1. PRODUCT IDENTIFICATION

Product Name: GRAMOXONE INTEON
EPA Signal Word: Danger-Poison
Active Ingredient(%): Paraquat Dichloride (30.1%)
Chemical Name: (1,1’-dimethyl-4,4’-bipyridinium dichloride)
Chemical Class: Herbicide
EPA Registration Number(s): 100-1217

2. HAZARDS IDENTIFICATION

Health and Environmental
Fatal if inhaled. May be fatal if swallowed. Causes eye and skin irritation.

Hazardous Decomposition Products
Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride, possible trace amounts of phosgene, nitrogen oxides, ammonia, and other toxic and noxious fumes.

Physical Properties
Appearance: Bluish green to dark green liquid
Odor: Characteristic; strong

Unusual Fire, Explosion and Reactivity Hazards
Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

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>Paraquat Emetic</td>
<td>Not Established</td>
<td>Not Established</td>
<td>0.02 mg/m³ TWA ***</td>
<td>No</td>
</tr>
<tr>
<td>Paraquat Dichloride (30.1%)</td>
<td>0.5 mg/m³ TWA (respirable; skin; as paraquat)</td>
<td>Not Established</td>
<td>0.01 mg/m³ TWA (inhalable); 0.03 mg/m³ STEL (inhalable) ***</td>
<td>No</td>
</tr>
</tbody>
</table>

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: E, S

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison
5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): Not Available
Flammable Limits (% in Air): Lower: Not Applicable Upper: Not Applicable
Autoignition Temperature: Not Available
Flammability: Does not flash

Unusual Fire, Explosion and Reactivity Hazards

Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

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, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Untreated spilled material can dry to a highly irritating dust.

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 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...
7. HANDLING AND STORAGE

This product may freeze at approximately 0°F, but upon warming will thaw out to fully homogeneous product.

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

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

Skin Contact: This product is FIFRA regulated. Refer to product labeling for end-user personal protection requirements. When handling or when exposure to concentrate is possible, wear: long-sleeved shirt and long pants, waterproof gloves, shoes and socks, face shield and chemical-resistant apron. Remove any contaminated clothing promptly. Syngenta conducted ASTM permeation tests using PVC gloves (0.2mm thickness) which showed no breakthrough of the product after eight hours of testing.

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 approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Bluish green to dark green liquid
Odor: Characteristic; strong
Melting Point: Not Applicable
Boiling Point: Not Available
Specific Gravity/Density: 1.1223 g/cm³ @ 68°F (20°C)
pH: 4 - 8 (10 g/l in deionized water)

Solubility in H2O
Paraquat Dichloride: 620 g/l @ 68°F (20°C)

Vapor Pressure
Paraquat Dichloride: 7.5 x 10(-8) mmHg @ 77°F (25°C)

10. STABILITY AND REACTIVITY

Stability: Stable under normal use and storage conditions.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Store above 0°F. Stable in acidic and neutral solution. Decomposed by alkali and in the presence of U.V. light. Compound inactivated by adsorption onto inert clay.

Materials to Avoid: Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

Hazardous Decomposition Products: Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine,
11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:
- Oral (LD50 Female Rat): 310 mg/kg body weight

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

Inhalation:
- Inhalation (LC50 Rat): 0.0006 mg/l air - 4 hours (data based on similar formulation[s])

Eye Contact: Mildly Irritating (Rabbit)
Skin Contact: Moderately Irritating (Rabbit)
Skin Sensitization: Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects
Paraquat Dichloride: A 3-generation reproduction study showed no evidence of fertility or reproductive effects at doses below that causing maternal toxicity. Reproductive NOEL was above 7.5 mg/kg/day, the highest dose level.

Chronic/Subchronic Toxicity Studies
Paraquat Dichloride: Rodent studies showed signs of irritation in 21-day dermal studies. In a 2.5 year chronic study, rats showed evidence of cataracts, body weight reduction and lung effects (alveolar macrophage infiltration) at 75 ppm and above. A 90-day dog diet study showed evidence of lung effects leading to alveolar collapse and death at 3 mg/kg/day. Chronic pneumonitis was seen in a 1-year dog study at 0.93 mg/kg/day and above.

Carcinogenicity
Paraquat Dichloride: No evidence in the rat or mouse.

Other Toxicity Information
None

Toxicity of Other Components
Paraquat Emetic (0.13%)
Toxic if swallowed. Slightly irritating to skin and eyes. Inhalation of dust may cause nausea and vomiting.

Target Organs
Active Ingredients
Paraquat Dichloride: Lung, kidney
Inert Ingredients
Paraquat Emetic: Skin, eye, respiratory system

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects
Paraquat Dichloride:
- Fish (Bluegill Sunfish) 96-hour LC50 13 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 1.2 ppm
- Bird (Bobwhite Quail) 8-day LD50 176 mg/kg
- Green Algae 4-day EC50 0.32 ppm

Environmental Fate

Product Name: GRAMOXONE INTEON
Disposal Considerations

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

Characteristic Waste: Not Applicable
Listed Waste: Not listed

Transport Information

DOT Classification
Ground Transport - NAFTA
Proper Shipping Name: Corrosive Liquid, N.O.S. (Paraquat)
Hazard Class: Class 8
Identification Number: UN 1760
Packing Group: PG III

Water Transport - International
Proper Shipping Name: Corrosive Liquid, N.O.S. (Paraquat), Marine Pollutant
Hazard Class: Class 8
Identification Number: UN 1760
Packing Group: PG III

Air Transport
Proper Shipping Name: Corrosive Liquid, N.O.S. (Paraquat)
Hazard Class: Class 8
Identification Number: UN 1760
Packing Group: PG III

Regulatory Information

EPCRA SARA Title III Classification
Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Paraquat Dichloride (30.1%) (CAS No. 1910-42-5)

California Proposition 65
Not Applicable

CERCLA/SARA 304 Reportable Quantity (RQ)
Report product spills > 5 gal. (based on paraquat dichloride [RQ = 10 lbs.] content in the formulation) (SARA 304)

RCRA Hazardous Waste Classification (40 CFR 261)
Not Applicable

TSCA Status
Exempt from TSCA, subject to FIFRA

Product Name: GRAMOXONE INTEON
### 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>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Minimal</td>
</tr>
<tr>
<td>1</td>
<td>Slight</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
</tr>
<tr>
<td>3</td>
<td>Serious</td>
</tr>
<tr>
<td>4</td>
<td>Extreme</td>
</tr>
</tbody>
</table>

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 2/18/2005
Revision Date: 12/13/2012
Replaces: 11/9/2011

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS