SAFETY DATA SHEET

DREXEL QUICK-QUAT™

Section 1: Material Identification

Product Name: Drexel Quik-Quat™

EPA Reg. No.: 19713-617

CAS NO: 1910-42-5

Formula: $C_{12}H_{14}Cl_2N_2$

Company: Drexel Chemical Company
1700 Channel Avenue
Memphis, TN 38106

Synonyms: 1,1'-dimethyl-4-4'-bypyridinium dichloride
Paraquat Dichloride

Identifiers:

EINECS: 217-615-7
RTECS: DW2275000
DOT label: See Section 14 for more information.

Emergency Telephone Number:

CHEMTREC	Drexel Chemical Co.
Tel: 1-800-424-9300	901-774-4370

This product is an EPA FIFRA registered pesticide. Some of the classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see **Section 15. REGULATORY INFORMATION** for explanation.

Section 2: Hazard Identification

(As defined by the OSHA Hazard Communication Standard, 29)

GHS Classification:

Health Hazards:	Acute Oral	Category 3
	Acute Dermal	Category 3
	Acute Inhalation	Category 2
	Skin Irritation	Category 2
	Eye Irritation	Category 2B
	Aquatic Toxicity Acute	Category 3

GHS Label Elements:

Signal Word: Danger

Hazard Statement:

Toxic if swallowed.
Harmful in contact with skin.
Fatal if inhaled.
Causes skin irritation.
Causes eye irritation.
Moderately toxic to aquatic life.

Precautionary statements:

Prevention:

Avoid breathing vapors. Use only outdoors or in well-ventilated area**.**
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wash exposed skin areas thoroughly after handling. Wear gloves of Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”) or Polyvinyl chloride (“PVC” or “vinyl”).
Wear safety glasses with side shields or chemical splash goggles to prevent vapors or mists from entering the eyes.
Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Response:

If Swallowed: Call a poison control center or doctor immediately for treatment advice. **SPEED IS ESSENTIAL.** If available, give an absorbent such as activated charcoal, bentonite or Fuller’s Earth. Rinse mouth with water then have person sip a glass of water if able to swallow.
If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. **SPEED IS ESSENTIAL.** Call a poison control center or doctor for further treatment advice.
If On Skin; Wash with plenty of water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if easy to do continue rinsing. If eye irritation persists: Get medical attention.

Storage:

Store in a cool, dry, well ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Disposal:

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities.

Section 3: Composition Information

Components	CAS No.:	% By Wt.:	OSHA PEL:	ACGIH TLV:
Active Ingredient:				
Paraquat Dichloride	1910-42-5	43.2%	0.5 mg/m TWA (respirable; skin; as paraquat)	0.08 mg/m^3 TWA (respirable); 0.5 mg/m^3 TWA (total)
Inert Ingredients:	N/A	56.8%	N/A	N/A

Section 4: First-Aid Measures

Eye Contact: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. SPEED IS ESSENTIAL. If available, give an absorbent such as activated charcoal, bentonite or Fuller's Earth. Rinse mouth with water then have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. Have product label with you when calling a poison control center or doctor.

Skin Contact: Immediately flush skin with water for 15 to 20 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Destroy contaminated leather items such as shoes, belts, and watchbands.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Note to Physician: Administer either activated charcoal (100 grams for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). The use of gastric lavage without administration of a absorbent 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 cornel 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.

Section 5: Fire Fighting Measures

Fire Hazards: Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Thermal decomposition during a fire can produce irritating and toxic gases. Hydrolizes in alkaline media. Reacts with aluminum to produce hydrogen.

Flammability classification (OSHA 29 CFR 1910.1200): Non-combustible
Flash point: >220°F
Lower flammable limit (% by volume): N/A
Upper flammable limit (% by volume): N/A

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Evacuate the area including downwind areas and fight the fire from upwind at a safe distance to avoid hazardous vapors or decomposition products.

Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff.

Firefighting media: use foam, dry chemical, carbon dioxide, or water fog when fighting fires involving this product. Do not use water jet, as this may spread burning material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

Special Protective Equipment for Firefighters:

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Hazardous Combustion Products: Carbon oxides, chlorine, hydrogen chloride; possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

NFPA:	**Health:**	**Flammability:**	**Reactivity:**
	3	**1**	**1**

(Rating: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Insignificant)

Section 6: Accidental Release Measures

Steps to be taken if Material is Released or Spilled:

- Contain spilled material at source if possible. Small spills: Apply suitable absorbent then sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Drexel Chemical Co. for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Personal Precautions:

- Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7: Handling and Storage

KEEP OUT OF REACH OF CHILDREN

Handling: **General Handling:** Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not swallow. Avoid breathing vapor. Use with adequate ventilation. Wear chemical protective equipment when handling. Keep away from heat, sparks and flame. See Section 8, Exposure Controls and Personal Protection.

Storage: Store in a cool, dry, well-ventilated, secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Section 8: Exposure Controls / Personal Protection

Paraquat Dichloride: OSHA PEL 0.5 mg/m^3 TWA (respirable; skin; as paraquat); ACGIH TLV 0.08 mg/m^3 TWA (respirable); 0.5mg/m^3 TWA (total)

Personal Protection:

Eye/Face Protection: Wear safety glasses with side shields or chemical splash goggles to prevent vapors or mists from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR") or Polyvinyl chloride ("PVC" or "vinyl").

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When handling in enclosed areas, when large quantities of mists are generated or prolonged exposure is possible in excess of the 8-houir TWA, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSG approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefixTC-14G).

Ingestion: Orally toxic, may be fatal if swallowed. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Engineering Controls:

Ventilation: When handling this product proper ventilation is required to maintain exposure below the 8-hr. TWA. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Section 9: Physical and Chemical Properties

Physical State:	Liquid
Color:	Clear
Odor:	Strong, Pungent
Flash Point:	>200°F
Vapor Pressure (mmHg):	23.7 mm HG
Boiling Point:	>212°F
Vapor Density (air = 1):	N/A
Bulk Density (H_2O = 1):	9.58 lbs. /gal.
Freezing Point:	N/A
Solubility in water (wt %) weight):	Complete
pH:	5 (5% solution)
Viscosity:	N/A

Section 10: Stability and Reactivity

Stability/Instability: Thermally stable at typical use temperatures and in closed containers.

Conditions to Avoid: Avoid heat of open flame. Avoid high temperatures above 130°F (54.4°C).

Incompatible Materials: 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 Polymerization: Will not occur

Thermal Decomposition: Hazardous decomposition products can include and are not limited to: Carbon oxides, chlorine, hydrogen chloride; possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

Section 11: Toxicological Information

Acute Toxicity

Ingestion:

- LD50, Rat 283 mg/kg

Dermal (rat):

- LD50, (rat) >2,000 mg/kg

Inhalation:

- LC50,(4h), Aerosol, Rat 0.0006 mg/l

Eye Irritation: (rabbit):

- Moderately Irritating (rabbit)

Skin Irritation (rabbit):

- Slight to mild

Sensitization Skin:

- Non-sensitizer

Chronic Toxicity/Subchronic Toxicity - Paraquat Dichloride:

- Evidence of cataracts, body weight reduction and lung effects at 75 ppm and above in 2.5 year rat studies. Evidence of lung effects leading to alveolar collapse and death at 3 mg/kg/day in 90-day dog diet study. Chronic pneumonitis was seen in a 1-years dog study at 0.93 mg/kg/day and above.

Carcinogenicity – Paraquat Dichloride:

- No evidence in rat or mouse.

Teratogenicity, mutagenicity, and other reproductive 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.

Section 12: Ecological Information

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

Environmental Fate:
Low bioaccumulation potential. Persistent in soil. Not persistent in water. Sinks in water after 24 hours.

Summary of Effects:
Practically non-toxic to bees. Slightly toxic to fish and birds. Moderately toxic to invertebrates.

Eco-Acute Toxicity – Paraquat Dichloride:

- Rainbow Trout: LC50/EC50 55 ppm
- Bluegill: LC50/EC50 13 ppm
- Bees: LC50/EC50 48 mg/bee
- Bobwhite Quail: 8-day dietary LC50/EC50 981 ppm
- Mallard Duck: 8-day dietary LC50/EC50 4048 ppm
- Invertebrates (Water Flea) LC50/EC50 4.0 ppm

Section 13: Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Section 14: Transport Information

DOT Classification: UN 2922, Corrosive Liquid, Toxic, N.O.S. (Paraquat), 8 (6.1), PG-III

IMDG: UN 2922**,** Corrosive Liquid, Toxic, N.O.S. (Paraquat), 8 (6.1), PG-III, Marine Pollutant

IATA/Air Transportation: UN 2922**,** Corrosive Liquid, Toxic, N.O.S. (Paraquat), 8 (6.1), PG-III

Freight Description: Agricultural Herbicide, Liquid, N.O.S.

ERG Guide No.: 154

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

OSHA Hazard Communication Standard:

- **This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.**
- **EPA FIFRA INFORMATION**
  This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemical. The hazard information required on the pesticide label is listed out below. The pesticide label also includes other important information, including directions for use.

SARA/TITLE III:

- **Sec. 302. Reportable Quantity (RQ):** Report product spills>=2.4 gal. (based on paraquat dichloride [RQ = 10 lbs.] content in the formulation)
- **Sec. 311/312. Hazard Categories:** Acute Health Hazard
  Chronic Health Hazard
- **Sec. 313. Toxic Chemical(s):** Paraquat Dichloride (CAS No. 1910-42-5)
- **RCRA Waste Code:** Corrosive D002

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

- This product is not listed.

Toxic Substances Control Act (TSCA):

- All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

Section 16: Other Information

Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

Date Revised: March 31, 2016 **Supersedes: May 1, 2015**