

# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

---

### SECTION 1. IDENTIFICATION

Product name : FIRESTORM

Product code : 400000001079

#### Manufacturer or supplier's details

Company: MacDermid Agricultural Solutions, Inc  
245 Freight St  
Waterbury, CT  
United States of America  
06702  
Telephone : +1 800 423 8569

Prepared by sds.request@arysta.com

Further information for the safety data sheet :  
sds.request@arysta.com

#### 1.4 Emergency telephone number

Emergency telephone number: Agriphar Crop Solutions: +1 800 423 8569(24 hours) 800-424-9300  
For additional emergency telephone numbers see section 16 of the  
Safety Data Sheet.

#### Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Agriculture, For professional users only.

---

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 2

Acute toxicity (Dermal) : Category 3

Skin irritation : Category 2

# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

Eye irritation : Category 2A

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

### GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H301 + H311 Toxic if swallowed or in contact with skin  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H330 Fatal if inhaled.  
H335 May cause respiratory irritation.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
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.  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.  
P280 Wear protective gloves/ protective clothing.  
P284 Wear respiratory protection.  
**Response:**  
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.  
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P361 Remove/Take off immediately all contaminated clothing.  
P391 Collect spillage.  
**Storage:**

# SAFETY DATA SHEET

## FIRESTORM

Version 2.6      Revision Date: 10/08/2015      MSDS Number: 400000001079      Country: US  
Language: EN

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture  
Chemical nature : Herbicide

### Hazardous components

Chemical Name	CAS-No.	Concentration (% w/w)
paraquat-dichloride	1910-42-5	44.2 <

## SECTION 4. FIRST AID MEASURES

If inhaled : Call a POISON CENTER or doctor/ physician.

In case of skin contact : Remove contaminated clothing and shoes.  
Call a POISON CENTER or doctor/ physician.

In case of eye contact : Call a POISON CENTER or doctor/ physician.

If swallowed : Call a physician or poison control centre immediately.  
Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed : irritant effects  
Symptoms may be delayed.  
Toxic by inhalation.  
Toxic in contact with skin.  
Toxic if swallowed.

Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Extinguishing media - large fires  
Alcohol-resistant foam  
(on small fires)  
Carbon dioxide (CO<sub>2</sub>)

# SAFETY DATA SHEET

## FIRESTORM

Version 2.6      Revision Date: 10/08/2015      MSDS Number: 400000001079      Country: US  
Language: EN

Dry chemical

- Unsuitable extinguishing media : Water spray jet
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Do not discharge extinguishing waters into streams, rivers and lakes.
- Special protective equipment for firefighters : Body covering protective clothing, full "turn-out" gear.  
Self-contained breathing apparatus (EN 133)

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate unnecessary personnel.  
Avoid all contact with material.  
Wear suitable protective equipment.
- Environmental precautions : Prevent leaks and prevent soil / water pollution caused by leaks.
- Methods and materials for containment and cleaning up : Absorb on inert material such as sand, earth, vermiculite.  
Collect for disposal.  
Dam up.  
Large spills should be collected mechanically (remove by pumping) for disposal.  
Pump excess material into suitable container (metal drums, metal tank, or such).  
  
In accordance with local and national regulations.

### SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Wear suitable protective equipment.  
Warn personnel about the dangers of the product.  
Keep container tightly closed.  
Keep container tightly closed.
- Conditions for safe storage : Keep in a dry, cool place.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
paraquat-dichloride	1910-42-5	TWA (respirable fraction)	0.5 mg/m3	OSHA Z-1
		TWA (respirable dust frac-	0.1 mg/m3	OSHA P0

# SAFETY DATA SHEET

## FIRESTORM

Version 2.6      Revision Date: 10/08/2015      MSDS Number: 400000001079      Country: US  
Language: EN

---

		tion)		
		TWA (Respirable)	0.1 mg/m3	NIOSH REL
		TWA (respirable dust)	0.5 mg/m3	OSHA Z-1

### Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.  
Respirator with a dust filter

Hand protection

Remarks : PVC or other plastic material gloves Rubber gloves

Eye protection : Safety glasses with side-shields conforming to EN166

Skin and body protection : Impervious clothing

Hygiene measures : Wash thoroughly after handling.  
Remove and wash contaminated clothing before re-use.

---

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid

Colour : dark, green

Odour : strong, pungent, unpleasant

Odour Threshold : No data available

pH : 5.0, 1 %

Melting point/range : No data available

Boiling point/boiling range : 105 °C

Flash point : Not applicable

Evaporation rate : Not applicable

Upper explosion limit : Not explosive

Lower explosion limit : Not explosive

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : 1.126

Solubility(ies)

# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

---

Water solubility	: completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable
Self-Accelerating decomposition temperature (SADT)	: Method: No information available.

---

### SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	: Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	: Temperature < 0 °C
Hazardous decomposition products	: Burning produces noxious and toxic fumes.

---

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

##### Product:

Acute oral toxicity	: Acute toxicity estimate: 99.67 mg/kg Method: Calculation method
Acute inhalation toxicity	: Acute toxicity estimate: 0.05 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: Acute toxicity estimate: 299.02 mg/kg Method: Calculation method

##### Components:

# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

---

### **paraquat-dichloride:**

Acute oral toxicity	: LD50 (Rat, female): 283 mg/kg Assessment: The component/mixture is toxic after single ingestion.
Acute inhalation toxicity	: LC50 (Rat): 0.0006 mg/l Exposure time: 4 h Assessment: The component/mixture is highly toxic after short term inhalation.
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg Assessment: The component/mixture is low toxic after single contact with skin.

### **Skin corrosion/irritation**

#### **Components:**

#### **paraquat-dichloride:**

Species: Rabbit  
Assessment: slight irritation

### **Serious eye damage/eye irritation**

#### **Components:**

#### **paraquat-dichloride:**

Species: Rabbit  
Result: Moderate eye irritation  
Assessment: slight irritation

### **Respiratory or skin sensitisation**

#### **Components:**

#### **paraquat-dichloride:**

Assessment: Did not cause sensitisation on laboratory animals.

### **Germ cell mutagenicity**

#### **Product:**

Germ cell mutagenicity - Assessment	: No data available
-------------------------------------	---------------------

### **Carcinogenicity**

#### **Product:**

Carcinogenicity - Assessment	: No data available
------------------------------	---------------------

### **IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

---

### OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

#### Product:

Reproductive toxicity - Assessment : No data available  
No data available

### STOT - single exposure

#### Product:

Exposure routes: Inhalation  
Target Organs: Respiratory system

### STOT - repeated exposure

#### Product:

Remarks: No data available

### Further information

#### Product:

Remarks: The following information is applicable to a component of this material:

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### paraquat-dichloride:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill)): 13 ppm  
LC50 (Oncorhynchus mykiss (rainbow trout)): 55 ppm

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (Water flea)): 4.0 mg/l

### Persistence and degradability

No data available

### Bioaccumulative potential

No data available



# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

### Mobility in soil

No data available

### Other adverse effects

#### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : The following information is applicable to a component of this material:

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of as hazardous waste in compliance with local and national regulations.

## SECTION 14. TRANSPORT INFORMATION

### International Regulation

#### **UNRTDG**

UN number : UN 2922  
Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (Paraquat)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : III  
Labels : 8 (6.1)

#### **IATA-DGR**

UN/ID No. : UN 2922  
Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (Paraquat)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : III  
Labels : Corrosive, Toxic  
Packing instruction (cargo aircraft) : 856  
Packing instruction (passenger aircraft) : 852

#### **IMDG-Code**

# SAFETY DATA SHEET

## FIRESTORM

Version 2.6      Revision Date: 10/08/2015      MSDS Number: 400000001079      Country: US  
Language: EN

UN number : UN 2922  
Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Paraquat)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : III  
Labels : 8 (6.1)  
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.

### National Regulations

#### 49 CFR

UN/ID/NA number : UN 2922  
Proper shipping name : CORROSIVE LIQUIDS, TOXIC, N.O.S.  
(Paraquat)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : III  
Labels : CORROSIVE, TOXIC  
ERG Code : 154  
Marine pollutant : yes(Paraquat)

## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know Act

#### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
paraquat-dichloride	1910-42-5	10	23

**SSARA 311/312 Hazards** : Acute Health Hazard

**SARA 302** : The following components are subject to reporting levels established by SARA Title III, Section 302:

paraquat-dichloride      1910-42-5      44.2 %

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

paraquat-dichloride      1910-42-5      44.2 %

### Clean Air Act

# SAFETY DATA SHEET

## FIRESTORM

Version	Revision Date:	MSDS Number:	Country: US
2.6	10/08/2015	400000001079	Language: EN

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMi Intermediate or Final VOC's (40 CFR 60.489).

### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

### California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

### FIFRA Hazard 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 chemicals. The pesticide label also includes other important information, including directions for use.

## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized 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; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; 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

# SAFETY DATA SHEET

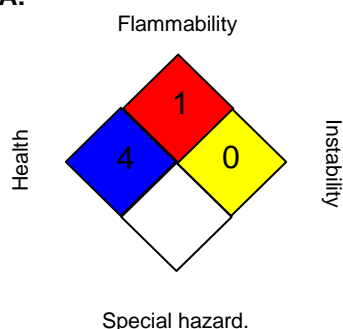
## FIRESTORM

Version 2.6      Revision Date: 10/08/2015      MSDS Number: 400000001079      Country: US  
Language: EN

Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

### Further information

#### NFPA:



#### HMIS III:

HEALTH	4
FLAMMABILITY	1
PHYSICAL HAZARD	1

0 = not significant, 1 = Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

Revision Date : 10/08/2015

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.

US / EN

**Carechem24 International Worldwide Coverage**

# SAFETY DATA SHEET

## FIRESTORM

Version  
2.6

Revision Date:  
10/08/2015

MSDS Number:  
400000001079

Country: US  
Language: EN

### Emergency Phone Number

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670 (NCEC)
<u>Asia Pacific:</u>	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483
	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 0800 100 7479
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
<u>Middle East / Africa:</u>	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
<u>Latin America:</u>	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670