

Safety Data Sheet(SDS)

1. Identification of the substance/mixture and of the company/undertaking

- 1) Product identifier : Lambdastar ultra Cap 9.7% CS
- 2) Relevant identified uses of the substance or mixture and uses advised against
 - Relevant identified uses
48.Others (Insecticide)
 - Uses advised against
- 3) Supplier information
 - Company name [Manufacture]
Company : LG Chem
Address : 19, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea

Emergency number : 82-52231-5208
 - Company name [Importer]
Company : LG Chem
Address : 19, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea

Emergency number : 82-52231-5208
 - Company name [Distributor]
Company : FarmHannong America, Inc
Address : 910 Sylvan Ave, STE 160, Englewood Cliffs, NJ 07632, USA

Emergency number : 1 201-816-2119

2. HAZARD IDENTIFICATION

- 1) Hazard classification
 - Acute toxicity(Inhalation:Dust/mist) Category 4
 - Serious eye damage/eye irritation Category 2B
 - Hazardous to the aquatic environment, long-term (chronic) Chronic 2
- 2) Allocation label elements
Hazard pictograms



- WARNING

Hazard statements

H320 Causes eye irritation

H332 Harmful if inhaled

H411 Toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention

P261 Avoid breathing mist/vapours/spray.

P264 Wash eye thoroughly after handling.

P271 Use only outdoors or in a wellventilated area.

- Response

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 If you feel uncomfortable, receive medical institutions and doctors' consultation.

P337+P313 If eye irritation persists: Get medical advice/attention.

3) Other hazards

o Product NFPA Level

Health	Flamm ability	Reactivity
2	0	0

(※ 0 = Insufficient , 1 = Slightly , 2 = ordinary , 3 = Highness , 4 = Very high)

3. Composition/Information on ingredients

Components	Common name	CAS No.	PCT(wt%)
λ-Cyhalothrin	λ-Cyhalothrin	91465-08-6	9.7
solvesso 100	Aromatic hydrocarbons, C9	128601-23-0	5~10
NK-DKXG	Montmorillonite	1318-93-0	30~40
	Bronopol	52-51-7	
	Propylene glycol	57-55-6	
	Siloxanes and Silicones, di-Me	63148-62-9	
	Naphthalenesulfonic acid polymer with formaldehyde sodium salt	9084-06-4	
	Xanthan gum	11138-66-2	
	Water	7732-18-5	
Water	Water	7732-18-5	rest

4. FIRST AID MEASURES

1) Following eye contact

- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

- Seek immediate medical assistance.
- 2) Following skin contact
- For minor skin contact, avoid spreading material on unaffected skin.
 - In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

 - Remove and isolate contaminated clothing and shoes.
 - Seek immediate medical assistance.
- 3) Following inhalation
- Administer oxygen if breathing is difficult.
 - Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
 - Give artificial respiration if victim is not breathing.
 - If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
 - Keep victim warm and quiet.
 - Move to fresh air.
 - Seek immediate medical assistance.
- 4) Following ingestion
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
 - Seek immediate medical assistance.
- 5) Advice to physician
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

- 1) Suitable (and unsuitable) extinguishing media
- Suitable extinguishing media
 - CO₂.
 - Dry chemical.
 - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
 - Use dry sand or earth to smother fire.
 - Water spray.
 - Unsuitable extinguishing media
 - Direct water.
- 2) Special hazards arising from the substance or mixture
- Pyrolytic product
 - During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
 - Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
 - Risk of fire and explosion
 - Containers may explode when heated.
 - Some may burn but none ignite readily.
 - Other
 - Contact may cause burns to skin and eyes.
 - Fire may produce irritating and/or toxic gases.
 - Inhalation of Asbestos dust may have a damaging effect on the lungs.

- Some liquids produce vapors that may cause dizziness or suffocation.

3) Special protective equipment for firefighters

- Dike fire-control water for later disposal; do not scatter the material.
- Evacuate area and fight fire from a safe distance.
- Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.
- Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Fire involving Tanks: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Move containers from fire area if you can do it without risk.
- Rescuers should put on appropriate protective gear.
- Substance may be transported in a molten form.

6. ACCIDENTAL RELEASE MEASURES

1) Health considerations and protective equipment

- Clean up spills immediately, observing precautions in Protective Equipment section.
- Cover with plastic sheet to prevent spreading.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Do not touch or walk through spilled material.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Please note that materials and conditions to be avoided.
- Prevent dust cloud.
- Stop leak if you can do it without risk.

2) Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.
- Runoff may cause pollution.

3) For cleaning up

- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.
- Absorb the liquid and scrub the area with detergent and water.
- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- Large Spill: Dike far ahead of liquid spill for later disposal.
- Reduce airborne dust and prevent scattering by moistening with water.
- Small Spill: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. HANDLING AND STORAGE

1) Precautions for safe handling

- CAUTION: High temperature.
- Follow all MSDS/label precautions even after container is emptied because they may retain product residues.
- Handling refer to engineering control/personal protection section.
- Please note that materials and conditions to be avoided.
- Use only in a well-ventilated area.

2) Conditions for safe storage (including any incompatibilities)

- Empty drums should be completely drained, properly banded, and promptly returned to a drum reconditioner, or properly disposed of.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1) Chemical exposure limits, Biological exposure standard

Components	Occupational exposure limits	ACGIH	Biological standard
λ-Cyhalothrin	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Aromatic hydrocarbons, C9	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Montmorillonite	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Bronopol	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Propylene glycol	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Siloxanes and Silicones, di-Me	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Naphthalenesulfonic acid polymer with formaldehyde sodium salt	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Xanthan gum	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Water	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable

2) Appropriate engineering controls

- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

3) Personal protection equipment

- Respiratory protection
 - If high frequency of use or exposure, wear air respirator.
 - Wear breathing protection, which needs a confirmation from the Korea Occupational Safety and Health Agency.
- Eye protection
 - Wear suitable protective goggles and face shields.
- Hand protection
 - Wear suitable protective gloves.
- Body protection
 - Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Beige
Physical state	Liquid
Colour	No data available
Odour	Aromatic

Odour threshold	No data available
pH	6
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available

Evaporation rate	No data available
Flammability(solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Solubility(ies)	No data available
Vapour density	No data available
Relative density	0.99 ~ 1.05
n-octanol/water partition coefficient	No data available
Auto ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight(mass)	No data available

10. STABILITY AND REACTIVITY

1) Stability and hazardous reactivity

- Contact may cause burns to skin and eyes.
- Containers may explode when heated.
- Fire may produce irritating and/or toxic gases.
- Fire may produce irritating, corrosive and/or toxic gases.
- Inhalation of Asbestos dust may have a damaging effect on the lungs.
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Some liquids produce vapors that may cause dizziness or suffocation.
- Some may burn but none ignite readily.

2) Conditions to avoid

- Heat.
- Ignition source(heat, spark, flame, etc.).

3) Incompatible materials

- Combustibles, reducing material.

4) Hazardous decomposition products

- Corrosive/toxic fume.
- During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
- Irritating and/or toxic gas.
- Irritating, corrosive and/or toxic gas.

11. TOXICOLOGICAL INFORMATION

1) Exposure route information

- o Inhalation
 - Harmful if inhaled

- Skin Contact
 - Not applicable
- Eye Contact
 - Causes eye irritation
- Ingestion
 - Not applicable

2) Health hazard information

- Acute toxicity
 - Acute toxicity(Oral) PRODUCT : Not classified(ATEmix = 100.412mg/kg)
 - λ-Cyhalothrin : LD50 56 mg / kg experimental species: Rat, Source: NLM;ChemIDPlus
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : LD50 180 mg / kg experimental species: Rat, Source: ChemIDplus
 - Propylene glycol : LD50 22000 mg / kg 22000 mg / kg experimental species: Rat, (the route of administration: gavage, cancer / male), Source: ECHA
 - Siloxanes and Silicones, di-Me : LD50> 17000 mg / kg experimental species: Rat, Source: National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : LD50 3800 mg / kg experimental species: Rat
 - Xanthan gum : LD50 45000 mg / kg experimental species: Rat, Source: Rhone-Poulenc
 - Water : LD50 90000 mg / kg experimental species: Rat (LD50> 90 ml / kg (Rat))
 - Acute toxicity(Dermal) PRODUCT : Not classified(ATEmix = 301.237mg/kg)
 - λ-Cyhalothrin : LD50 632 mg / kg experimental species: Rat, Source: NLM;ChemIDPlus
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : LD50 1600 mg / kg experimental species: Rat, Source: Toxic substance information summary
 - Propylene glycol : LD50> 2000 mg / kg experimental species: Rabbit, Source: ECHA
 - Siloxanes and Silicones, di-Me : LD50> 2000 mg / kg experimental species: Rabbit, Source: National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : LD50> 16000 mg / kg experimental species: Rabbit
 - Xanthan gum : No data available
 - Water : No data available
 - Acute toxicity(Inhalation:Gases) PRODUCT : Not classified
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : No data available
 - Propylene glycol : No data available
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : No data available
 - Acute toxicity(Inhalation:Vapours) PRODUCT : Not classified

- λ-Cyhalothrin : No data available
- Aromatic hydrocarbons, C9 : No data available
- Montmorillonite : No data available
- Bronopol : No data available
- Propylene glycol : No data available
- Siloxanes and Silicones, di-Me : No data available
- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available

- Xanthan gum : No data available
- Water : No data available
- Acute toxicity(Inhalation:Dust/mist) PRODUCT : Category 4
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : LC50 ≥ 0.588 mg / l 4 hr experiment Species: Rat, Source: ECHA
 - Propylene glycol : LC50 > 317042 mg / m³ 2 hr test Species: Rabbit, Source: ECHA
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : No data available
- Skin corrosion/irritation PRODUCT : Not classified
 - λ-Cyhalothrin : This substance stimulates the eyes and skin and respiratory system., Source: (ICSC)
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : Skin corrosion / irritation test using rabbits (OECD TG404, GLP) is shown as the result of irritation (primary irritation index 6.2), Source: ECHA
 - Propylene glycol : primary dermal irritation index (PDII): 0/8, no irritant, Rabbit, OECD TG 404, Source: ECHA
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : Not applicable
- Serious eye damage/eye irritation PRODUCT : Category 2B
 - λ-Cyhalothrin : This substance stimulates the eyes and skin and respiratory system., Source: (ICSC)
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : bronopol 5% solution in the eye of the rabbit (solvent: polyethylene glycol 400) for knocking a result, a strong start polarity (appropriately discharge and conjunctival redness and swelling) after one hour off has been reported depression in all the test animals except for one to seven days the Japanese taken place. Judging from these results, bronopol is represented by a corrosive eye irritant, Source: NLM, HSDB
 - Propylene glycol : Rabbit, corneal opacity (0), iris (0.1), conjunctival hyperemia (0.4), conjunctival edema (0), OECD TG 405, Source: ECHA
 - Siloxanes and Silicones, di-Me : Kids STANDARD Draai amount Rabbit Test: 100mg / 1H; Reaction: Mild (light stimulation), Source: Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available

- Xanthan gum : If irritation, Source: THOMSON
- Water : Not applicable
- Respiratory sensitization PRODUCT : Not classified
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : No data available
 - Propylene glycol : No data available
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : Not applicable
- Skin sensitization PRODUCT : Not classified
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : Skin sensitization test using guinea pig (analogy to OECD TG 406) the result is shown as a non-sensitizer, Source: ECHA
 - Propylene glycol : People / Draize Test: Not irritable, Source: International Programme on Chemical Safety(IPCS INCHEM)(<http://www.inchem.org/>)
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : Not applicable
- Carcinogenicity PRODUCT : Not classified
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : No data available
 - Propylene glycol : No data available
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : No data available
- Germ cell mutagenicity PRODUCT : Not classified
 - λ-Cyhalothrin : Vivo-gene mutation test / bone marrow / dose: 0.8; 3.1; 6.1 MG / KG / positive, structural change, in vivo - all from the micronucleus test / bone marrow, colon crypt epithelial cells polychromatic erythrocytes, bone marrow is polychromatic erythrocytes / Injection amount: 0.8; 3.06; 6.12 MG / KG / training, Source: (NLM;CCRIS)
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : Some Salmonella / micro analysis of the test results negative observation, Source: HSDB
 - Bronopol : Dominant lethal Using an in vivo mouse (male and female) test results, voice (according to the method of Bateman AJ and Bateman AJ and Epstein SS) micronucleus test results using the in vivo mammalian erythrocyte, voice (OECD TG 474, GLP) in vivo mammalian unscheduled DNA synthesis using the liver cells (UDS) test, negative (OECD TG 486, GLP), Source: ECHA

- Propylene glycol : in vivo - chromosome aberration test using mammalian bone marrow cells: negative (rat, male) in vitro - reverse mutation test using bacteria: negative (TA92, TA94, TA98, TA100, TA1535, TA1537, that metabolic activation system), Source: ECHA

- Siloxanes and Silicones, di-Me : No data available

- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available

- Xanthan gum : No data available

- Water : Not applicable

○ Reproductive toxicity PRODUCT : Not classified

- λ-Cyhalothrin : Rat / TDLo - Route: Oral; Injection amount: 5 mg / kg; Duration: between females Multiplex / Toxicity: parental influence - Other effects on male and maternal effects - Other effects, Source: (TOMES;RTECS)

- Aromatic hydrocarbons, C9 : No data available

- Montmorillonite : Reproductive toxicity studies using rats results not observed significant abnormality, Source: HSDB

- Bronopol : Rats second-generation reproductive toxicity test results using (male and female), their parents are not systemic toxicity, reproductive toxicity has been found, but found. NOAEL (three children 1,2) = 200 mg / kg bw / day, NOAEL (parents) = 70 mg / kg bw / day (SOP of the International Research and Development Corporation, GLP) developmental toxicity test results in the high-dose group reduction of food intake and weight gain during pregnancy, fetal weight loss, cardiovascular instrument type or the sternum and malformation of the spine, skeletal deformity. NOEAL (maternal toxicity) = 40 mg / kg bw / day, NOEAL (recordable) = 40 mg / kg bw / day, (EPA OPP 83-3, GLP), Source: ECHA

- Propylene glycol : Overall the reproductive effects are not observed, mouse, equivalent or similar to Guideline: OECD TG 414, GLP, Source: HSDB, ECHA

- Siloxanes and Silicones, di-Me : No data available

- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available

- Xanthan gum : No data available

- Water : Not applicable

○ Specific target organ toxicity single exposure PRODUCT : Not classified

- λ-Cyhalothrin : That the substance can cause affecting the peripheral nervous system called a seizure disorder and functions, Source: (ICSC)

- Aromatic hydrocarbons, C9 : No data available

- Montmorillonite : The low quartz content bentonite, montmorillonite appears to seolchwi flow is dependent cytotoxicity to the resulting capacity and the particle size of the injected dose in a single center, a temporary local inflammation, as well as contain the swelling also consequently increases the lung weight, Source: HSDB

- Bronopol : Rat oral toxicity test results using (male and female), stiffness, crouch, show an irregular respiration and ataxia, lethargy, ptosis symptoms, mortality, weight gain, gastric chweyang, liver, Xinjiang bleeding symptoms. (OECD TG 401, GLP) dermal toxicity test using rats (number), skin irritation, irritation of the president and the lungs. Visible symptoms of scab. = Severe dermatitis LD50, ulcers by about 1600 mg / kg bw (GLP) inhalation found, appears include edema, dyspnea, pulmonary hemorrhage, Source: ECHA, toxic summary information

- Propylene glycol : Oral: also general signs of toxicity comprises the balance loss, depression, pain, coma, and died after the last administration of glycolate after `` large capacity large dose of the glycol shortly death state '. / Inspection of the internal organs, and has been a vocal essentially exclude hematological region of the small intestine. Subtle changes in the kidneys were found at a minimum, the nuclear cortical degeneration of the cytoplasm increased and the vacuum has occurred. Between the plants it showed only mild congestion and hypertension do not have local changes. Transdermal coma, diarrhea, fecal and ptosis were observed in isolated cases., Source: ECHA

- Siloxanes and Silicones, di-Me : No data available

- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available

- Xanthan gum : No data available
- Water : Not applicable
- Specific target organ toxicity repeated exposure PRODUCT : Not classified
 - λ-Cyhalothrin : TDLo-route: oral; injection volume: 1137.5 mg / kg / 13W intermittent / toxic effects: Action - food intake (animal), nutrition, and overall metabolism - decrease in weight, Source: (TOMES; RTECS)
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : Repeated toxicity test using rats, such as the incision of the rat inflammation observed with 440mg / kg when injected foreign body granuloma formation and the development of collagen synthesis, Source: HSDB
 - Bronopol : Rats repeated oral toxicity test results using (male and female), body weight and food consumption decreased lesion above a high dose, show symptoms of squamous metaplasia, the death of the salivary glands. NOAEL = 7 mg / kg bw / day rabbit dermal toxicity test repeated using the (male and female), severe skin irritation accompanied by redness and swelling, but no deaths and physical symptoms of toxicity .NOAEL = approximately 0.2% of the items in the acute toxic effects It does not apply in the classification, Source: ECHA
 - Propylene glycol : Oral (chronic): As a result of oral exposure by rats, not materialized catastrophic effects, Rat dermal (chronic): As a result of dermal exposure via the mouse, does not embody the harmful effects, Mouse intake (sub-chronic): Deadly Impact this does not materialize, Rat, Source: ECHA
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : Not applicable
- Aspiration hazard PRODUCT : Not classified
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : No data available
 - Propylene glycol : No data available
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : Not applicable

12. ECOLOGICAL INFORMATION

1) Aquatic toxicity

- Fish>PRODUCT : Not classified
 - λ-Cyhalothrin : LC50 0.00021 mg / ℓ 96 hr *Lepomis macrochirus* (I because soluble substance (solubility less than 1mg / L) No acute toxicity classification), Source: ECOTOX
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : LC50 20 mg / ℓ 96 hr *Oncorhynchus mykiss* (NOEC 21.5mg / L time 49day test species *Oncorhynchus mykiss*), Source: NCIS
 - Propylene glycol : LC50 40613 mg / ℓ 40613 mg / ℓ 96 hr *Oncorhynchus mykiss* (), (Environment Canada (1990), Equation ring, fresh water, GLP), Source: ECHA
 - Siloxanes and Silicones, di-Me : LC50 37.79 mg / ℓ 96 hr *Lepomis macrochirus* (), Source: The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available

- Xanthan gum : LC50 420 mg / ℓ 96 hr Oncorhynchus mykiss (), Source: ECOTOX
- Water : No data available
- Crustacea>PRODUCT : Not classified
 - λ-Cyhalothrin : EC50 0.0000068 mg / ℓ 48 hr Other (I not so acute toxicity classification soluble substance (solubility less than 1mg / L)), Source: ECOTOX
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : EC50 1.4 mg / ℓ 48 hr Daphnia magna (NOEC 0.53mg / L (nominal) 0.27 mg / L (measured). 21day test species Daphnia magna), Source: ECHA
 - Propylene glycol : LC50 18340 mg / ℓ 18340 mg / ℓ 48 hr Ceriodaphnia dubia (), (EPA 600 / 4-90 / 0-27, exponential expression, fresh water), Source: ECHA
 - Siloxanes and Silicones, di-Me : LC50 44.5 mg / ℓ 48 hr Daphnia magna (), Source: The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : EC50> 10.2 mg / ℓ 21 day (), Source: ECOTOX
 - Xanthan gum : No data available
 - Water : No data available
- Aquatic algae>PRODUCT : Not classified
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : ErC50 0.02 mg / ℓ 72 hr Scenedesmus subspicatus (), Source: NCIS
 - Propylene glycol : EC50 34100 mg / ℓ 34100 mg / ℓ 48 hr (), (OECD TG 201, exponential expression, fresh water, GLP), Source: ECHA
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : No data available

2) Persistence and degradation

- n-octanol water partition coefficient>PRODUCT : Chronic 2
 - λ-Cyhalothrin : 7 log Kow (), Source: NLM;ChemIDPlus
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : 0.18 log Kow (at 25 ° C), Source: ECHA
 - Propylene glycol : 0085 0085 () (Pow, 20.5 °C), Source: ECHA
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : (None)
 - Xanthan gum : No data available
 - Water : -1.38 log Kow ()
- Degradation>PRODUCT : Chronic 2
 - λ-Cyhalothrin : No data available
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available
 - Bronopol : No data available
 - Propylene glycol : No data available
 - Siloxanes and Silicones, di-Me : No data available
 - Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
 - Xanthan gum : No data available
 - Water : No data available
- Biodegradation>PRODUCT : Chronic 2
 - λ-Cyhalothrin : (Recalcitrant - high potential to accumulate inside does not decompose in vivo (estimated)), Source: EPI SUITE
 - Aromatic hydrocarbons, C9 : No data available
 - Montmorillonite : No data available

- Bronopol : 80% ~ 70% 28 day (OECD Guideline 301 B, GLP), Source: ECHA
- Propylene glycol : 81.7 01 81.7 01 28 day (), (CO2 evolution), Source: ECHA
- Siloxanes and Silicones, di-Me : No data available
- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
- Xanthan gum : No data available
- Water : No data available

3) Bioaccumulative potential>PRODUCT : Chronic 2

- λ-Cyhalothrin : 1063 (possibility estimate, bioconcentration), Source: EPI SUITE
- Aromatic hydrocarbons, C9 : No data available
- Montmorillonite : No data available
- Bronopol : 3.16 ((calculated using SRC BCFWIN v3.01)), Source: ECHA
- Propylene glycol : 0.09 BCF 0.09 BCF (), (BCF), Source: ECHA
- Siloxanes and Silicones, di-Me : No data available
- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
- Xanthan gum : No data available
- Water : No data available

4) Mobility in soil>PRODUCT : Chronic 2

- λ-Cyhalothrin : 151 200 (estimate, which can be adsorbed by the soil), Source: EPI SUITE
- Aromatic hydrocarbons, C9 : No data available
- Montmorillonite : No data available
- Bronopol : Blanket 1416 ~ 388.3 blanket (), Source: ECHA
- Propylene glycol : No data available
- Siloxanes and Silicones, di-Me : No data available
- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
- Xanthan gum : No data available
- Water : No data available

5) Other adverse effects>PRODUCT : Chronic 2

- λ-Cyhalothrin : No data available
- Aromatic hydrocarbons, C9 : No data available
- Montmorillonite : No data available
- Bronopol : Fish: *Oncorhynchus mykiss*, NOEC, 49d, = 21.5 mg / L, LC50, 49d, = 39.1 mg / L, oil expression, OECD Guideline 210, GLP, shellfish: *Daphnia magna*, NOEC, 21d, = 0.27 mg / L, oil expression, OECD guideline 211, GLP, birds: *Skeletonema costatum*, ErC50, 72h, = 0.25 mg / L, NOErC, 72 h, = 0.08 mg / L, exponential expression, ISO guideline 10253, GLP,, Source: ECHA
- Propylene glycol : No data available
- Siloxanes and Silicones, di-Me : No data available
- Naphthalenesulfonic acid polymer with formaldehyde sodium salt : No data available
- Xanthan gum : Harmful to aquatic organisms.
- Water : No data available

13. DISPOSAL CONSIDERATIONS

1) Disposal methods

Every commercial waste producer shall either treat wastes generated from his/her place of business by him/herself or commission the treatment of such wastes to a person who has license for a waste treatment business under Article 26(3), a person who recycles of such wastes under Article 44(2), a person who has installed and operates a waste disposal facility under Article 4 or 5, a person who has completed the registration of a business of discharging wastes into the sea under Article 18 of the Marine Environment Management Act.

2) Precautions (including disposal of contaminated container of package)

Do not allow spill material to enter sewers, storm water drains, soil, etc.

14. TRANSPORT INFORMATION

- 1) UN No. : 3082
 - 2) Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
 - 3) Class or division : 9
 - 4) Packing group : III
 - 5) Marine pollutant : Yes
 - 6) Special safety response for transportation or transportation measure :
 - Emergency measures in case of fire : F-A
 - Emergency measures in the effluent : S-F
- ADR
- Tunnel restriction code : E
- IMDG
- Marine pollutant : Yes
- Air transport(IATA)
- UN No. : 3082
 - Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
 - Class or division : 9
 - Packing group : III

15. REGULATORY INFORMATION

- Global Inventory - USA. Toxic Substances Control Act (TSCA) Chemical Substances Inventory (12 April 2018)
 - Bronopol
 - Propylene glycol
 - Siloxanes and Silicones, di-Me
 - Xanthan gum
 - Water
- ETC regulation - EPCRA (SARA Title III) Section 302 Extremely Hazardous Substance (EHS) (40 CFR 355, Appendix A)

Not applicable
- ETC regulation - OSHA Hazard Communication Standard: On One of the Floor Lists of the OSHA HCS (29 CFR 1910.1200)

Not applicable
- ETC regulation - EPCRA (SARA Title III) Section 313 Toxic Chemical Release Inventory (TRI) Reporting for RY 2013 (as amended Sep. 30, 2014)

Not applicable
- ETC regulation - CERCLA Hazardous Substances [other than radionuclides] (40 CFR 302.4) (as amended by 75 FR 78918, Dec. 17, 2010)

Not applicable
- ETC regulation - RCRA Appendix VII: Hazardous Wastes (40 CFR 261, App. VII, Basis for Listing Hazardous Waste)

Not applicable
- ETC regulation - CERCLA. Radionuclides and their Reportable Quantities (40 CFR 302.4, App. B)

Not applicable

- ETC regulation - RCRA D List of Characteristic Hazardous Wastes (40 CFR 261.21-24)

Not applicable

- ETC regulation - RCRA F List of Hazardous Wastes from Non-Specific Sources (40 CFR 261.31(a)) (as amended by 73 FR 31756, June 4, 2008)

Not applicable

- ETC regulation - RCRA K List of Hazardous Wastes from Specific Sources (40 CFR 261.32)

Not applicable

- ETC regulation - RCRA P List of Hazardous Wastes (40 CFR 261.33(e) and 40 CFR 302 [CERCLA])

Not applicable

- ETC regulation - RCRA U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA], as amended 75 FR 78918, Dec 17, 2010)

Not applicable

- ETC regulation - DOT Hazardous Materials Table Listings (49 CFR 172.101, as amended through October 31, 2013)

- Bronopol

- ETC regulation - EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Respo

Not applicable

16. OTHER INFORMATION

1) Reference

- (ICSC)
- (NLM;CCRIS)
- (TOMES;RTECS)
- ChemIDplus
- Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
- ECHA
- ECHA, toxic summary information
- ECOTOX
- EPA
- EPI SUITE
- HSDB
- HSDB, ECHA
- International Programme on Chemical Safety(IPCS INCHEM)(<http://www.inchem.org/>)
- NCIS
- NLM, HSDB
- NLM;ChemIDPlus
- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- OSHA
- Rhone-Poulenc

- THOMSON
- The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)
- Toxic substance information summary

2) Print date : 2022-04-12

3) Revision date

- o Revised date count : 0
- o Last revised date : 2022-04-12
- o Last revised history :

4) Other