1. IDENTIFICATION OF COMPANY & PRODUCT

Product Name: Lambda-cyhalothrin 4.9% CS
Chemical Name: (S)-cyano-3-phenoxybenzyl (Z)-(1R, 3R)-3-(2-chloro-3, 3, 3-trifluoroprop-1-enyl)-2, 2-dimethylcyclopropanecarboxylate and (R)-cyano-3-phenoxybenzyl (Z)-(1S, 3S)-3-(2-chloro-3, 3, 3-trifluoroprop-1-enyl)-2, 2-dimethylcyclopropanecarboxylate
Brand Name: LADAYAK
Users: Insecticide
Molecular Formula: C_{23}H_{19}ClF_{3}NO_{3}
Manufacturer: CROP LIFE SCIENCE LTD.
Address: Plot No. 5165, 5166, 5151, G.I.D.C., Ankleshwar-393002
Gujarat, India
Tele Fax Number: 91 2646 238479

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Cas #</th>
<th>Percent Or Content(W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lambda-cyhalothrin</td>
<td>91465-08-6</td>
<td>4.9 % W/W</td>
</tr>
<tr>
<td></td>
<td>415-130-7</td>
<td></td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), highly</td>
<td>64742-94-5</td>
<td>1 - 5 % W/W</td>
</tr>
<tr>
<td>aromatic.</td>
<td>265-198-5</td>
<td></td>
</tr>
<tr>
<td>1,2-benzisothiazol-3(2H)-one</td>
<td>2634-33-5</td>
<td>0.05 - 1 % W/W</td>
</tr>
</tbody>
</table>

3. HEALTH HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EU) 1272/2008
Acute toxicity Category 4 H332
Acute toxicity Category 4 H302
Skin sensitization Category 1 H317
Acute aquatic toxicity Category 1 H400
Chronic aquatic toxicity Category 1 H410
Supplemental information: EUH401 to avoid risks to human health and the environment, comply with the instructions for use.
Hazardous components which must be listed on the label:

- Lambda-cyhalothrin
- 1, 2-benzisothiazol-3(2H)-one

R-phrase(s):
- R20/22 Harmful by inhalation and if swallowed.
- R43 May cause sensitization by skin contact.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s):
- S2 Keep out of the reach of children.
- S13 Keep away from food, drink and animal feeding stuffs.
- S20/21 When using do not eat, drink or smoke.
- S35 This material and its container must be disposed of in a safe way.
- S36/37 Wear suitable protective clothing and gloves.
- S57 Use appropriate container to avoid environmental contamination.

Other hazards

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

4. FIRST AID MEASURES

Description of first aid measures

General advice: Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.

Inhalation: Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control center immediately.

Skin contact: Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Ingestion: If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Symptoms: Aspiration may cause pulmonary edema and pneumonitis. Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours.

Indication of any immediate medical attention and special treatment needed

Medical advice: Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. Treat symptomatically.
5. FIRE FIGHTING MEASURES

Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires
Alcohol-resistant foam or Water spray
Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture
As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

Advice for firefighters
Wear full protective clothing and self-contained breathing apparatus. Do not allow run-off from firefighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). If the product contaminates rivers and lakes or drains inform respective authorities.

Reference to other sections
Refer to protective measures listed in sections 7 and 8.
Refer to disposal considerations listed in section 13.

7. HANDLING AND STORAGE

Precautions for safe handling
No special protective measures against fire required. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.

**Conditions for safe storage, including any incompatibilities**

No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs.

: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

**Specific end uses**

Registered Crop Protection products: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

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**8. EXPOSURE CONTROLS/PERSOAL PROTECTION**

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product.

**Exposure controls**

**Engineering measures**: Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. If airborne mists or vapors are generated, use local exhaust ventilation controls. Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit. Where necessary, seek additional occupational hygiene advice.

**Protective measures**: The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice. Personal protective equipment should be certified to appropriate standards.

**Respiratory protection**: A combination gas, vapor and particulate respirator may be necessary until effective technical measures are installed. Protection provided by air-purifying respirators is limited. Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

**Hand protection**: Chemical resistant gloves should be used. Gloves should be certified to an appropriate standard. Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure. The breakthrough time of gloves varies according to the thickness, material and manufacturer. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Suitable material-Nitrile rubber.

**Eye protection**: Eye protection is not usually required. Follow any site specific eye protection policies.
Skin and body protection: Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material. Wash with soap and water after removing protective clothing. Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)

Wear as appropriate: impervious protective suit

### 9. PHYSICAL AND CHEMICAL PROPERTIES

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<tr>
<th>Information on basic physical and chemical properties</th>
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<td>Form</td>
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<tr>
<td>Colour</td>
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<td>Odour</td>
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<td>Odour Threshold</td>
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<td>Evaporation rate</td>
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<tr>
<td>Relative vapor density</td>
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<tr>
<td>Density</td>
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<tr>
<td>Solubility in other solvents</td>
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<tr>
<td>Partition coefficient</td>
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<tr>
<td>Octanol/water</td>
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<td>Auto ignition temperature</td>
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<tr>
<td>Thermal decomposition</td>
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<td>Viscosity, dynamic</td>
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<tr>
<td>Viscosity, kinematic</td>
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<tr>
<td>Explosive properties</td>
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<tr>
<td>Oxidizing properties</td>
</tr>
<tr>
<td>Other information</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity No information available.
Chemical stability No information available.
Possibility of hazardous reactions None known. Hazardous polymerization does not occur.
Conditions to avoid No information available.
Incompatible materials No information available.
Hazardous decomposition products Combustion or thermal decomposition will evolve toxic and irritant vapors.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute oral toxicity: Median lethal dose male rat, 612 mg/kg
: Median lethal dose female rat, 522 mg/kg

Acute inhalation toxicity: LC50 female rat, > 2.09 mg/l, 4 h

Acute dermal toxicity: Median lethal dose male and female rat, > 2,000 mg/kg

Skin corrosion/irritation: rabbit: Practically non-irritating. May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Serious eye damage / eye irritation: rabbit: Mildly irritating

Respiratory or skin sensitization: Man: Likely to cause skin sensitization.

Germ cell mutagenicity
Lambda-cyhalothrin: Did not show mutagenic effects in animal experiments.

Carcinogenicity
Lambda-cyhalothrin: Did not show carcinogenic effects in animal experiments.

Reproductive toxicity
Lambda-cyhalothrin: Did not show reproductive toxicity effects in animal experiments.

STOT - repeated exposure Lambda-cyhalothrin: No adverse effect has been observed in chronic toxicity tests.
12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish: LC50 Cyprinus carpio (Carp), ca. > 12 lg/l, 96 h Based on test results obtained with similar product.

Toxicity to aquatic invertebrates: EC50 Daphnia magna (Water flea), > 2.6 lg/l, 48 h Based on test results obtained with similar product.

Persistence and degradability

Stability in water
Lambda-cyhalothrin: Degradation half-life: 7 d Not persistent in water

Stability in soil
Lambda-cyhalothrin: Degradation half-life: 56 d Not persistent in soil.

Bio accumulative potential
Lambda-cyhalothrin: Lambda-cyhalothrin bio accumulates.

Mobility in soil
Lambda-cyhalothrin: Lambda-cyhalothrin is immobile in soil.

Results of PBT and vPvB assessment: This mixture contains no substance considered to be very persistent nor very bio accumulating (vPvB).

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Product: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated Packaging: Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

Land transport (ADR/RID)
UN number: UN 3082
UN proper shipping
Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)

Transport hazard
Class (es): 9
Packing group: III
Labels: 9
Environmental Hazards: Environmentally hazardous

Sea transport (IMDG)
UN number: UN 3082
UN proper shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)
Transport hazard
Class (es): 9
Packing group: III
Labels: 9
Environmental Hazards: Marine pollutant

Air transport (IATA-DGR)
UN number: UN 3082
UN proper shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)
Transport hazard
Class (es): 9
Packing group: III
Labels: 9

Special precautions for user: none
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: not applicable

15. REGULATORY INFORMATION
Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS-Labelling
Signal word : Warning

Hazard statements : H302 + H332 Harmful if swallowed or if inhaled.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : P102 Keep out of reach of children.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental Information : EUH401 to avoid risks to human health and the environment, comply with the instructions for use.

Remarks : Classified using all GHS hazard classes and categories. Where the GHS contains options, the most conservative option has been chosen. Regional or national implementations of GHS may not implement all hazard classes and categories.

Hazardous components which must be listed on the label:
- Lambda-cyhalothrin
- 1, 2-benzisothiazol-3(2H)-one

Chemical Safety Assessment
A Chemical Safety Assessment is not required for this substance.

16. OTHER INFORMATION

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may
not be valid for such material used in combination with any other materials or in any process, unless specified in the text.