

## GRAMOXONE® SL 2.0

Date: 7/8/2015  
Replaces: 3/10/2015

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **GRAMOXONE® SL 2.0**  
Product No.: A7813Q  
Use: Herbicide  
Manufacturer: Syngenta Crop Protection, LLC  
Post Office Box 18300  
Greensboro NC 27419  
Manufacturer Phone: 1-800-334-9481

**Emergency Phone: 1-800-888-8372**

### 2. HAZARDS IDENTIFICATION

Classifications: Skin Corrosion/Irritation: Category 2  
Specific Target Organ Toxicity: Single Category 1  
Corrosive to Metals: Category 1  
Oral: Category 4  
Specific Target Organ Toxicity: Repeated Category 1  
Inhalation: Category 1

Signal Word (OSHA): Danger

Hazard Statements: May be corrosive to metals  
Harmful if swallowed  
Causes skin irritation  
Fatal if inhaled  
Causes damage to organs  
Causes damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Keep only in original container.  
Do not breathe mist, vapors, spray.  
Wash hands and face thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves, protective clothing, eye protection.  
In case of inadequate ventilation wear respiratory protection. See Section 8 Exposure Control/Personal Protection.

## GRAMOXONE® SL 2.0

Date: 7/8/2015  
Replaces: 3/10/2015

If swallowed: Call a poison center, doctor or Syngenta if you feel unwell. Rinse mouth.  
If on skin: Wash with plenty of soap and water.  
If skin irritation occurs: Get medical advice.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
If exposed or concerned: Call a poison center, doctor or Syngenta.  
Immediately call a poison center, doctor or Syngenta.  
Get medical advice if you feel unwell.  
Specific treatment is urgent (see Section 4 First Aid Measures).  
Take off contaminated clothing and wash it before reuse.  
Absorb spillage to prevent material damage.  
Store locked up.  
Store in corrosive resistant plastic, plastic-lined steel, stainless steel or fiberglass container.  
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Other ingredients	Other ingredients	Trade Secret	69.9%
(1,1'-dimethyl-4,4'-bipyridinium dichloride)	Paraquat Dichloride	1910-42-5	30.1%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

### 4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: **SPEED IS ESSENTIAL.** Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fuller's Earth.  
Call a poison control center or doctor immediately for treatment advice.  
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 Syngenta (800-888-8372), 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 Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air.  
The odor of this product is from the stenching agent, which has been added, not from the paraquat.  
If person is not breathing, call 911 or an ambulance.  
Call a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Skin irritation

## GRAMOXONE® SL 2.0

Date: 7/8/2015

Replaces: 3/10/2015

### Indication of immediate medical attention and special treatment needed:

Refer to the booklet 'Paraquat Poisoning. A Practical guide to Diagnosis, First Aid and Hospital Treatment'. (<http://www.syngenta.com/pqmedguide/>) Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

## 5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO<sub>2</sub> extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific 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.

Special protective equipment and precautions for firefighters:

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.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

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 for disposition.

## 7. HANDLING AND STORAGE

Precautions for safe handling:

Store above 32°F (0°C).

Avoid contact with skin and eyes. Avoid inhalation of high concentrations of dusts. Avoid inhalation of liquid aerosols. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Do not reuse container.

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.

Conditions for safe storage, including any incompatibilities:

Store locked up.

## GRAMOXONE® SL 2.0

Date: 7/8/2015

Replaces: 3/10/2015

**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.**

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Paraquat Dichloride	0.5 mg/m <sup>3</sup> TWA (respirable; skin; as paraquat)	Not Established	0.01 mg/m <sup>3</sup> TWA (inhalable); 0.03 mg/m <sup>3</sup> STEL (inhalable)	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

## 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:

To avoid eye contact, wear safety glasses with side shields or chemical 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) and showed no breakthrough of the product after eight hours of testing.

## Inhalation:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. The potential for overexposure in manufacturing operations is low. However, a NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (for example, where spray mists may be generated). Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Bluish green liquid

Odor: Characteristic, strong

Odor Threshold: Not Available

pH: 6.5 - 7.5 (100% @ 68 - 77°F)

Melting point/freezing point: Not Available

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): 103°C

Flammable Limits (% in Air): Not Available

## GRAMOXONE® SL 2.0

Date: 7/8/2015  
 Replaces: 3/10/2015

Flammability: Not Available  
 Vapor Pressure: Paraquat Dichloride 7.5 x 10(-8) mmHg @ 77°F (25°C)  
 Vapor Density: Not Available  
 Relative Density: 1.07 - 1.13 g/ml @ 68°F ; 9.12 lbs/gal  
 Solubility (ies): Paraquat Dichloride 620 g/l @ 68°F (20°C)  
 Partition coefficient: n-octanol/water: Not Available  
 Autoignition Temperature: Not Available  
 Decomposition Temperature: Not Available  
 Viscosity: Not Available  
 Other: None

### 10. STABILITY AND REACTIVITY

Reactivity: Not reactive.  
 Chemical stability: Stable under normal use and storage conditions.  
 Possibility of hazardous reactions: Will not occur.  
 Conditions to Avoid: Store above 32°F (0°C).  
 Stable in acidic and neutral solution. Decomposed by alkali and in the presence of U.V. light. Compound inactivated by adsorption onto inert clay.  
 Incompatible materials: None known.  
 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.

### 11. TOXICOLOGICAL INFORMATION

#### Health effects information

Likely routes of exposure: Dermal, Inhalation  
 Symptoms of exposure: Skin irritation, Respiratory irritation  
 Delayed, immediate and chronic effects of exposure: Kidney, liver damage, Skin irritation, Respiratory irritation

#### Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Female Rat) :	1098 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)	

## GRAMOXONE® SL 2.0

Date: 7/8/2015  
Replaces: 3/10/2015

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.

Chemical Name	NTP/IARC/OSHA Carcinogen
Other ingredients	No
(1,1'-dimethyl-4,4'-bipyridinium dichloride)	No

Other Toxicity Information

Occupational exposure to paraquat does not pose any health issues as long as normal hygiene precautions are followed. Paraquat has a history of use in suicides; although difficult to quantify, it is estimated that 15 ml of paraquat (approx 37% paraquat dichloride) by oral ingestion is sufficient to cause death. Two types of deaths can be identified: acute fulminate poisoning leading to multi-organ failure in a few days, and a more protracted form resulting in kidney failure and pulmonary fibrosis. Treatment is available and successful, providing the quantity of product ingested is low and the time to treatment is short.

Toxicity of Other Components

Other ingredients  
Not Applicable

Target OrgansActive Ingredients

Paraquat Dichloride: Lung, kidney

Inert Ingredients

Other ingredients: Not Applicable

**12. ECOLOGICAL INFORMATION**Eco-Acute Toxicity

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

Paraquat Dichloride:  
The information presented here is for the active ingredient, paraquat dichloride.

## GRAMOXONE® SL 2.0

Date: 7/8/2015  
Replaces: 3/10/2015

Low bioaccumulation potential. Persistent in soil. Not persistent in water. Immobile in soil. Sinks in water (after 24 h).

### 13. DISPOSAL CONSIDERATIONS

Disposal:

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 Applicable

### 14. 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: III

Comments

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

Air Transport

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

### 15. REGULATORY INFORMATION

Pesticide Registration:

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 as required on the pesticide label:

Danger-Poison: May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

EPA Registration Number(s):

100-1431

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)

## GRAMOXONE® SL 2.0

Date: 7/8/2015  
Replaces: 3/10/2015

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

### 16. OTHER INFORMATION

#### NFPA Hazard Ratings

Health: 3  
Flammability: 0  
Instability: 0

#### HMIS Hazard Ratings

Health: 3  
Flammability: 0  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: D,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 2/6/2012

Revision Date: 7/8/2015

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Section(s) Revised: 2, 4, 11

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.