

Mercaptan Assassin AOT**1. PRODUCT AND COMPANY IDENTIFICATION****Company**

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Thio and Fine Chemicals

Customer Service Telephone Number: (800) 628-4453
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: Mercaptan Assassin AOT
Synonyms: Airborn Odor Treatment
Molecular formula: Not available
Chemical family: Orange Terpenes
Product use: liquid air freshener

2. HAZARDS IDENTIFICATION**Emergency Overview**

Color: Colourless to yellow.
Physical state: liquid
Odor: pleasant

***Classification of the substance or mixture:**

Flammable liquid., Category 3, H226
Skin irritation, Category 2, H315
Skin sensitisation, Sub-category 1B, H317
Aspiration hazard, Category 1, H304
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410

*For the full text of the H-Statements mentioned in this Section, see Section 16.

Mercaptan Assassin AOT**GHS-Labeling**

Hazard pictograms:



Signal word:

Danger**Hazard statements:**

- H226 : Flammable liquid and vapour.
- H304 : May be fatal if swallowed and enters airways.
- H315 : Causes skin irritation.
- H317 : May cause an allergic skin reaction.
- H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statements:**Prevention:**

- P210 : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233 : Keep container tightly closed.
- P240 : Ground/bond container and receiving equipment.
- P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242 : Use only non-sparking tools.
- P243 : Take precautionary measures against static discharge.
- P261 : Avoid breathing gas/mist/vapours/spray.
- P264 : Wash skin thoroughly after handling.
- P272 : Contaminated work clothing should not be allowed out of the workplace.
- P273 : Avoid release to the environment.
- P280 : Wear protective gloves/ eye protection/ face protection.

Response:

- P301 + P310 : IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P331 : Do NOT induce vomiting.
- P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
- P362 : Take off contaminated clothing and wash before reuse.
- P370 + P378 : In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
- P391 : Collect spillage.

Storage:

- P403 + P235 : Store in a well-ventilated place. Keep cool.
- P405 : Store locked up.

Disposal:

- P501 : Dispose of contents/ container to an approved waste disposal plant.

Mercaptan Assassin AOT

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	5989-27-5	> 99 %	H400, H410, H317, H315, H226, H304

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:

If inhaled, remove victim to fresh air.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

Immediately flush eye(s) with plenty of water.

Ingestion:

If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Center immediately. If vomiting occurs, have person lean forward. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Extinguishing media (unsuitable):

Mercaptan Assassin AOT

Water may be ineffective., Do not use a solid water stream as it may scatter and spread fire.

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

Do not allow run-off from fire fighting to enter drains or water courses.

Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

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

Carbon oxides

Hydrocarbons

Hazardous organic compounds

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:**

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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.

Protective equipment:

Appropriate personal protective equipment is set forth in Section 8.

Mercaptan Assassin AOT

7. HANDLING AND STORAGE

Handling

General information on handling:

Keep away from heat, sparks and flames.
 Do not taste or swallow.
 Avoid breathing vapor or mist.
 Avoid contact with skin, eyes and clothing.
 No smoking.
 Keep container closed.
 Use only with adequate ventilation.
 Wash thoroughly after handling.
 Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
 Follow label 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.
 Container hazardous when empty.
 Emptied container retains vapor and product residue.

Storage

General information on storage conditions:

Keep in a dry, cool place. Keep away from direct sunlight. Keep container closed when not in use. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. 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 grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. 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.

Storage incompatibility – General:

Store separate from:

Oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)- (5989-27-5)

US. OARS. WEELs Workplace Environmental Exposure Level Guide

Time weighted average	30 ppm (165.5 mg/m3)
-----------------------	----------------------

Remarks:	Listed
-----------------	--------

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Mercaptan Assassin AOT

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). 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.

Respiratory protection:

Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), 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. Consult respirator manufacturer to determine appropriate type equipment for a 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 or 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.

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 immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:

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

9. PHYSICAL AND CHEMICAL PROPERTIES
--

Color:	Colourless to yellow.
Physical state:	liquid
Odor:	pleasant
Odor threshold:	No data available
Flash point	120 °F (49 °C) (Method: TCC method)
Auto-ignition temperature:	Not applicable
Lower flammable limit (LFL):	Not applicable
Upper flammable limit (UFL):	Not applicable

Mercaptan Assassin AOT

pH:	No data available
Density:	0.84 g/cm ³
Vapor pressure:	No data available
Vapor density:	No data available
Boiling point/boiling range:	221 °F (105 °C)
Melting point/range:	No data available
Freezing point:	No data available
Evaporation rate:	No data available
Solubility in water:	Insoluble and not miscible.
Viscosity, dynamic:	No data available
Oil/water partition coefficient:	No data available
Thermal decomposition	No data available
Flammability:	See GHS Classification in Section 2

10. STABILITY AND REACTIVITY**Stability:**

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

Hazardous reactions:

None known.

Materials to avoid:

Oxidizing agents

Conditions / hazards to avoid:

Heat, flames and sparks.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products
Carbon oxides
Hydrocarbons
Hazardous organic compounds

Mercaptan Assassin AOT**11. TOXICOLOGICAL INFORMATION**

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

Data for Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)- (5989-27-5)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 4,400 - 5,100 mg/kg.

Dermal:

Practically nontoxic. (rabbit) LD50 > 5,000 mg/kg.

Skin Irritation:

Causes skin irritation. (rabbit)

Eye Irritation:

Causes mild eye irritation. (rabbit)

Skin Sensitization:

May cause an allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed. (Weak response)

Repeated dose toxicity

Oral administration to rat, mouse, dog / affected organ(s): kidney / signs: changes in organ structure or function

Oral administration to mouse / signs: immune suppression

Carcinogenicity

Chronic oral, dermal administration to mouse / signs: No increase in tumor incidence was reported.

Chronic oral administration to rat / affected organ(s): kidney / signs: Increased incidence of tumors was reported.

Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Developmental toxicity

Exposure during pregnancy. Oral (rat, mouse, rabbit) / No birth defects were observed. (at doses that produce effects in mothers)

Human experience**Skin contact:**

Skin: Skin allergy was observed. (studied using human volunteers)

Mercaptan Assassin AOT**Human experience****Ingestion:**

Gastro-intestinal tract: diarrhea. (studied using human volunteers)

12. ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

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

Data for Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)- (5989-27-5)**Biodegradation:**

Readily biodegradable. (28 d) 100 %

Octanol Water Partition Coefficient:

log Pow = 4.57 (measured)

Ecotoxicology

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

Data for Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)- (5989-27-5)**Aquatic toxicity data:**

Very toxic. Pimephales promelas (fathead minnow) LC50 = 0.702 mg/l

Aquatic invertebrates:

Very toxic. Daphnia magna (Water flea) 48 h LC50 >= 0.36 mg/l

13. DISPOSAL CONSIDERATIONS**Waste disposal:**

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. 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. 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.

Take appropriate measures to prevent release to the environment.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

Special Shipping Information: Non-Bulk Shipments: Not regulated by DOT per 49 CFR §173.120(b)(2)

Special Shipping Information Bulk Shipments: UN1993, Flammable liquid, n.o.s. (Terepene hydrocarbon), 3, PG III, Marine Pollutant.

Mercaptan Assassin AOT

International Maritime Dangerous Goods Code (IMDG)

UN Number : 1993
 Proper shipping name : FLAMMABLE LIQUID, N.O.S.
 Technical name : (TEREPENE HYDROCARBON)
 Class : 3
 Packaging group : III
 Marine pollutant : yes
 Flash point : 120 °F (49 °C)

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
United States TSCA Inventory	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Fire Hazard

SARA Title III – Section 313 Toxic Chemicals:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Mercaptan Assassin AOT**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):**

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations**New Jersey Right to Know**

<u>Chemical name</u>	<u>CAS-No.</u>
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	5989-27-5

Pennsylvania Right to Know

<u>Chemical name</u>	<u>CAS-No.</u>
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	5989-27-5

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Miscellaneous:

Other information:	Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77, and 497 and OSHA 29 CFR 1910.106, for safe handling.
--------------------	---

Latest Revision(s):

Reference number:	000000062738
Date of Revision:	07/22/2016
Date Printed:	07/23/2016

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, ARKEMA expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; **NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN.** The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application

Mercaptan Assassin AOT

before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (<http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html>) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.

It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.