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

Product identifier
Trade name: BIOADVANCED SCIENCE-BASED SOLUTIONS 12 MONTH TREE & SHRUB PROTECT & FEED CONCENTRATE II

Product code
SDS Number: 102000017711
EPA Registration No.: 92564-39

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

Information on manufacturer
SBM Life Science Corp.
1001 Winstead Dr, Ste 500
Cary, NC 27513
United States

Emergency Telephone Number (24hr/7 days): 1-877-229-3763
Product Information Telephone Number: 1-877-229-3724
SDS Information or Request: SDS@sbm-company.com

SECTION 2: HAZARDS IDENTIFICATION

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

Signal word: Warning

Hazard statements
Harmful if swallowed.

Precautionary statements
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
Dispose of contents/container in accordance with local regulation.

Other hazards
No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>0.74</td>
</tr>
<tr>
<td>Clothianidin</td>
<td>210880-92-5</td>
<td>0.37</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>7447-40-7</td>
<td>1.69</td>
</tr>
<tr>
<td>Diammonium hydrogenorthophosphate</td>
<td>7783-28-0</td>
<td>2.28</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>8.40</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 fire-fighters

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  > 93.4 °C
Autoignition temperature  no data available
Lower explosion limit  no data available
Upper explosion limit  no data available
Explosivity  not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions  Isolate hazard area. Keep unauthorized people away. 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. 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
Advice on safe handling  Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers  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>5ug/m3 (AN ESL)</td>
<td>07 2011</td>
<td>TX ESL</td>
</tr>
<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>Potassium chloride (Particulate.)</td>
<td>7447-40-7</td>
<td>5ug/m3 (AN ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Potassium chloride (Particulate.)</td>
<td>7447-40-7</td>
<td>50ug/m3 (ST ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Diammonium hydrogenorthophosphate (Particulate.)</td>
<td>7783-28-0</td>
<td>5ug/m3 (AN ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Diammonium hydrogenorthophosphate (Particulate.)</td>
<td>7783-28-0</td>
<td>50ug/m3 (ST ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>Glycerine (Total dust.)</td>
<td>56-81-5</td>
<td>15 mg/m3 (PEL)</td>
<td>02 2006</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>Glycerine (Respirable fraction.)</td>
<td>56-81-5</td>
<td>5 mg/m3 (PEL)</td>
<td>02 2006</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>Glycerine (Respirable fraction.)</td>
<td>56-81-5</td>
<td>5 mg/m3 (TWA)</td>
<td>1989</td>
<td>OSHA Z1A</td>
</tr>
<tr>
<td>Glycerine (Total dust.)</td>
<td>56-81-5</td>
<td>10 mg/m3 (TWA)</td>
<td>1989</td>
<td>OSHA Z1A</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>10 mg/m3 (TWA)</td>
<td>06 2008</td>
<td>TN OEL</td>
</tr>
</tbody>
</table>
**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**
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Do not allow children or pets to enter the treated area until it has dried.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>slight latex-like</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>6.0 - 7.5</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>ca. 1.07 g/cm³ at 20 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>no data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>dispersible</td>
</tr>
<tr>
<td>Minimum Ignition Energy</td>
<td>not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>not applicable</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>200 - 600 cps</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 93.4 °C</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Explosivity</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

### SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td></td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>not applicable</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>No dangerous reaction known under conditions of normal use.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Extremes of temperature and direct sunlight.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>no data available</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>No decomposition products expected under normal conditions of use.</td>
</tr>
</tbody>
</table>

### SECTION 11: TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Ingestion, Skin Absorption, Eye contact, Inhalation</td>
</tr>
<tr>
<td>Immediate Effects</td>
<td></td>
</tr>
</tbody>
</table>
Eye
- May cause eye irritation.

Skin
- May cause skin irritation. Harmful if absorbed through skin.

Ingestion
- Harmful if swallowed.

Inhalation
- Avoid breathing spray mist.

Information on toxicological effects

Acute oral toxicity
- LD50 (female rat) 500 - 2,000 mg/kg

Acute inhalation toxicity
- LC50 (rat) > 2.7 mg/l
- Exposure time: 4 h
- Determined in the form of liquid aerosol.
- Highest attainable concentration.
- No deaths
- LC50 (rat) > 10.8 mg/l
- Exposure time: 1 h
- Determined in the form of liquid aerosol.
- Extrapolated from the 4 hr LC50.

Acute dermal toxicity
- LD50 (rat) > 4,000 mg/kg

Skin irritation
- No skin irritation (rabbit)

Eye irritation
- Mild eye irritation. (rabbit)

Sensitisation
- Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

Imidacloprid did not cause specific target organ toxicity in experimental animal studies.
Clothianidin did not cause specific target organ toxicity in experimental animal studies.

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

Assessment Carcinogenicity

Imidacloprid was not carcinogenic in lifetime feeding studies in rats and mice.
Clothianidin 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. Clothianidin 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 Clothianidin 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. Clothianidin did not cause developmental toxicity in rats. Clothianidin caused developmental toxicity in rabbits only at dose levels toxic to the dams. The developmental effects seen with Clothianidin are related to maternal toxicity.

Further information

Acute toxicity studies have been bridged from a similar formulation(s). The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Exposure</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 (Rainbow trout (Oncorhynchus mykiss))</td>
<td>211 mg/l</td>
<td>96 h</td>
<td>The value mentioned relates to the active ingredient imidacloprid.</td>
</tr>
<tr>
<td>LC50 (Rainbow trout (Oncorhynchus mykiss))</td>
<td>&gt; 104.2 mg/l</td>
<td>96 h</td>
<td>The value mentioned relates to the active ingredient clothianidin.</td>
</tr>
</tbody>
</table>

Toxicity to aquatic invertebrates

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Exposure</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 (Water flea (Daphnia magna))</td>
<td>85 mg/l</td>
<td>48 h</td>
<td>The value mentioned relates to the active ingredient imidacloprid.</td>
</tr>
<tr>
<td>LC50 (Chironomus riparius (non-biting midge))</td>
<td>&gt; 0.0552 mg/l</td>
<td>24 h</td>
<td>The value mentioned relates to the active ingredient imidacloprid.</td>
</tr>
<tr>
<td>EC50 (Water flea (Daphnia magna))</td>
<td>&gt; 40 mg/l</td>
<td>48 h</td>
<td>The value mentioned relates to the active ingredient clothianidin.</td>
</tr>
<tr>
<td>EC15 (Chironomus riparius (non-biting midge))</td>
<td>0.00072 mg/l</td>
<td>28 d</td>
<td>The value mentioned relates to the active ingredient clothianidin.</td>
</tr>
<tr>
<td>EC50 (Chironomus riparius (non-biting midge))</td>
<td>0.00106 mg/l</td>
<td>28 d</td>
<td>The value mentioned relates to the active ingredient clothianidin.</td>
</tr>
</tbody>
</table>
Chronic toxicity to aquatic invertebrates

NOEC (Daphnia): 0.12 mg/l
Exposure time: 21 d
The value mentioned relates to the active ingredient clothianidin.

Toxicity to aquatic plants

EC50 (Desmodesmus subspicatus) > 10 mg/l
Growth rate; Exposure time: 72 h
The value mentioned relates to the active ingredient imidacloprid.

IC50 (Pseudokirchneriella subcapitata) 70 mg/l
Growth rate; Exposure time: 72 h
The value mentioned relates to the active ingredient clothianidin.

EC50 (Lemna gibba (duckweed)) 270 mg/l
Exposure time: 14 d
The value mentioned relates to the active ingredient clothianidin.

Biodegradability

Imidacloprid: ; not rapidly biodegradable
Clothianidin: ; not rapidly biodegradable

Koc

Imidacloprid: Koc: 225
Clothianidin: Koc: 84 - 345

Bioaccumulation

Imidacloprid: ; Does not bioaccumulate.
Clothianidin: ; Does not bioaccumulate.

Mobility in soil

Imidacloprid: Moderately mobile in soils
Clothianidin: Moderately mobile in soils

Environmental precautions

Do not allow to get into surface water, drains and ground water.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Do not apply when weather conditions favor runoff or drift.
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
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.
Never place unused product down any indoor or outdoor drain.

Contaminated packaging
Do not re-use empty containers.
Place empty container in trash.
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. (CLOTHIANIDIN, 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. (CLOTHIANIDIN, 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.  92564-39  
US Federal Regulations  
TSCA list  
Potassium chloride  7447-40-7  
Diammonium hydrogenorthophosphate  7783-28-0  
Glycerine  56-81-5  
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  
Diammonium hydrogenorthophosphate  7783-28-0  1.0%  
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**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>MN</td>
</tr>
</tbody>
</table>

**Canadian Regulations**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium chloride</td>
<td>7447-40-7</td>
</tr>
<tr>
<td>Diammonium hydrogenorthophosphate</td>
<td>7783-28-0</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
</tr>
</tbody>
</table>

**Environmental**

**CERCLA**

None.

**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**International Regulations**

**European Inventory of Existing Commercial Substances (EINECS)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium chloride</td>
<td>7447-40-7</td>
</tr>
<tr>
<td>Diammonium hydrogenorthophosphate</td>
<td>7783-28-0</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
</tr>
</tbody>
</table>

**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 swallowed or absorbed through skin.
- Avoid contact with skin, eyes and clothing.
- Avoid breathing spray mist.
- Wash thoroughly with soap and water after handling.

---

**SECTION 16: OTHER INFORMATION**
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: Update emergency contact and product information number.

Date of Previous Revision: 05/01/2017

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are trademarks of SBM Life Science Corp.