1. PRODUCT IDENTIFICATION

Product Name: Acceleron® IDL-810 Insecticide and Fungicides Seed Treatment

EPA Signal Word: Caution

Active Ingredient(%): Difenoconazole (1.25%)  CAS No.: 119446-68-3
Chemical Name: 1H-1,2,4-Triazole, 1-[2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-yl]methyl]-
Chemical Class: Triazole Fungicide

Active Ingredient(%): Fludioxonil (0.13%)   CAS No.: 131341-86-1
Chemical Name: 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile
Chemical Class: Substituted Benzodioxalcarbonitrile Fungicide

Active Ingredient(%): Mefenoxam (0.39%)   CAS No.: 70630-17-0 & 69516-34-3
Chemical Name: (R,S)-2-[(2,6-dimethylphenyl)methoxyacetylamino]-propionic acid methyl ester
Chemical Class: Phenylamide Fungicide

Active Ingredient(%): Thiamethoxam (20.7%)   CAS No.: 153719-23-4
Chemical Name: 4H-1,3,5-Oxadiazin-4-imine,3-[(2-chloro-5-thiazolyl) methyl]tetrahydro-5-methyl-N-nitro-
Chemical Class: Neonicotinoid Insecticide

EPA Registration Number(s): 100-935-524

Section(s) Revised: 2, 3, 8

2. HAZARDS IDENTIFICATION

Health and Environmental
   Harmful if inhaled. May be harmful in contact with skin. Causes mild eye and skin irritation.

Hazardous Decomposition Products
   None known.

Physical Properties
   Appearance: Light blue liquid
   Odor: Paint-like

Unusual Fire, Explosion and Reactivity Hazards
   During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Material</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other</th>
<th>NTP/IARC/OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium Dioxide</td>
<td>15 mg/m³ TWA (total)</td>
<td>10 mg/m³ TWA</td>
<td>Not Established</td>
<td>IARC Group 2B</td>
</tr>
<tr>
<td>Glycerin</td>
<td>15 mg/m³ TWA (total); 5 mg/m³ TWA (respirable)</td>
<td>10 mg/m³ TWA (total)</td>
<td>Not Established</td>
<td>No</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Monsanto (314-694-4000), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Monsanto (314-694-4000), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 314-694-4000 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Monsanto (314-694-4000), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Monsanto (314-694-4000), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Monsanto (314-694-4000), a poison control center or doctor for further treatment advice.

Notes to Physician
- There is no specific antidote if this product is ingested.
- Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure
- None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion
- Flash Point (Test Method): > 200°F
- Flammable Limits (% in Air): Lower: Not Applicable  Upper: Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Not Applicable

Unusual Fire, Explosion and Reactivity Hazards
- During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire
- Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dikes and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak
- Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact: Where eye contact is likely, use chemical splash goggles.

Skin Contact: Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Light blue liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Paint-like</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Available</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>1.29 g/ml</td>
</tr>
<tr>
<td>pH</td>
<td>6.6 Typical</td>
</tr>
<tr>
<td>Solubility in H2O</td>
<td></td>
</tr>
<tr>
<td>Difenoconazole</td>
<td>15mg/l @ 77°F (25°C)</td>
</tr>
<tr>
<td>Fludioxonil</td>
<td>1.8mg/l @ 77°F (25°C)</td>
</tr>
<tr>
<td>Mefenoxam</td>
<td>26g/l @ 77°F (25°C)</td>
</tr>
<tr>
<td>Thiamethoxam</td>
<td>4.1g/l @ 77°F (25°C)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td></td>
</tr>
<tr>
<td>Difenoconazole</td>
<td>2.5 x 10(-10) mmHg @ 77°F (25°C)</td>
</tr>
<tr>
<td>Fludioxonil</td>
<td>2.9 x 10(-9) mmHg @ 77°F (25°C)</td>
</tr>
<tr>
<td>Mefenoxam</td>
<td>2.5 x 10(-5) mmHg @ 77°F (25°C)</td>
</tr>
<tr>
<td>Thiamethoxam</td>
<td>2 x 10(-11) mmHg @ 68°F (20°C)</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable under normal use and storage conditions.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Materials to Avoid</td>
<td>None known.</td>
</tr>
</tbody>
</table>

Product Name: Acceleron® IDL-810 Insecticide and Fungicides Seed Treatment
11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

**Ingestion:**
- Oral (LD50 Rat) : > 5000 mg/kg body weight

**Dermal:**
- Dermal (LD50 Rabbit) : > 2000 mg/kg body weight

**Inhalation:**
- Inhalation (LC50 Rat) : > 2.56 mg/l air - 4 hours

**Eye Contact:** Minimally Irritating (Rabbit)

**Skin Contact:** Slightly Irritating (Rabbit)

**Skin Sensitization:** Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects

- Difenoconazole: None observed.
- Fludioxonil: Delayed development at doses causing maternal toxicity.
- Mefenoxam: None observed.
- Thiamethoxam: Developmental: Not teratogenic in rats or rabbits.
- Reproductive: No effects on reproduction. Minor increase in a common testis effect in rats at high doses, which did not affect reproduction. When used in accordance with label directions and recommendations in this MSDS, no effects would be expected in humans.

Chronic/Subchronic Toxicity Studies

- Difenoconazole: Kidney and liver effects at high doses (>5000 ppm; rats); Eye effects in dogs at high dose levels.
- Fludioxonil: Liver and kidney toxicity at high dose levels.
- Mefenoxam: Liver effects at high dose animal tests.
- Thiamethoxam: Subchronic: Liver effects occurred in rodents only at high dose levels. Not neurotoxic after high acute and subchronic exposure in rats.

Carcinogenicity

- Difenoconazole: 2/70 male rats in the highest dose group (20000 ppm) were found to have squamous cell carcinoma in the non-glandular stomach. Effect did not occur in female rats or in mice and not considered relevant to humans. Increase in brain tumors (mice) at doses exceeding the Maximum Tolerated Dose (MTD) (>2500 ppm).
- Fludioxonil: Marginal increase (7%) of liver tumors (female, rats: 3,000 ppm); Within historical control range (1 to 10%).
- Mefenoxam: None observed.
- Thiamethoxam: Classified as "not likely to be carcinogenic in humans" based on lifetime studies in mice and rats.

Other Toxicity Information

None

Toxicity of Other Components

**Glycerin**
Test results reported in Section 11 for the final product take into account any acute hazards related to the glycerin in the formulation.

**Titanium Dioxide**
Titanium dioxide is listed as an IARC Group 2B (Possibly Carcinogenic to Humans). Prolonged exposure causes respiratory irritation and may lead to pulmonary fibrosis.

Target Organs

**Active Ingredients**
Difenoconazole: Brain, liver, kidney, gastrointestinal tract
Fludioxonil: Liver, kidney

Hazardous Decomposition Products: None known.
12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Difenoconazole:
- Fish (Rainbow Trout) 96-hour LC50 1.06 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.77 ppm
- Bird (Mallard Duck) 21-day LD50 > 2150 mg/kg

Mefenoxam:
- Fish (Rainbow Trout) 96-hour LC50 > 121 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 113 ppm
- Bird (Bobwhite Quail) 14-day LD50 981 mg/kg

Fludioxonil:
- Fish (Rainbow Trout) 96-hour LC50 0.47 ppm
- Green Algae 5-day EC50 0.087 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.9 ppm
- Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

Thiamethoxam:
- Fish (Rainbow Trout) 96-hour LC50 > 100 ppm
- Bird (Mallard Duck) LD50 Oral 576 mg/kg
- Invertebrate (Daphnia Magna) 48-hour EC50 > 106 ppm
- Green Algae 4-day EC50 > 97 ppm

Environmental Fate

Difenoconazole:
- The information presented here is for the active ingredient, difenoconazole.
- Stable in soil and water. Low to moderate mobility in soil. Sinks in water (after 24 h).

Fludioxonil:
- The information presented here is for the active ingredient, fludioxonil.

Mefenoxam:
- The information presented here is for the active ingredient, mefenoxam.
- Does not bioaccumulate. Not persistent in soil or water. Moderate mobility in soil. Mixes/sinks (after 24 h).

Thiamethoxam:
- The information presented here is for the active ingredient, thiamethoxam.

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and

Product Name: Acceleron® IDL-810 Insecticide and Fungicides Seed Treatment    Page: 5
14. TRANSPORT INFORMATION

DOT Classification
- Ground Transport - NAFTA
  Not regulated.

B/L Freight Classification
- Insecticide/Fungicide, NOI, Not Regulated

Comments
- None.

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification
- Section 311/312 Hazard Classes: Acute Health Hazard
- Section 313 Toxic Chemicals: Not Applicable

California Proposition 65
- Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)
- Not Applicable

RCRA Hazardous Waste Classification (40 CFR 261)
- Not Applicable

TSCA Status
- Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Hazard Ratings</th>
<th>HMIS Hazard Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health:</td>
<td>Health:</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Flammability:</td>
</tr>
<tr>
<td>Instability:</td>
<td>Reactivity:</td>
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<p>| | |</p>
<table>
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<tr>
<th></th>
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<tbody>
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<td>Health:</td>
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<td>Flammability:</td>
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<td>Instability:</td>
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<tr>
<td>Reactivity:</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0 Minimal
1 Slight
2 Moderate
3 Serious
4 Extreme

Original Issued Date: August 30, 2010

End of MSDS