

Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name:	GRAMOXONE SL 2.0	Product No.: A7813Q
EPA Signal Word:	Danger-Poison	
Active Ingredient(%):	Paraquat Dichloride (30.1%)	CAS No.: 1910-42-5
Chemical Name:	(1,1'-dimethyl-4,4'-bipyridinium dichloride)	
Chemical Class:	Herbicide	
EPA Registration Number(s):	100-1431	Section(s) Revised: 3

2. HAZARDS IDENTIFICATION

Health and Environmental

Fatal if inhaled. Harmful if swallowed. May be harmful in contact with skin. Irritating to eyes and skin.

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 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
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Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Paraquat Dichloride (30.1%)	0.5 mg/m ³ TWA (respirable; skin; as paraquat)	Not Established	0.01 mg/m ³ TWA (inhalable); 0.03 mg/m ³ STEL (inhalable) ***	No

*** Syngenta Occupational Exposure Limit (OEL)

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

Notes to Physician

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.

Medical Condition Likely to be Aggravated by Exposure

Not Available

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: Not Available

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

Technical aqueous solutions present no ignition hazards. The pure material may support combustion. Keep fire-exposed containers cool by spraying with water. For small fires, use foam, carbon dioxide or dry powder extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers. A self-contained breathing apparatus and suitable protective clothing must be worn in fire conditions.

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 for disposition.

7. HANDLING AND STORAGE

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.

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: 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
- Melting Point: Not Available
- Boiling Point: Not Available
- Specific Gravity/Density: 1.07 - 1.13 g/ml @ 68°F ; 9.12 lbs/gal
- pH: 6.5 - 7.5 (100% @ 68 - 77°F)

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 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.
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, hydrogen chloride, possible trace amounts of phosgene, nitrogen oxides, ammonia, and other toxic and noxious fumes.

11. TOXICOLOGICAL INFORMATION

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)	

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

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

Not Applicable

Target Organs

Active Ingredients

Paraquat Dichloride: Lung, kidney

Inert Ingredients

Not Applicable

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

Paraquat Dichloride:

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

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

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

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

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 2/6/2012

Revision Date: 12/18/2012

Replaces:

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