MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: HELMQUAT 3 SL

Manufacturer Name:
Helm Agro US, INC.
8275 Tournament Drive Suite #340
Memphis, TN 38125

Emergency Telephone:
ChemTrec 800-424-9300

Non-emergency Telephone:
901-312-1525

Intended Use: Herbicide

2 HAZARDS IDENTIFICATION

Emergency Overview
Physical State: Liquid
Color: Green
Odor: Characteristic

DANGER!
Harmful if inhaled or swallowed. Causes eye irritation. Danger of adverse health effects by prolonged exposure.

This product is mildly corrosive to Aluminum and may form combustible hydrogen gas upon decomposition. Do not store in containers, spray tanks, nurse tanks, or any system made of aluminum or is lined by aluminum or has aluminum fittings. This product is compatible with high density polyethylene or rubber lined containers.

Potential Health Effects

Inhalation: Harmful if inhaled.

Eye Contact: Causes eye irritation.

Skin Contact: None known.

Ingestion: Harmful if swallowed.

Chronic Health Effects: Danger of adverse health effects by prolonged exposure. Can cause lung damage. May cause damage to the liver and kidneys.

Target Organ(s): | Eye | Kidney | Liver | Lung |

OSHA Regulatory Status: This product is hazardous according to OSHA 29CFR 1910.1200.

3 COMPOSITION / INFORMATION ON INGREDIENTS

General Information: This product is toxic to fish and aquatic organisms. This product is intended for use as a technical material in formulations.

Chemical Name	CAS-No.	Concentration*
†Paraquat-dichloride	1910-42-5	< 43.8%
†Poly(oxyethylene) nonylphenol ether	9016-45-9	< 6%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
† This chemical is hazardous according to OSHA/WHMIS criteria.

4 FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Get medical attention.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Skin Contact: Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Ingestion: Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable Extinguishing Media: Not applicable.

Special Fire Fighting Procedures: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Unusual Fire & Explosion Hazards: None known.

Hazardous Combustion Products: Carbon Oxides, Hydrogen Chloride, Nitrogen Oxides

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate personal protective equipment.

Spill Cleanup Methods: Small Liquid Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

7 HANDLING AND STORAGE

Handling: Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or

swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Storage: Store away from incompatible materials.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
Paraquat-dichloride	CA. Ontario OELs	TWA	0.1 mg/m³	
Paraquat-dichloride	US. NIOSH Guide	IDLH	1 mg/m³	
Paraquat-dichloride (Respirable dust.)	US. OSHA Z-1 PEL	TWA	0.5 mg/m³	Skin

Engineering Controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Eye Protection: Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

Hand Protection: It is a good industrial hygiene practice to minimize skin contact.

Skin Protection: Risk of contact: Use skin protection.

Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental Exposure Controls: Environmental manager must be informed of all major spillages.

9 PHYSICAL AND CHEMICAL PROPERTIES

Color: Green
Odor: Characteristic
Physical State: Liquid
pH: 5.3
Specific Gravity: 1.148

10 STABILITY AND REACTIVITY

Stability: Stable.

Conditions to Avoid: None known.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: None known.

11 TOXICOLOGICAL INFORMATION

Specified Substance(s)

Listed Carcinogens: None.

Product Information
Acute Toxicity:
Test Results
Dermal LD50 (Rat): > 4000 mg/kg
Inhalation LC50 (4 hour(s), Rat): <0.052 mg/l
Oral LD50 (Rat): 500 - 2000 mg/kg

Other Acute: Causes eye irritation.

Chronic Toxicity: Danger of adverse health effects by prolonged exposure. Can cause lung damage. May cause damage to the liver and kidneys.

12 ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Product
EC50 (Algae): 1.98 mg/l
LC50 (96 hour(s), Common Carp): 4.66 mg/l
EC50 (48 hour(s), Daphnia magna): 3.86 mg/l

Mobility: May cause long-term adverse effects in the aquatic environment.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

13 DISPOSAL CONSIDERATIONS

General Information: Dispose of waste and residues in accordance with local authority requirements.

Disposal Methods: No specific disposal method required.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14 TRANSPORT INFORMATION

DOT
UN No.: UN2922
Proper Shipping Name: Corrosive liquids, toxic, n.o.s., (paraquat dichloride 43.8%), Class 8 (6.1), UN2922, PGIII, RQ=10lbs.
Class: 8
Packing Group: III
Label(s): 6.1

TDG
UN No.: UN2922
Proper Shipping Name: Corrosive liquids, toxic, n.o.s (paraquat-dichloride)
Class: 8 (6.1)
Packing Group: III

IATA
UN No.: UN2922
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (paraquat-dichloride)
Class: 8 (6.1)
Packing Group: III
Label(s): Toxic

IMDG
UN No.: UN2922
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (paraquat dichloride)
Class: 8 (6.1)
Packing Group: III
EmS No.: F-A, S-A

15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: D1B, D2A, D2B

Mexican Dangerous Statement: This product is dangerous according to Mexican regulations.

Inventory Status

This product or all components are listed or exempt from listing on the following inventory: TSCA

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): Not regulated.

SARA Title III
Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):

Chemical Name	RQ	TPQ
Paraquat-dichloride	10 lbs	

Section 311/312 (40 CFR 370):

[X] Acute (Immediate) [X] Chronic (Delayed) [ ] Fire [ ] Reactive [ ] Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372):

Chemical Name	CAS-No.	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Paraquat-dichloride	1910-42-5	10000 lbs	25000 lbs

For reporting purposes: the De Minimis Concentration for a toxic chemical in a mixture is 0.1% for carcinogens as defined in 29 CFR 1910.1200(d)(4) or 1% for others.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
Not regulated.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): Not regulated.

Drug Enforcement Act: Not regulated.

TSCA

TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.

TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated.

TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated.

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated.

Massachusetts Right-To-Know List: Paraquat-dichloride

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated.

Minnesota Hazardous Substances List: Paraquat-dichloride

New Jersey Right-To-Know List: Paraquat-dichloride

Pennsylvania Right-To-Know List: Paraquat-dichloride

Rhode Island Right-To-Know List: Paraquat-dichloride

16 OTHER INFORMATION

HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	2	1	0	NONE

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	2*	1	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe *- Chronic Health Effect
HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

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Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.