SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Trade name LEVERAGE® 360 INSECTICIDE
Product code (UVP) 79521359
SDS Number 102000019505
EPA Registration No. 264-1104

Relevant identified uses of the substance or mixture and uses advised against
Use Insecticide
Restrictions on use See product label for restrictions.

Information on supplier
Supplier Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Responsible Department Email: SDSINFO.BCS-NA@bayer.com
Emergency telephone no.
Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Acute toxicity(Oral, Inhalation): Category 4

Labelling in accordance with regulation HCS 29CFR §1910.1200

Signal word: Warning
Hazard statements Harmful if swallowed or if inhaled
Precautionary statements Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing mist and spray.
Use only outdoors or in a well-ventilated area. IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell. Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified. No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Concentration % by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>21.0</td>
</tr>
<tr>
<td>Beta-Cyfluthrin</td>
<td>68359-37-5</td>
<td>10.5</td>
</tr>
<tr>
<td>Naphthalene and alkyl naphthalene sulphonic acids</td>
<td>68425-94-5</td>
<td>2.4</td>
</tr>
<tr>
<td>formaldehyde condensate, sodium salt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Ingestion Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed
Treatment
Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media
- Suitable: Water spray, Foam, Carbon dioxide (CO2), Dry chemical
- Unsuitable: None known.

Special hazards arising from the substance or mixture
Dangerous gases are evolved in the event of a fire.

Advice for firefighters
- Special protective equipment for firefighters: Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information
- Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point
> 93.3 °C

Auto-ignition temperature
360 °C / 680 °F

Lower explosion limit
No data available

Upper explosion limit
No data available

Explosivity
Not explosive
92/69/EEC, A.14 / OECD 113

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Precautions
Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up
Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice
Use personal protective equipment. If material is accidentally spilled, do not allow to enter soil, waterways or waste water canal.
Reference to other sections
Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Advice on safe handling

Hygiene measures
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>50ug/m3 (ST ESL)</td>
<td>07 2011</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>5ug/m3 (AN ESL)</td>
<td>07 2011</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>0.7 mg/m3 (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
<tr>
<td>Beta-Cyfluthrin</td>
<td>68359-37-5</td>
<td>5ug/m3 (AN ESL)</td>
<td>03 2014</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Beta-Cyfluthrin</td>
<td>68359-37-5</td>
<td>50ug/m3 (ST ESL)</td>
<td>03 2014</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Beta-Cyfluthrin</td>
<td>68359-37-5</td>
<td>0.01 mg/m3 (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>5 mg/m3 (PEL)</td>
<td>02 2006</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>(Respirable fraction.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>15 mg/m3 (PEL)</td>
<td>02 2006</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>(Total dust.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Glycerine  
(Respirable fraction and dust or fume.)  
56-81-5  
5 mg/m³ (TWA)  
06 2008  
TN OEL  

Glycerine  
(Total dust and mist.)  
56-81-5  
10 mg/m³ (TWA)  
06 2008  
TN OEL  

Glycerine  
56-81-5  
5 ug/m³ (AN ESL)  
03 2014  
TX ESL  

Glycerine  
56-81-5  
1000 ug/m³ (ST ESL)  
03 2014  
TX ESL  

Glycerine  
56-81-5  
50 ug/m³ (ST ESL)  
03 2014  
TX ESL  

Glycerine  
56-81-5  
100 ug/m³ (AN ESL)  
03 2014  
TX ESL  

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

**Exposure controls**

**Personal protective equipment**
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

*Respiratory protection*  
When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

*Hand protection*  
Chemical resistant nitrile rubber gloves

*Eye protection*  
Safety glasses with side-shields

*Skin and body protection*  
Wear long-sleeved shirt and long pants and shoes plus socks.

*General protective measures*  
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

---

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**  
white to beige

**Physical State**  
suspension

**Odor**  
characteristic

**Odour Threshold**  
No data available

**pH**  
ca. 6.9 at 10 %

**Vapor Pressure**  
No data available

**Vapor Density (Air = 1)**  
No data available

**Density**  
1.16 g/cm³ at 20 °C
Evaporation rate: No data available
Boiling Point: No data available
Melting / Freezing Point: No data available
Water solubility: dispersible
Minimum Ignition Energy: Not applicable
Decomposition temperature: Not applicable
Partition coefficient: n-octanol/water: No data available
Viscosity: 500 - 1,100 mPa.s
Flash point: > 93.3 °C
Auto-ignition temperature: 360 °C / 680 °F
Lower explosion limit: No data available
Upper explosion limit: No data available
Explosivity: Not explosive
92/69/EEC, A.14 / OECD 113

SECTION 10: STABILITY AND REACTIVITY

Reactivity
Thermal decomposition: Not applicable
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Extremes of temperature and direct sunlight.
Incompatible materials: No data available
Hazardous decomposition products: No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Skin Absorption, Eye contact, Ingestion
Immediate Effects Eye: Moderate eye irritation.
Skin: Harmful if absorbed through skin. May cause slight irritation.
Ingestion Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity LD50 (female Rat) > 1,044 mg/kg

Acute inhalation toxicity LC50 (Rat) > 2.03 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
highest concentration tested
No deaths

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

Skin irritation slight irritation (Rabbit)

Eye irritation Mild eye irritation. (Rabbit)

Sensitisation Non-sensitizing. (Guinea pig)

Assessment STOT Specific target organ toxicity – repeated exposure

Imidacloprid did not cause specific target organ toxicity in experimental animal studies.
The toxic effects of Beta-Cyfluthrin are related to transient hyperactivity typical for pyrethroid neurotoxicity.

Assessment mutagenicity

Imidacloprid was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.
Beta-Cyfluthrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Imidacloprid was not carcinogenic in lifetime feeding studies in rats and mice.
Beta-Cyfluthrin was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
None.

NTP
None.

IARC
None.

OSHA
None.

Assessment toxicity to reproduction

Imidacloprid caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Imidacloprid is related to parental toxicity.
Beta-Cyfluthrin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Beta-Cyfluthrin is related to parental toxicity.

Assessment developmental toxicity
Imidacloprid caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Imidacloprid are related to maternal toxicity. Beta-Cyfluthrin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Beta-Cyfluthrin are related to maternal toxicity.

Further information

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

### SECTION 12: ECOLOGICAL INFORMATION

| Toxicity to fish | LC50 (Oncorhynchus mykiss (rainbow trout)) 211 mg/l  
Exposure time: 96 h | The value mentioned relates to the active ingredient imidacloprid.  
LC50 (Oncorhynchus mykiss (rainbow trout)) 0.000068 mg/l  
Exposure time: 96 h | The value mentioned relates to the active ingredient beta-cyfluthrin.  
Toxicity to aquatic invertebrates | EC50 (Daphnia magna (Water flea)) 85 mg/l  
Exposure time: 48 h | The value mentioned relates to the active ingredient imidacloprid.  
LC50 (Chironomus riparius (non-biting midge)) 0.0552 mg/l  
Exposure time: 24 h | The value mentioned relates to the active ingredient imidacloprid.  
EC50 (Daphnia magna (Water flea)) 0.00029 mg/l  
Exposure time: 48 h | The value mentioned relates to the active ingredient beta-cyfluthrin.  
Toxicity to aquatic plants | EC50 (Desmodesmus subspicatus (green algae)) > 10 mg/l  
Growth rate; Exposure time: 72 h | The value mentioned relates to the active ingredient imidacloprid.  
IC50 (Desmodesmus subspicatus (green algae)) > 0.01 mg/l  
Growth rate; Exposure time: 72 h | The value mentioned relates to the active ingredient beta-cyfluthrin.  
No acute toxicity was observed at its limit of water solubility.  
Biodegradability | Imidacloprid:  
Not rapidly biodegradable  
Beta-Cyfluthrin:  
Not rapidly biodegradable  
Koc | Imidacloprid: Koc: 225  
Beta-Cyfluthrin: Koc: 508 - 3179  
Bioaccumulation | Imidacloprid:  
Does not bioaccumulate.  
Beta-Cyfluthrin: Bioconcentration factor (BCF) 506
Does not bioaccumulate.

Mobility in soil
Imidacloprid: Moderately mobile in soils
Beta-Cyfluthrin: Immobile in soil

Environmental precautions
Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.
Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Never place unused product down any indoor or outdoor drain.
Follow advice on product label and/or leaflet.

Contaminated packaging
Do not re-use empty containers.
Triple rinse containers.
Add washings to sprayer at time of filling.
Puncture container to avoid re-use.
Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.

RCRA Information
Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR
Not dangerous goods / not hazardous material

IMDG
UN number 3082
Class 9
Packaging group III
Marine pollutant YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BETA-CYFLUTHRIN, IMIDACLOPRID SOLUTION)
IATA
UN number 3082
Class 9
Packaging group III
Environm. Hazardous Mark YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BETA-CYFLUTHRIN, IMIDACLOPRID SOLUTION )

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-1104
US Federal Regulations
TSCA list
Naphthalene and alkyl naphthalene 68425-94-5
sulphonic acids formaldehyde condensate, sodium salt
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D) None.
SARA Title III - Section 302 - Notification and Information None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting Beta-Cyfluthrin 68359-37-5
US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
Beta-Cyfluthrin 68359-37-5 NJ, RI
None.
Canadian Regulations
Canadian Domestic Substance List None.

Environmental
CERCLA None.
Clean Water Section 307 Priority Pollutants None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

EPA/FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

**Signal word:** Caution!

**Hazard statements:**
- Harmful if absorbed through skin.
- Harmful if swallowed.
- Moderate eye irritation.
- Avoid contact with skin, eyes and clothing.
- Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

**Abbreviations and acronyms**
- 49CFR: Code of Federal Regulations, Title 49
- ACGIH: US. ACGIH Threshold Limit Values
- ATE: Acute toxicity estimate
- CAS-Nr.: Chemical Abstracts Service number
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
- EINECS: European inventory of existing commercial substances
- ELINCS: European list of notified chemical substances
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- IMDG: International Maritime Dangerous Goods
- N.O.S.: Not otherwise specified
- NTP: US. National Toxicology Program (NTP) Report on Carcinogens
- OECD: Organization for Economic Co-operation and Development
- TDG: Transportation of Dangerous Goods
- TWA: Time weighted average
- UN: United Nations
- WHO: World health organisation

**NFPA 704 (National Fire Protection Association):**
- Health: 1
- Flammability: 1
- Instability: 0
- Others: none

- Health: 1
- Flammability: 1
- Physical Hazard: 0
- PPE: -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

**Reason for Revision:** Reviewed and updated for general editorial purposes. The following sections have been revised: Section 2: Hazards Identification.
Revision Date: 01/11/2017

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