CROP PROTECT DIRECT

PARAQUAT 3SL

HERBICIDE

SAFETY DATA SHEET

FOR EMERGENCY CALL: 1 800-424-9300 (CHEMTREC)
COMPANY PHONE NUMBER: 703-527-3887
POISON CONTROL CENTER: 800-222-1222

1. IDENTIFICATION

PRODUCT NAME: Crop Protect Direct Paraquat 3SL

DESCRIPTION: Liquid Herbicide

EPA REG. NO.: 101458-2

MANUFACTURER ADDRESS: JABCO, LLC
550 W. Pioneer Blvd. Suite 140
Mesquite, NV 89027

2. HAZARD IDENTIFICATION

DANGER
Fatal in contact with skin or if inhaled.
Toxic if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause respiratory irritation.

Causes damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

HAZARD CLASSIFICATION
OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

ACUTE TOXICITY - Oral	Category 3
ACUTE TOXICITY - Dermal	Category 2
ACUTE TOXICITY - Inhalation	Category 2
SKIN CORROSION/IRRITATION	Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION	Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation)	Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE)	Category 1
AQUATIC HAZARD (ACUTE)	Category 1
AQUATIC HAZARD (LONG-TERM)	Category 1

PRECAUTIONARY STATEMENTS GENERAL
Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

PRECAUTIONARY STATEMENTS PREVENTION
Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not get in eyes, on skin, or on clothing. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

PRECAUTIONARY STATEMENTS RESPONSE
Collect spillage. Get medical attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. IF ON SKIN: Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or physician. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

PRECAUTIONARY STATEMENTS - STORAGE
Store locked up

PRECAUTIONARY STATEMENTS - DISPOSAL
Dispose of contents and container in accordance with all local, regional, national and international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE/MIXTURE
Mixture

CHEMICAL NAME
1,1'-dimethyl-4,4'-bipyridilium dichloride

OTHER MEANS OF IDENTIFICATION
Quaternary Ammonium Chloride Herbicide

CAS NUMBER/OTHER IDENTIFIERS
Quaternary Ammonium Chloride Herbicide

CAS NUMBER
Not applicable

PRODUCT CODE
Not applicable

Ingredient Name	CAS No	Weight-%
Paraquat dichloride	1910-42-5	30-60
Other inert	N/A	

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

Inhalation: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.

Inhalation: Fatal if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: Fatal in contact with skin. Causes skin irritation.

Ingestion: Toxic if swallowed. Irritating Ingestion : to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain or irritation, watering, redness.

Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing.

Skin contact: Adverse symptoms may include the following: irritation, redness

Ingestion: No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None.

Specific hazards arising from the chemical: This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, halogenated compounds

Special protective actions for fire-fighters: No special measures are required.

Special protective equipment for firefighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to

deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and material for containment and cleaning up
Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures. Remove contaminated clothing and protective equipment before entering eating areas.
Conditions for safe storage, including any incompatibilities
Storage Conditions: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Occupational exposure limits

Ingredient Name	Exposure limits
Paraquat dichloride	**OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 0.1 mg/m³ 8 hours. Form: Respirable dust **NIOSH REL (United States, 10/2013). Absorbed through skin.** TWA: 0.1 mg/m³ 10 hours. Form: Respirable fraction

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures, such as personal protective equipment
General Hygiene Considerations: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Skin and body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection: Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be

based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Color	Dark green
Odor	Pungent (Strong)
Odor threshold	No information available
Property	
pH	4 to 5
Melting point / freezing point	No information available
Boiling point / boiling range	No information available
Flash point	Closed cup: >100°C (>212°F)
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	1.13
Water solubility	Soluble in the following materials: cold water and hot water.
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available

10. STABILITY AND REACTIVITY

Reactivity: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability: The product is stable.
Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid: No specific data.
Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials..
Hazardous Decomposition Products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity

Product/ingredient Name	Result	Species	Dose	Exposure
Paraquat dichloride	LD50 Dermal LD50 Dermal LD50 Oral	Rabbit Rat Rat	325 mg/kg 80 mg/kg 57 mg/kg	- - -

Irritation/Corrosion

Product/ ingredient Name	Result	Species	Score	Exposure	Observ.
Paraquat dichloride	Eyes-Mild irritant	Rabbit	-	25 mg	-
	Eyes-Severe irritant	Rabbit	-	2500 ug	-

Sensitization: There is no data available

Carcinogenicity: There is no data available

Specfic target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Paraquat dichloride	Category 3	Not applicable	Respiratory tract irritation

Specfic target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Paraquat dichloride	Category 3	Not determined	Not determined

Aspiration hazard: There is no data available.
Information on the likely routes of exposure: There is no data available
Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	Fatal if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	Fatal in contact with skin. Causes skin irritation.
Ingestion	Toxic if swallowed. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation, watering, redness
Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing
Skin contact	Adverse symptoms may include the following: irritation, redness

Ingestion No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms: Redness. Burning. May cause blindness. Itching. Rashes. Hives. Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral): 1,615.70 mg/kg

Unknown acute toxicity: 4.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects

General: Causes damage to organs through prolonged or repeated exposure

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	132 mg/kg
Dermal	185.3 mg/kg
Inhalation (dusts and mists)	0.1158 mg/L

12. ECOLOGICAL INFORMATION

Toxicity

Chemical Name	Result	Species	Exposure
Paraquat dichloride	Acute EC50 0.55 ppb Fresh water	Algae - Navicula pelliculosa	4 days
	Acute EC50 51 µg/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 18000 µg/L Fresh water	Crustaceans - Gammarus lacustris	48 hours
	Acute LC50 0.017 µg/L Fresh water	Daphnia - Daphnia similis - Neonate	48 hours
	Acute LC50 9410 µg/L Fresh water	Fish - Cnesterodon decem-maculatus - Fry	96 hours
	Chronic NOEC 20 µg/L Fresh water	Algae - Scenedesmus acutus	96 hours
	Chronic NOEC 10 µg/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days

Persistence and degradability: There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP ow	BCF	Potential
Paraquat dichloride	-4.5	1.91	low

Mobility in soil

Soil/water partition coefficient (K oc): Not available.

Over adverse effects: No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have

not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION

	DOT Classification	IMDG	IATA
UN number	UN2922	UN2922	UN2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (Paraquat dichloride)	CORROSIVE LIQUID, TOXIC, N.O.S. (Paraquat dichloride)	CORROSIVE LIQUID, TOXIC, N.O.S. (Paraquat dichloride)
Transport hazard class(es)	8 (6.1)	8 (6.1)	8 (6.1)
Packing group	III	III	III
Enviromental hazards	No.	No.	No.
Additional information			The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

15. REGULATORY INFORMATION

U.S. Federal regulations:
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted
Clean Water Act (CWA) 307: Paraquat dichloride
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients

Chemical Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Paraquat dichloride	30 - 60	Yes	-	-	-	-

SARA 304 RQ : Not applicable.
SARA 311/312 Classification : Immediate (acute) health hazard, Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Paraquat dichloride	30 - 60	No	No	No	Yes	Yes
Other Inert		No	No	No	Yes	No

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Paraquat dichloride	1910-42-5	30-60
Supplier notification	Paraquat dichloride	910-42-5	30-60

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.
State regulations
Massachusetts: The following components are listed: Paraquat dichloride
New York: The following components are listed: Paraquat; 4,4'-Bipyridinium, 1,1'-dimethyl-, dichloride
New Jersey: The following components are listed: Paraquat dichloride
Pennsylvania: The following components are listed: Paraquat dichloride
California Prop. 65: WARNING: This product contains a chemical known to the State of California to cause cancer.

Name	Cancer	Reproductive	No significant risk level	Max. acceptable dosage level
Paraquat dichloride	Yes	No	No	No

International regulations
International lists:
Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): Not determined.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals: Not listed
Chemical Weapons Convention List Schedule II Chemicals: Not listed
Chemical Weapons Convention List Schedule III Chemicals: Not listed

16. OTHER INFORMATION

History
Date of issue mm/dd/yyyy: 02/12/2024

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

END OF SAFETY DATA SHEET