



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 1450
Product Synonym(s)
Chemical Family Mixture
Chemical Formula Mixture
Chemical Name Blend - Alkyl Mercaptans, Alkyl Sulfide
EPA Reg Num
Product Use Odorant for Natural Gas

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical %	OSHA
Isopropylmercaptan	75-33-2	70% By Wt.	Y
tert-Butylmercaptan	75-66-1	10% By Wt.	Y
Dimethyl sulfide	75-18-3	10% By Wt.	Y
n-Propylmercaptan	107-03-9	10% By Wt.	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

Colorless liquid, gas-like odor

DANGER!

EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.

MAY CAUSE EYE IRRITATION.

MAY CAUSE RESPIRATORY TRACT IRRITATION.

MAY CAUSE ALLERGIC SKIN REACTION.

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, practically non-irritating to skin and slightly irritating to eyes. Repeated or prolonged contact may cause an allergic skin reaction. Vapor may be irritating to the eyes, skin and respiratory tract



and, with extreme overexposure, may cause a sense of coldness at the extremities, rapid heartbeat, cyanosis and respiratory paralysis. This material has a strong objectionable odor that may cause nausea, headache, or dizziness.

4 FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water. Get medical attention if irritation persists.

IF ON SKIN, immediately wash with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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	NE		
Flash Point	<0 F	Flash Point Method	TCC
Flammable Limits- Upper	NE		
Lower	NE		

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:

Oxides of carbon

Sulfur oxides

Hydrogen sulfide

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

6 ACCIDENTAL RELEASE MEASURES

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 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**

Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
Wash thoroughly after handling.

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 below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). 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 face shield and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection

Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. 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 exposure limit may be significantly exceeded, 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

Exposure Limit	Value
Dimethyl sulfide	
ACGIH TWA	- 10 ppm

- 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	Colorless liquid, gas-like odor
pH	NE
Specific Gravity	0.825 @ 1505 C
Vapor Pressure	8.9 psia @ 100 F
Vapor Density	2.62
Melting Point	NA
Freezing Point	<-50 C
Boiling Point	53 C
Solubility In Water	Insoluble @ 20 C
Solubility in Other Materials	Alcohols, ethyl ether
Evaporation Rate	NE
Percent Volatile	100
Other Physical Data	Odor threshold: 0.1 ppb

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

11 TOXICOLOGICAL INFORMATION**Toxicological Information**

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

Spotleak 1450

Single exposure (acute) studies indicate that this material is slightly toxic if swallowed (rat LD50 3,160 mg/kg), no more than slightly toxic if absorbed through skin (rat LD50 >2,000 mg/kg), practically non-toxic if inhaled (rat 1-hr LC50 >20 mg/l; vapor), practically non-irritating to rabbit skin and slightly irritating to rabbit eyes.

Isopropyl Mercaptan

Acute effects in rats during exposure to sublethal vapor concentrations of 18.44 mg/l or less for 4-hours were attributed to the irritant nature of the vapors.

Dimethyl Sulfide

No skin allergy was observed in humans following repeated exposure. Administration in the drinking water of rabbits produced increased lung weights and gross changes suggestive of effects in lungs and kidneys. Repeated oral administration to rats and rabbits resulted in effects on the blood, lungs and kidney and some organ weight changes. No genetic changes were observed in tests using bacteria, animal cells or animals.

tert-Butylmercaptan

In rodents, acute poisoning by this material produced a pattern of central nervous system depression, muscular paralysis, and tremors. Skin allergy was observed in guinea pigs following repeated exposure. Following repeated inhalation exposures, mild to moderate liver effect (hypertrophy) and mild kidney effects (proximal tubular nephrosis in males only) were observed in rats. No birth defects were noted in the offspring of rats and mice exposed by inhalation during pregnancy. No genetic changes were observed in tests using bacteria or animals. Both positive and negative responses have been reported in tests using animal cells.

n-Propyl Mercaptan

Acute poisoning produced a pattern of central nervous system depression and respiratory paralysis in rodents with death resulting from respiratory failure.

12 ECOLOGICAL INFORMATION**Ecotoxicological Information**

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

Dimethyl Sulfide

This material is slightly toxic to *Daphnia magna* (48-hr LC50 29 mg/l). It is practically non-toxic to algae (96-hr EC50 23 mg/l) and rainbow trout (96-hr LC50 213 mg/l).

tert-Butylmercaptan

This material is moderately toxic to *Daphnia magna* (48-hr EC50 6.7 mg/l), and is slightly toxic to rainbow trout (96-hr LC50 34 mg/l) and alga (72-hr EC50 13 mg/l).

n-Propylmercaptan

This material is highly toxic to *Daphnia magna* (48-hr EC50 <0.22 mg/l).

Chemical Fate Information

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

tert-Butylmercaptan

The freshwater solubility of this material is 1,470 mg/l. The stability of 10 mg/l is 81.8% after 96-hrs.

12 ECOLOGICAL INFORMATION

Dimethyl sulfide

This material is readily biodegradable (67.4% after 28-days) and is not expected to bioaccumulate (log Pow 0.87). It is degraded in air by OH radicals (half-life 3.5 days) and O3 (half-life 13.8-days). It has an evaporation half-life of 2.7-hours and has slight potential to adsorb onto soil and sediment (log Koc 0.84).

n-Propylmercaptan

This material is readily biodegradable (94% in 14 days - OECD 301).

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	Mercaptan mixture, liquid, flammable, n.o.s.
DOT Technical Name	(Isopropyl mercaptan, t-Butyl mercaptan)
DOT Hazard Class	3
UN Number	UN3336
DOT Packing Group	PG II
RQ	

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
n-Propylmercaptan	NE	
Dimethyl sulfide	NE	NE
Isopropylmercaptan	NE	
tert-Butylmercaptan	NE	

Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

- Dimethyl sulfide
- Isopropylmercaptan



Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

- n-Propylmercaptan
- tert-Butylmercaptan

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.

- Dimethyl sulfide
- Isopropylmercaptan
- n-Propylmercaptan
- tert-Butylmercaptan

Pennsylvania Environmental Hazard

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Environmental Hazard List.

- Dimethyl sulfide

Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List.

- Dimethyl sulfide
- tert-Butylmercaptan

16 OTHER INFORMATION

Revision Information

Revision Date 11 JUN 2007 Revision Number 14
Supercedes Revision Dated 11-OCT-2004

Revision Summary

Revised sections 2 and 12.

Key

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

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.