

Material Safety Data Sheet

Thiophene, benzene free, 99.5%

ACC# 01416

Section 1 - Chemical Product and Company Identification

MSDS Name: Thiophene, benzene free, 99.5%
Catalog Numbers: AC342591000, AC342595000
Synonyms: Thiofuran; Divinylene sulfide.

Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-02-1	Thiophene	99.5	203-729-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless to pale yellow liquid. Flash Point: -9 deg C.

Danger! Extremely flammable liquid and vapor. Vapor may cause flash fire. Causes eye, skin, and respiratory tract irritation. Harmful if inhaled or swallowed. Stench.

Target Organs: Liver, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Lachrymator (substance which increases the flow of tears).

Skin: Causes skin irritation. May be harmful if absorbed through the skin. Skin absorption was not evident at 20 ml/kg in guinea pigs, however, material was strongly irritating. Skin sensitization response in guinea pigs was low in 1/5 animals tested.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause nausea and vomiting.

Inhalation: Harmful if inhaled. Causes respiratory tract irritation.

Chronic: Chronic exposure may cause liver damage. In a feeding study, rats were given 50, 100, 500 or 1000 mg/kg/day of thiophene by gavage, 5 days/week for 13 doses. No significant effects were noted for the 50 and 100 mg/kg/day groups. The 500 and 1000 mg/kg/day groups had reduced weight gain and feed intake and showed symptoms of toxicity to the liver, kidneys, lymphoid tissue, red blood cell and central nervous system. Rats exposed to vapor concentrations of 1600 or 3200 ppm of thiophene for 6 hours/day, 12 times in a 15-day period, were similarly affected.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: Use water spray, dry chemical, or carbon dioxide.

Flash Point: -9 deg C (15.80 deg F)

Autoignition Temperature: 395 deg C (743.00 deg F)

Explosion Limits, Lower: 1.5%

Upper: 12.5%

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability:

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of

ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area. Separate from oxidizing materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Thiophene	none listed	none listed	none listed

OSHA Vacated PELs: Thiophene: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless to pale yellow

Odor: stench

pH: Not available.

Vapor Pressure: 79.7 mm Hg @ 25 deg C

Vapor Density: 2.9 (air=1)

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 84 deg C @ 760 mm Hg

Freezing/Melting Point: -38 deg C

Decomposition Temperature: > 850 deg C

Solubility: Insoluble.

Specific Gravity/Density: 1.0500 g/cm3

Molecular Formula: C4H4S

Molecular Weight: 84.14

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, confined spaces.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, oxides of sulfur, carbon dioxide, hydrogen sulfide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 110-02-1: XM7350000

LD50/LC50:

CAS# 110-02-1:

Dermal, guinea pig: LD50 = >20 mL/kg;

Inhalation, mouse: LC50 = 9500 mg/m3/2H;

Oral, mouse: LD50 = 420 mg/kg;

Oral, rat: LD50 = 1400 mg/kg;

Carcinogenicity:

CAS# 110-02-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Daphnia: Daphnia: 13 mg/l; 48H; EC50 No data available.

Environmental: No information available.

Physical: No information available.

Other: Thiophene is not likely to bioconcentrate. Not readily biodegradable.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	THIOPHENE	THIOPHENE
Hazard Class:	3	3
UN Number:	UN2414	UN2414
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 110-02-1 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 110-02-1: immediate, fire.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 110-02-1 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN F

Risk Phrases:

R 11 Highly flammable.

R 20/22 Harmful by inhalation and if swallowed.

R 36 Irritating to eyes.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 110-02-1: 3

Canada - DSL/NDSL

CAS# 110-02-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 6/02/1999

Revision #4 Date: 9/15/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.