

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Astro Insecticide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/04/2025	11568060-00001	Date of first issue: 08/04/2025

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### SECTION 1. IDENTIFICATION

Product name : Astro Insecticide

Product code : Article/SKU: 11008422 UVP: DU00000151 Specification: 102D00000454 EPA Registration No.: 101563-233

#### Manufacturer or supplier's details

Company name of supplier : Environmental Science U.S. LLC.

Address : 5000 Centregreen Way, Suite 400  
Cary NC 27513

Telephone : 1-800-331-2867

Emergency telephone : +1 703-741-5970

E-mail address : uscontact@envu.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

Restrictions on use : Not applicable

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitization : Category 1

Specific target organ toxicity : Category 2 (Liver, Thyroid)  
- repeated exposure

Aspiration hazard : Category 1

#### Other hazards

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours). Vapors may form explosive mixture with air.

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### GHS label elements

Hazard pictograms



Signal Word

: Danger

Hazard Statements

: H226 Flammable liquid and vapor.  
H302 + H332 Harmful if swallowed or if inhaled.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H373 May cause damage to organs (Liver, Thyroid) through prolonged or repeated exposure.

Precautionary Statements

: **Prevention:**

P210 Keep away from heat, sparks, open flame and hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P241 Use explosion-proof electrical, ventilating and lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves, protective clothing, eye protection and face protection.

**Response:**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P314 Get medical attention if you feel unwell.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P331 Do NOT induce vomiting.  
P333 + P313 If skin irritation or rash occurs: Get medical attention.  
P337 + P313 If eye irritation persists: Get medical attention.

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### Storage:

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

### Disposal:

P501 Dispose of contents and container to an approved waste disposal plant.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Permethrin	52645-53-1*	36.8	-
Diisopropyl-1,1'-biphenyl	69009-90-1*	>= 25 - < 30	-
Distillates (petroleum), hydrotreated light	64742-47-8*	>= 10 - < 15	-
Calcium bis(dodecylbenzenesulphonate), branched	70528-83-5*	>= 1 - < 3	-

\* Indicates that the identifier is a CAS No.

## SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.

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If vomiting occurs have person lean forward.  
Call a physician or poison control center immediately.  
Rinse mouth thoroughly with water.  
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed : Ingestion may provoke the following symptoms:  
sore throat  
Abdominal pain  
Nausea  
Vomiting  
Inhalation may provoke the following symptoms:  
Respiratory irritation  
Breathing difficulties  
Headache  
Dizziness  
Harmful if swallowed or if inhaled.  
May be fatal if swallowed and enters airways.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause damage to organs through prolonged or repeated exposure.  
This product contains a pyrethroid.  
Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician : Treat symptomatically.

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### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.  
Flash back possible over considerable distance.  
Vapors may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Chlorine compounds  
Carbon oxides  
Sulfur oxides

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Metal oxides

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.  
Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g., by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapors/mists with a water spray jet.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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### SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust

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- ventilation.  
Use explosion-proof electrical, ventilating and lighting equipment.
- Advice on safe handling : Do not get on skin or clothing.  
Do not breathe mist or vapors.  
Do not swallow.  
Do not get in eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Non-sparking tools should be used.  
Keep container tightly closed.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Take precautionary measures against static discharges.  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.  
Store locked up.  
Keep tightly closed.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.  
Keep away from heat and sources of ignition.
- Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents  
Self-reactive substances and mixtures  
Organic peroxides  
Flammable solids  
Pyrophoric liquids  
Pyrophoric solids  
Self-heating substances and mixtures  
Substances and mixtures which in contact with water emit flammable gases  
Explosives  
Gases  
Very acutely toxic substances and mixtures

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	TWA (Mist)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Mist)	5 mg/m <sup>3</sup>	NIOSH REL
		ST (Mist)	10 mg/m <sup>3</sup>	NIOSH REL

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**Engineering measures** : Minimize workplace exposure concentrations.  
If sufficient ventilation is unavailable, use with local exhaust ventilation.  
Use explosion-proof electrical, ventilating and lighting equipment.

### Personal protective equipment

**Respiratory protection** : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

### Hand protection

**Material** : Chemical-resistant gloves

**Remarks** : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.

**Eye protection** : Wear the following personal protective equipment:  
Safety goggles

**Skin and body protection** : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Wear the following personal protective equipment:  
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

**Hygiene measures** : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Contaminated work clothing should not be allowed out of the workplace.

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Wash contaminated clothing before re-use.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	amber
Odor	:	slight, hydrocarbon-like
Odor Threshold	:	No data available
pH	:	7.5 (68 °F / 20 °C)
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	108 °F / 42 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Sustains combustion
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.04 g/cm <sup>3</sup>
Solubility(ies) Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not applicable

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Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle characteristics	:	
Particle size	:	Not applicable

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

Harmful if swallowed or if inhaled.

#### Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,359 mg/kg Method: Calculation method
Acute inhalation toxicity	:	LC50 (Rat): > 4.3 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg

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Method: Calculation method

### Components:

#### **Permethrin:**

Acute oral toxicity : LD50 (Rat): 480 - 554 mg/kg

Acute inhalation toxicity : LC50 (Rat): 2.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

#### **Diisopropyl-1,1'-biphenyl:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Remarks: Based on data from similar materials

#### **Distillates (petroleum), hydrotreated light:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

#### **Calcium bis(dodecylbenzenesulphonate), branched:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 1,000 - 2,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

### **Skin corrosion/irritation**

Causes skin irritation.

### Components:

#### **Permethrin:**

Species : Rabbit  
Result : No skin irritation

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### Diisopropyl-1,1'-biphenyl:

Species : Rabbit  
Result : Skin irritation  
Remarks : Based on data from similar materials

### Distillates (petroleum), hydrotreated light:

Assessment : Repeated exposure may cause skin dryness or cracking.

### Calcium bis(dodecylbenzenesulphonate), branched:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation  
Remarks : Based on data from similar materials

### Serious eye damage/eye irritation

Causes serious eye irritation.

### Components:

#### Permethrin:

Species : Rabbit  
Result : No eye irritation

### Diisopropyl-1,1'-biphenyl:

Species : Rabbit  
Result : No eye irritation  
Remarks : Based on data from similar materials

### Distillates (petroleum), hydrotreated light:

Species : Rabbit  
Result : No eye irritation

### Calcium bis(dodecylbenzenesulphonate), branched:

Species : Rabbit  
Result : Irreversible effects on the eye  
Remarks : Based on data from similar materials

### Respiratory or skin sensitization

#### Skin sensitization

May cause an allergic skin reaction.

#### Respiratory sensitization

Not classified based on available information.

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### Components:

#### **Permethrin:**

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : positive  
  
Assessment : Probability or evidence of skin sensitization in humans

#### **Diisopropyl-1,1'-biphenyl:**

Test Type : Maximization Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

#### **Distillates (petroleum), hydrotreated light:**

Test Type : Maximization Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

#### **Calcium bis(dodecylbenzenesulphonate), branched:**

Test Type : Maximization Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative  
Remarks : The test was conducted according to guideline  
Based on data from similar materials

#### **Germ cell mutagenicity**

Not classified based on available information.

### Components:

#### **Permethrin:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
  
Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
  
Test Type: Chromosome aberration test in vitro  
Result: negative  
  
Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)  
Result: negative

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Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro  
Result: positive

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Mouse  
Result: negative

Test Type: Rodent dominant lethal test (germ cell) (in vivo)  
Species: Mouse  
Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: Intraperitoneal injection  
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Mouse  
Application Route: Ingestion  
Result: positive

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### Diisopropyl-1,1'-biphenyl:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Result: negative  
Remarks: Based on data from similar materials

### Distillates (petroleum), hydrotreated light:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: Chromosomal aberration

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Species: Rat  
Application Route: Intraperitoneal injection  
Result: negative  
Remarks: Based on data from similar materials

### **Calcium bis(dodecylbenzenesulphonate), branched:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: The test was conducted equivalent or similar to  
guideline  
Based on data from similar materials

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

#### **Permethrin:**

Species : Rat  
Result : negative

Species : Mouse  
Result : negative

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is

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identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

Not classified based on available information.

### Components:

#### **Permethrin:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Result: negative

#### **Distillates (petroleum), hydrotreated light:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

#### **Calcium bis(dodecylbenzenesulphonate), branched:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

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### STOT-single exposure

Not classified based on available information.

### STOT-repeated exposure

May cause damage to organs (Liver, Thyroid) through prolonged or repeated exposure.

### Components:

#### Diisopropyl-1,1'-biphenyl:

Routes of exposure	:	Ingestion
Target Organs	:	Liver, Thyroid
Assessment	:	Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

### Repeated dose toxicity

### Components:

#### Permethrin:

Species	:	Rat
NOAEL	:	0.2201 mg/l
Application Route	:	Inhalation
Exposure time	:	90 Days

Species	:	Rat
NOAEL	:	175 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 Days

#### Diisopropyl-1,1'-biphenyl:

Species	:	Rat
LOAEL	:	35 mg/kg
Application Route	:	Ingestion
Exposure time	:	28 Days
Method	:	OECD Test Guideline 407

#### Distillates (petroleum), hydrotreated light:

Species	:	Rat
NOAEL	:	> 10.4 mg/l
Application Route	:	inhalation (vapor)
Exposure time	:	90 Days
Remarks	:	Based on data from similar materials

### Aspiration toxicity

May be fatal if swallowed and enters airways.

### Components:

#### Diisopropyl-1,1'-biphenyl:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

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### Distillates (petroleum), hydrotreated light:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### Permethrin:

- |  |   |   |
|--|---|---|
| Toxicity to fish   | : | LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l<br>Exposure time: 96 h  |
| Toxicity to daphnia and other aquatic invertebrates                    | : | EC50 (Daphnia magna (Water flea)): 0.0001 mg/l<br>Exposure time: 48 h   |
| Toxicity to algae/aquatic plants                                       | : | ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13 mg/l<br>Exposure time: 72 h<br><br>EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023 mg/l<br>Exposure time: 72 h |
| Toxicity to fish (Chronic toxicity)                                    | : | NOEC (Danio rerio (zebra fish)): 0.00041 mg/l<br>Exposure time: 35 d<br>Method: OECD Test Guideline 210   |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 0.0047 µg/l<br>Exposure time: 21 d<br>Method: OECD Test Guideline 211  |
| Toxicity to microorganisms   | : | EC50: > 1,000 mg/l<br>Exposure time: 3 h  |

##### Diisopropyl-1,1'-biphenyl:

- |   |   |   |
|---|---|---|
| Toxicity to fish                                    | : | LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.01 mg/l<br>Exposure time: 96 h<br>Method: Directive 67/548/EEC, Annex V, C.1.<br>Remarks: Based on data from similar materials  |
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): > 100 mg/l<br>Exposure time: 48 h<br>Test substance: Water Accommodated Fraction<br>Method: OECD Test Guideline 202                          |
| Toxicity to algae/aquatic plants                    | : | EC50 (Raphidocelis subcapitata (freshwater green alga)): > 0.01 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201<br>Remarks: Based on data from similar materials |

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NOEC (Raphidocelis subcapitata (freshwater green alga)): > 0.01 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

### Distillates (petroleum), hydrotreated light:

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 250 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Acartia tonsa (Calanoid copepod)): > 3,193 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction

Toxicity to algae/aquatic plants : EL50 (Skeletonema costatum (marine diatom)): > 3,200 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction

NOELR (Skeletonema costatum (marine diatom)): 993 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Ceriodaphnia dubia (water flea)): > 70 mg/l  
Exposure time: 8 d  
Test substance: Water Accommodated Fraction

Toxicity to microorganisms : EC50: > 100 mg/l  
Exposure time: 3 h

### Calcium bis(dodecylbenzenesulphonate), branched:

Toxicity to fish : LC50 : > 1 - 10 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 62 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: The test was conducted equivalent or similar to guideline

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 10 - 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

NOEC (Raphidocelis subcapitata (freshwater green alga)): > 0.1 - 1 mg/l

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Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): > 0.1 - 1 mg/l  
Exposure time: 72 d  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 1 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: The test was conducted according to guideline  
Based on data from similar materials

### Persistence and degradability

#### Components:

##### **Permethrin:**

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301F

##### **Distillates (petroleum), hydrotreated light:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 82 %  
Exposure time: 24 d  
Method: OECD Test Guideline 301F

##### **Calcium bis(dodecylbenzenesulphonate), branched:**

Biodegradability : Result: Not readily biodegradable.  
Remarks: Based on data from similar materials

### Bioaccumulative potential

#### Components:

##### **Permethrin:**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 570

Partition coefficient: n-octanol/water : log Pow: 4.67

##### **Diisopropyl-1,1'-biphenyl:**

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Partition coefficient: n-octanol/water : log Pow: 6.67  
Remarks: Calculation

### Mobility in soil

No data available

### Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.  
Do not dispose of waste into sewer.

Contaminated packaging : Follow advice on product label and/or leaflet.  
Empty containers retain residue and can be dangerous.  
Do not re-use empty containers.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number : UN 3295  
Proper shipping name : HYDROCARBONS, LIQUID, N.O.S.  
Class : 3  
Packing group : III  
Labels : 3  
Environmentally hazardous : yes

#### IATA-DGR

UN/ID No. : UN 3295  
Proper shipping name : Hydrocarbons, liquid, n.o.s.  
Class : 3  
Packing group : III  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 366  
Packing instruction (passenger aircraft) : 355

#### IMDG-Code

UN number : UN 3295  
Proper shipping name : HYDROCARBONS, LIQUID, N.O.S.  
(Permethrin, Nonylphenol, ethoxylated)  
Class : 3  
Packing group : III  
Labels : 3  
EmS Code : F-E, S-D

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Marine pollutant : yes

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### Domestic regulation

#### 49 CFR

UN/ID/NA number : UN 3295  
Proper shipping name : Hydrocarbons, liquid, n.o.s.  
  
Class : 3  
Packing group : III  
Labels : FLAMMABLE LIQUID  
ERG Code : 128  
Marine pollutant : yes(Permethrin, Nonylphenol, ethoxylated)  
Remarks : THE COMBUSTIBLE LIQUID EXCEPTION MAY BE USED FOR PACKAGES <119 GAL.

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
Acute toxicity (any route of exposure)  
Respiratory or skin sensitization  
Specific target organ toxicity (single or repeated exposure)  
Aspiration hazard  
Skin corrosion or irritation  
Serious eye damage or eye irritation

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Permethrin	52645-53-1	36.8 %
Nonylphenol, ethoxylated	9016-45-9	>= 3 - < 5 %

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### US State Regulations

#### Pennsylvania Right To Know

Permethrin	52645-53-1
Diisopropyl-1,1'-biphenyl	69009-90-1
Distillates (petroleum), hydrotreated light	64742-47-8
Triacetin	102-76-1
Nonylphenol, ethoxylated	9016-45-9
2-Methyl-1-propanol	78-83-1

#### California List of Hazardous Substances

Distillates (petroleum), hydrotreated light	64742-47-8
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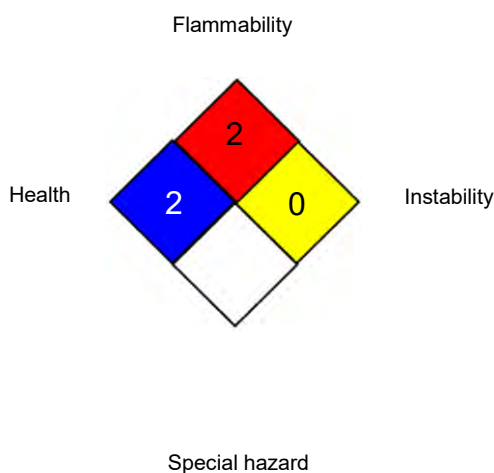
#### California Permissible Exposure Limits for Chemical Contaminants

Distillates (petroleum), hydrotreated light	64742-47-8
Product Type	: Insecticides, acaricides and products to control other arthropods
Active substance	: 383 g/l Permethrin

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



#### HMIS® IV:

HEALTH	*	3
FLAMMABILITY		2
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### Full text of other abbreviations

NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday

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OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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