

TRIBUNE

Version Revision Date: SDS Number: This version replaces all previous versions. 1.1 03/10/2023 S1445449872

SECTION 1. IDENTIFICATION

Product name : TRIBUNE Design code. : A12872A

Product Registration number : 100-1390

Manufacturer or supplier's details

Company name of supplier : Syngenta Crop Protection, LLC

Address : Post Office Box 18300 Greensboro NC 27419

United States of America (USA)

Telephone : 1 800 334 9481 Telefax : 1 336 632 2192

E-mail address : sds.requests@syngenta.com

Emergency telephone : 1 800 888 8372

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : General Use Pesticide

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to Metals : Category 1

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Eye irritation : Category 2A

Specific target organ toxicity

- single exposure

Category 3 (Respiratory system)

Specific target organ toxicity

- repeated exposure

Category 1 (Eyes)

GHS label elements

Hazard pictograms







Signal Word : Danger

Hazard Statements : H290 May be corrosive to metals.



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H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H372 Causes damage to organs (Eyes) through prolonged or

repeated exposure.

Precautionary Statements

Prevention:

P234 Keep only in original container.

P260 Do not breathe mist or vapors.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON

CENTER/ doctor if you feel unwell. Rinse mouth.

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314 Get medical advice/ attention if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/ atten-

tion.

P390 Absorb spillage to prevent material damage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P406 Store in corrosive resistant container with a resistant inner liner.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
diquat dibromide	85-00-7	37.3001

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES



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General advice Have the product container, label or Safety Data Sheet with

you when calling the emergency number, a poison control

center or physician, or going for treatment.

If inhaled Take the victim into fresh air.

If breathing is irregular or stopped, administer artificial

respiration.

Keep patient warm and at rest.

Call a physician or poison control center immediately.

Take off all contaminated clothing immediately. In case of skin contact

> Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

Rinse immediately with plenty of water, also under the eyelids, In case of eye contact

> for at least 15 minutes. Remove contact lenses.

Immediate medical attention is required.

If swallowed If swallowed, seek medical advice immediately and show this

container or label.

Do NOT induce vomiting.

Most important symptoms

and effects, both acute and

delayed

Gastrointestinal discomfort

Diarrhea

Notes to physician Administer either activated charcoal (100g for adults or 2g/kg

body weight in children) or Fuller's Earth (15% solution; 1 liter

for adults or 15ml/kg body weight in children).

Inflammation of the mouth, throat and esophagus.

NOTE: The use of gastric lavage without administration of an

adsorbent has not shown any clinical benefit.

Eye contact: Severe damage may be caused by apparently trivial contact and healing may be delayed. Medical supervision should continue until complete healing has

occurred.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Extinguishing media - small fires

Use water spray, alcohol-resistant foam, dry chemical or

carbon dioxide.

Extinguishing media - large fires

Alcohol-resistant foam

or

Water spray

Unsuitable extinguishing

media

fighting

Do not use a solid water stream as it may scatter and spread

Specific hazards during fire As the product contains combustible organic ingredients, fire

will produce dense black smoke containing hazardous

products of combustion (see section 10).

Exposure to decomposition products may be a hazard to

health.

Further information Do not allow run-off from fire fighting to enter drains or water

Cool closed containers exposed to fire with water spray.

Special protective equipment:

for fire-fighters

Wear full protective clothing and self-contained breathing

apparatus.



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SECTION 6. ACCIDENTAL RELEASE MEASURES

tive equipment and emer-

gency procedures

Personal precautions, protec- : Refer to protective measures listed in sections 7 and 8.

Environmental precautions Prevent further leakage or spillage if safe to do so.

> Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform

respective authorities.

Methods and materials for containment and cleaning up Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth,

vermiculite) and place in container for disposal according to

local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents.

Retain and dispose of contaminated wash water.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling Avoid contact with skin and eyes.

> When using do not eat, drink or smoke. For personal protection see section 8.

Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel

or fiberglass.

No special storage conditions required. Conditions for safe storage

Keep containers tightly closed in a dry, cool and well-

ventilated place.

Keep out of the reach of children.

Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters / Permissible	Basis
		exposure)	concentration	
diquat dibromide	85-00-7	TWA	0.5 mg/m3	NIOSH REL
		TWA	0.5 mg/m3	OSHA P0
		TWA (Inhal-	0.5 mg/m3	ACGIH
		able particu-	(the cation)	
		late matter)		
		TWA (Res-	0.1 mg/m3	ACGIH
		pirable par-	(the cation)	
		ticulate mat-		
		ter)		

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE **Engineering measures**

> CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS



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CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection

Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide

adequate protection.

Hand protection

Remarks

Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things from the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection

: Tightly fitting safety goggles

Always wear eye protection when the potential for inadvertent

eve contact with the product cannot be excluded.

Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to

the specific work-place.

Remove and wash contaminated clothing before re-use.

Wear as appropriate: Impervious clothing

Protective measures

The use of technical measures should always have priority

over the use of personal protective equipment.

When selecting personal protective equipment, seek

appropriate professional advice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid



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Color : dark brown

Odor : odorless

Odor Threshold : No data available

pH : 4-6

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : Method: Pensky-Martens closed cup

does not flash

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.202 g/cm3 (77 °F / 25 °C)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : soluble

Partition coefficient: n-

octanol/water

No data available

Autoignition temperature : $> 1202 \, ^{\circ}\text{F} \, / > 650 \, ^{\circ}\text{C}$

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY



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Reactivity : See section "Possibility of hazardous reactions".

Chemical stability
Possibility of hazardous reac-

tions

Stable under normal conditions. Corrosive in contact with metals

No decomposition if used as directed.

Incompatible materials : Aluminum

Mild steel Iron

Hazardous decomposition

Conditions to avoid

products

No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion Inhalation Skin contact Eye contact

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): 886 mg/kg

Acute inhalation toxicity : Assessment: The substance/mixture is not toxic on inhalation

as defined by dangerous goods regulations.

Acute toxicity estimate: 0.6059 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Calculation method

Acute dermal toxicity : LD50 (Rat, male and female): > 5,050 mg/kg

Components:

diquat dibromide:

Acute oral toxicity : LD50 (Rat, female): 399.75 mg/kg

Remarks: Lethal dose for man is approximately 4-6g of diquat (equivalent to approximately 60mg/kg). May cause nausea, vomiting, abdominal pain and diarrhea within a few hours of swallowing. Ulceration of lips, mouth, throat and intestine may follow within 24-48 hours. Kidney failure and liver damage may occur; in severe cases circulatory collapse; coma or

death/cardiac arrest.

Acute inhalation toxicity : LC50 (Rat, male): 0.226 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 792 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity



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Skin corrosion/irritation

Product:

Species : Rabbit

Result : No skin irritation

Components:

diquat dibromide:

Species : Rabbit

Result : Irritating to skin.
Remarks : Expert judgment

May also cause discoloration, cracking and loss of nails. Nor-

mal growth follows without delay.

Serious eye damage/eye irritation

Product:

Species : Rabbit Result : Eye irritation

Components:

diquat dibromide:

Species : Rabbit
Result : Eye irritation
Remarks : Expert judgment

This material has a delayed eye irritation effect. May lead to ulceration of cornea and conjunctival epithelium giving rise to secondary infection. Although healing may be slow, the injury is superficial and with proper medical care recovery will be

complete, even in severe cases.

Respiratory or skin sensitization

Product:

Species : Guinea pig

Result : Did not cause sensitization on laboratory animals.

Components:

diquat dibromide:

Species : Guinea pig

Result : May cause sensitization by skin contact.

Germ cell mutagenicity

Components:

diquat dibromide:

Germ cell mutagenicity -

Assessment

Animal testing did not show any mutagenic effects.



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Carcinogenicity

Components:

diquat dibromide:

Carcinogenicity - Assess-

ment

No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

diquat dibromide:

Reproductive toxicity - As-

sessment

No toxicity to reproduction

STOT-single exposure

Components:

diquat dibromide:

Assessment : The substance or mixture is classified as specific target organ

toxicant, single exposure, category 3 with respiratory tract

irritation.

STOT-repeated exposure

Components:

diquat dibromide:

Target Organs : Eyes

Assessment : The substance or mixture is classified as specific target organ

toxicant, repeated exposure, category 1.

Remarks : Ocular effects (cataracts) have been reported following long

term oral exposure of laboratory animals.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 65.43 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia similis (Water flea)): 0.59 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Raphidocelis subcapitata (freshwater green alga)):

0.13 mg/l

Exposure time: 72 h

NOEC (Raphidocelis subcapitata (freshwater green alga)):

0.025 mg/l

Exposure time: 72 h



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Components:

diquat dibromide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): Calculated

10.46 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): Calculated 2.49 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Navicula pelliculosa (Freshwater diatom)): Calculated

0.001148 mg/l Exposure time: 96 h

NOEC (Navicula pelliculosa (Freshwater diatom)): Calculated

0.0005945 mg/l Exposure time: 96 h

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): Calculated

0.04726 mg/l

Exposure time: 34 d

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): Calculated 0.0504 mg/l

Exposure time: 21 d

Persistence and degradability

Components:

diquat dibromide:

Stability in water : Degradation half life: > 30 d

Remarks: Persistent in water.

Bioaccumulative potential

Components:

diquat dibromide:

Bioaccumulation : Remarks: Low bioaccumulation potential.

Mobility in soil

Components:

diquat dibromide:

Distribution among environ-

mental compartments

: Remarks: immobile

Stability in soil : Dissipation time: 11 - 41 y

Percentage dissipation: 50 % (DT50)

Remarks: Persistent in soil.



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Other adverse effects

Components:

diquat dibromide:

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues Do not contaminate ponds, waterways or ditches with

chemical or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or

incineration.

If recycling is not practicable, dispose of in compliance with

local regulations.

Empty remaining contents. Contaminated packaging

Triple rinse containers.

Empty containers should be taken to an approved waste

handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number **UN 1760**

Proper shipping name CORROSIVE LIQUID, N.O.S.

(DIQUAT DIBROMIDE)

Class 8 Packing group Ш Labels 8

IATA-DGR

UN/ID No. UN 1760

Proper shipping name Corrosive liquid, n.o.s.

(DIQUAT DIBROMIDE)

Class 8 Packing group Ш

Corrosive Labels Packing instruction (cargo 856

aircraft)

Packing instruction (passen: : 852

ger aircraft)

IMDG-Code

UN number UN 1760

CORROSIVE LIQUID, N.O.S. Proper shipping name

(DIQUAT DIBROMIDE)

Class 8 Packing group Ш



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Labels : 8

EmS Code : F-A, S-B Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number : UN 1760

Proper shipping name : Corrosive liquids, n.o.s.

(DIQUAT DIBROMIDE)

Class : 8 Packing group : III

Labels : CORROSIVE

ERG Code : 154 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

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: Caution

Harmful if inhaled.

Harmful if swallowed.

Causes moderate eye irritation.

Avoid breathing spray mist.

Avoid contact with skin, eyes or clothing.

CERCLA Reportable Quantity

•	•		
Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
diquat dibromide	85-00-7	1000	2680

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to Metals

Acute toxicity (any route of exposure)

Specific target organ toxicity (single or repeated exposure)

Serious eye damage or eye irritation



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SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis)

reporting levels established by SARA Title III, Section 313.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:

Health 3 0 Instability

Special hazard

HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated

values)

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek

OSHA P0 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemical Chemical Substances in China; IMDG - International Chemical Chemic

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cals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity: SADT - Self-Accelerating Decomposition Temperature: SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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