

SAFETY DATA SHEETS

According to the UN GHS revision 8

Version: 1.0

Creation Date: July 15, 2019

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SECTION 1: Identification

1.1 GHS Product identifier

Product name Methoprene

1.2 Other means of identification

Other names

1.3 Recommended use of the chemical and restrictions on use

Identified uses Insecticide
Uses advised against no data available

1.4 Supplier's details

Company Target Molecule Corp.
Address Suite 260, 36 Washington Street, Wellesley Hills, Massachusetts, USA
Tel/Fax +1 (857) 239-0968

1.5 Emergency phone number

Emergency phone number 400-821-2233
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Skin irritation, Category 2
Eye irritation, Category 2
Specific target organ toxicity – single exposure, Category 3
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Warning

Hazard statement(s)
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention
P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

Response	P273 Avoid release to the environment.
	P302+P352 IF ON SKIN: Wash with plenty of water/...
	P321 Specific treatment (see ... on this label).
	P332+P317 If skin irritation occurs: Get medical help.
	P362+P364 Take off contaminated clothing and wash it before reuse.
	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P319 Get medical help if you feel unwell.
	P391 Collect spillage.
Storage	P403+P233 Store in a well-ventilated place. Keep container tightly closed.
	P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Isopropyl (2E,4E)-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	Isopropyl (2E,4E)-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	40596-69-8	254-993-2	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

no data available

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

Wash contaminated skin with soap and water. Treat eye exposures by irrigating exposed eyes with copious amounts of clean water or saline for at least 15 minutes. Remove contact lenses, if present, prior to irrigation. If irritation persists after irrigation, send patient to a healthcare facility for further medical attention.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Specific hazards arising from the chemical

no data available

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: Store at -20°C

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	no data available
Colour	Clear amber liquid
Odour	Faint fruity odor
Melting point/freezing point	164°C
Boiling point or initial boiling point and boiling range	135 - 136 at 0.06 mm Hg
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	Flash point is 187 deg C (Open cup)
Auto-ignition temperature	no data available
Decomposition temperature	no data available

pH	no data available
Kinematic viscosity	no data available
Solubility	In water, 1.4 mg/L at room temperature
Partition coefficient n-octanol/water	log Kow = 5.50
Vapour pressure	2.36X10 ⁻⁴ mm Hg at 25 deg C
Density and/or relative density	0.9261
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral >34600 mg/kg
- Inhalation: no data available
- Dermal: LD50 Rabbit percutaneous 3500 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: /Lepomis macrochirus/ (Bluegill sunfish) oral 4.6 mg/L for 96 hr
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Methoprene showed an initial aerobic biodegradation half-life of approximately 10 days at a surface treatment rate of 1 kg/ha in both sandy and silty loam soils(1). The biodegradation half-life in pond water was about 30 hrs at 0.001 ppm and 40 hrs at 0.01 ppm(2). At 0.42 ppm in pond water for 3 days, three primary metabolites were produced: hydroxy-ester; methoxy-acid; hydroxy-acid(2). After 13 days incubation in pond water, the single major metabolite produced was identified as 7-methoxycitronellic acid(2). Degradation is somewhat less rapid under sterile conditions than under nonsterile conditions indicating that, although photolysis may be the main degradation route, microbial metabolism contributes to methoprene degradation(3). Methoprene degradation occurs at approximately the same rate in both freshwater and saltwater maintained in the dark(3). Degradation proceeds more rapidly at 20 deg C than at 4.5 deg C, with associated half-lives of 10-35 days and >35 days, respectively(3). The major microbial product is 7-methoxy-3,7-dimethyloctanoic acid (methoxycitronellic acid)(3).

12.3 Bioaccumulative potential

An estimated BCF of 2000 was calculated in fish for methoprene(SRC), using a log Kow of 5.5(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is very high, provided the compound is not metabolized by the organism(SRC). Uncharacterized methoprene residues accumulated in edible tissues of bluegill sunfish and crayfish at maximum bioconcentration factors of 457 and 75, respectively(4).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of methoprene can be estimated to be 5300(SRC). According to a classification scheme(2), this estimated Koc value suggests that methoprene is expected to be immobile in soil.

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN3082 (For reference only, please check.)

IMDG: UN3082 (For reference only, please check.)

IATA: UN3082 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.)
IMDG: 9 (For reference only, please check.)
IATA: 9 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Isopropyl (2E,4E)-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	Isopropyl (2E,4E)-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	40596-69-8	254-993-2
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.
Korea Existing Chemicals List (KECL)			Not Listed.

SECTION 16: Other information

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.