Revision Summary

A TOFINA Chemicals, Inc. has changed its name to Arkema Inc.

Key

NE= Not Established NA= Not Applicable (R) = Registered Trademark



SPOTLEAK 1013
Material Safety Data Sheet

Arkema Inc.

Arkema Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use are beyond the control of Arkema Inc., Arkema Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.