

	SAFETY DATA SHEET	Version: R0001.0001
	Lambdastar Urban Cap	Date of issue: 2020-01-21
		Revision date: Not applicable
		Change List:

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1. IDENTIFICATION

A. Product name

- Lambdastar Urban Cap

B. Recommended use and restriction on use

- General use : Insecticide
 - Restriction on use : Do not other than recommended use

C. Manufacturer / Supplier / Distributor information

o Manufacturer information

- Company name : LG Chem, Ltd.
 - Address : 19, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
 - Dept. : process technology team
 - Telephone number : 82-52231-5208
 - Emergency telephone number : 82-52231-5208
 - Fax number :
 - E-mail address : ryookh@lgchem.com

o Supplier/Distributor information

- Company name : LG Chem, Ltd.
 - Address : 19, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
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2. HAZARD IDENTIFICATION

A. GHS Classification

- Acute toxicity (oral) : Category4
 - Serious eye damage/irritation : Category2A
 - Germ cell mutagenicity : Category1B
 - Carcinogenicity : Category1B
 - Reproductive toxicity : Category2
 - Acute aquatic toxicity : Category1
 - Chronic aquatic toxicity : Category1

B. GHS label elements

o Hazard symbols



o Signal words

- Danger

o Hazard statements

- H302 Harmful if swallowed
 - H319 Causes serious eye irritation
 - H340 May cause genetic defects

- H350 May cause cancer
- H361 Suspected of damaging fertility or the unborn child
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects

o **Precautionary statements**

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.

2) Response

- P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician 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.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P330 Rinse mouth.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification)

o **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
λ-Cyhalothrin	-	91465-08-6	9.7
Secret	Secret	-	90 ~ 100

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.
- Remove contaminated clothing, shoes and isolate.
- Wear gloves when washing the patient, and please avoid contact with contaminated clothing.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Do not touch spilled material. Stop leak if you can do it without risk.
- Remove all sources of ignition.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Avoid entering to sewers or water system.
- Prevent the influx to waterways, sewers, basements or confined spaces.
- Spilled material should be treated as a potential risk of waste collected.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Comply with all applicable laws and regulations for handling
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Operators should wear antistatic footwear and clothing.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not use damaged containers.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- No open fire.
- Prevent static electricity and keep away from combustible materials or heat sources.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Do not eat, drink or smoke when using this product.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- **ACGIH TLV**
 - [Secret] : TWA 0.001 ppm , STEL 0.005 ppm
 - [Secret] : TWA, 0.005 ppm (0.051 mg/m3)
- **OSHA PEL**
 - [Secret]:(C) 0.02 (C) 0.2
 - [Secret]:(C) 0.02 (C) 0.14

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- **Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- **Hand protection**
 - Wear appropriate glove.
- **Skin protection**
 - Wear appropriate clothing.
- **Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	liquid
- Color	light brown
B. Odor	Not available
C. Odor threshold	Not available
D. pH	5.0 ~ 7.0
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	> 250 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	1.02 ~ 1.03
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- **(Respiratory tracts)**
 - Not available
- **(Oral)**
 - Harmful if swallowed
- **(Eye·Skin)**
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- **Acute toxicity**
 - * **Oral**
 - Product (ATEmix) : 300mg/kg < ATEmix <= 2000mg/kg
 - [Secret] : LD50 > 90000 mg/kg Rat (KOSHA)
 - [λ-Cyhalothrin] : LD50 56 mg/kg Rat
 - [Secret] : LD50 = 8400 mg/kg Rat (RTECS)

- [Secret] : LD50 22,000 mg/kg Rat (ECHA)
- [Secret] : LD50 > 20000 mg/kg Rat (HSDB)
- [Secret] : LD50 3800 mg/kg Rat
- [Secret] : LD50 5800 mg/kg Rat (ChemIDPlus)
- [Secret] : LD50 > 17000 mg/kg Rat (NLM)
- [Secret] : LD50 = 242 mg/kg Rat
- [Secret] : LD50 45000 mg/kg Rat (Rhone-Poulenc)
- [Secret] : LD50 = 49000 mg/kg Rat (Thomson)
- [Secret] : LD50 > 10000 mg/kg Rat (SIDS)
- [Secret] : LD50 31600 mg/kg Rat
- [Secret] : LD50 342 mg/kg Rat(female) (NITE)
- [Secret] : LD50 > 10000 mg/kg Rat, (LD50 >2000 mg/kg Rat (ECHA))
- * Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [λ-Cyhalothrin] : LD50 632 mg/kg Rat
 - [Secret] : LD50 > 2000 mg/kg Rabbit (IUCLID)
 - [Secret] : LD50 20,800 mg/kg Rabbit (HSDB, IUCLID)
 - [Secret] : LD50 > 16000 mg/kg Rabbit
 - [Secret] : LD50 >9400 mg/kg Rabbit (ECD TG 402, GLP) (ECHA)
 - [Secret] : LD50 > 2000 mg/kg Rabbit (NLM)
 - [Secret] : LD50 = 360 mg/kg rabbit
 - [Secret] : LD50 > 9500 mg/kg Rabbit (Thomson)
 - [Secret] : LD50 64 mg/kg Rat (HSDB)
 - [Secret] : LD50 > 10000 mg/kg Rabbit, (LD50 >9400 mg/kg Rabbit (ECHA))
- * Inhalation**
 - Product (ATEmix) : Not available
 - [Secret] : LC50 > 5.61 mg/L 4 hr Rat (ECHA), Mist LC50= 3400 ppm 4hr Rat (IUCLID)
 - [Secret] : steam LC50 0.234 mg/l 4 hr Rat (OECD TG403, GLP, Analogous substance CAS No. 26471-62-5TDI)(ECHA)
 - [Secret] : Steam LC50 = 0.49 mg/L 4 hr Rat (ChemIDPlus)
 - [Secret] : dust LC50 0.369 mg/l 4 hr Rat
 - [Secret] : LC50 > 5 mg/m³ 6 hr Rat (Units conversion: LC50>6.12 mg/L/4h)
 - [Secret] : Steam LC50 0.49 mg/l 4 hr Rat
- **Skin corrosion/irritation**
 - Not available
- **Serious eye damage/irritation**
 - Causes serious eye irritation
- **Respiratory sensitization**
 - Not available
- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * IARC**
 - [Secret] : Group 3
 - * OSHA**
 - Not available
 - * ACGIH**
 - [Secret] : A3
 - * NTP**
 - Not available
 - * EU CLP**
 - [Secret] : Carc. 2
 - [Secret] : Carc. 1B (Note P)
- **Germ cell mutagenicity**
 - May cause genetic defects
- **Reproductive toxicity**
 - Suspected of damaging fertility or the unborn child
- **STOT-single exposure**

- Not available
- **STOT-repeated exposure**
 - Not available
- **Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [λ -Cyhalothrin] : LC50 0.00021 mg/l 96 hr *Lepomis macrochirus* (Insoluble substances (Water solubility 1mg / L less than) acute toxicity is not classified) (ECOTOX)
 - [Secret] : LC50 = 9.22 mg/l 96 hr *Oncorhynchus mykiss* (IUCLID)
 - [Secret] : LC50 = 710 mg/l 96 hr *Oncorhynchus mykiss* (ECOTOX)
 - [Secret] : LC50 133 mg/l 96 hr *Oncorhynchus mykiss*(Analogous substance CAS No. 26471-62-5) (ECHA)
 - [Secret] : LC50 = 37.79 mg/l 96 hr *Lepomis macrochirus* (ECOTOX)
 - [Secret] : LC50 420 mg/l 96 hr *Oncorhynchus mykiss* (ECOTOX)
 - [Secret] : LC50 7960 mg/l 96 hr *Pimephales promelas* (OECD SIDS)
 - [Secret] : LC50 20 mg/l 96 hr *Oncorhynchus mykiss* (ECOTOX)
- **Crustaceans**
 - [λ -Cyhalothrin] : EC50 0.0000068 mg/l 48 hr insoluble (ECOTOX)
 - [Secret] : EC50 = 6.14 mg/l 48 hr *Daphnia magna* (IUCLID)
 - [Secret] : EC50 = 1000 mg/l 48 hr *Daphnia magna* (ECOTOX)
 - [Secret] : EC50 10.2 mg/l 21 day (ECOTOX)
 - [Secret] : LC50 12.5 mg/l 48 hr *Daphnia magna*(OECD TG 202, Analogous substance CAS No. 26471-62-5) (ECHA)
 - [Secret] : LC50 = 44.5 mg/l 48 hr *Daphnia magna* (ECOTOX)
 - [Secret] : LC50 2564 mg/l 48 hr *Daphnia magna* (ECOTOX)
 - [Secret] : EC50 1.4 mg/l 48 hr *Daphnia magna* (NLM;HSDB)
- **Algae**
 - [Secret] : EC50 = 19 mg/l 72 hr *Selenastrum capricornutum* (IUCLID)
 - [Secret] : EC50 = 1000 mg/l 72 hr *Selenastrum capricornutum* (NITE)
 - [Secret] : EC50 3230 mg/l 96 hr *Skeletonema costatum*(Analogous substance CAS No. 26471-62-5)(ECHA)
 - [Secret] : ECHA ErC50 0.37 mg/l 72 hr *Selenastrum capricornutum*(OECD Guideline 201, GLP)

B. Persistence and degradability

- **Persistence**
 - [Secret] : log Kow = -1.38
 - [λ -Cyhalothrin] : log Kow 7 (NLM;ChemIDPlus)
 - [Secret] : log Kow = 2.1 ~ 6 (Estimate) (IUCLID)
 - [Secret] : log Kow = -1.4 (IUCLID)
 - [Secret] : log Kow 0.21
 - [Secret] : log Kow 10.46 (Estimate)
 - [Secret] : log Kow -3 (OECD SIDS)
 - [Secret] : log Kow -0.64
 - [Secret] : log Kow 5.22 (Estimate)
- **Degradability**
 - [Secret] : BOD5/COD = 0.43
 - [Secret] : 0(ECHA)
 - [Secret] : BOD 0

C. Bioaccumulative potential

- **Bioaccumulative potential**
 - [λ -Cyhalothrin] : BCF 1063 (Estimate)
 - [Secret] : BCF < 1 (SIDS)
 - [Secret] : BCF 380 (NITE)
 - [Secret] : BCF 0.5 (OECD SIDS)
 - [Secret] : BCF 0.6 (NLM;HSDB)
 - [Secret] : BCF 1283 (Estimate)

- **Biodegradation**

- [λ-Cyhalothrin] : Non- biodegradable
- [Secret] : Biodegradability > 60 (%) 10 day (SIDS)
- [Secret] : 50 ~ 90 % 2 hr (27°C)(ECHA)
- [Secret] : (Non - biodegradability-It does not decompose. High potential to be scaled in vivo)

D. Mobility in soil

- [λ-Cyhalothrin] : Koc 151200 (Estimates, Can be adsorbed in the soil)
- [Secret] : Koc 33890 (Estimates, Can be adsorbed in the soil)

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- It shall be treated by incineration

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG Packing group

- III

E. Marine pollutant

- Applicable
- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- Air transport(IATA): Not subject to IATA regulations.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- **POPs Management Law**
 - Not applicable
- **Information of EU Classification**
 - * **Classification**

- [Secret] : H312,H302,H335,H315,H318,H400
- [λ-Cyhalothrin] : H330,H301,H312,H410
- [Secret] : H351,H332,H373,H319,H335,H315,H334,H317
- [Secret] : H351,H330,H319,H335,H315,H334,H317,H412
- [Secret] : H350,H340,H304
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - [Secret] : 45.3599 kg 100 lb
 - [Secret] : 2267.995 kg 5000 lb
 - * **EPCRA Section 302 (40CFR355.30)**
 - [Secret] : 226.7995 kg 500 lb
 - * **EPCRA Section 304 (40CFR355.40)**
 - [Secret] : 45.3599 kg 100 lb
 - * **EPCRA Section 313 (40CFR372.65)**
 - [Secret] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2020-01-21

C. Revision number and Last date revised

- Not applicable

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).