

GRAMOXONE

Version 1.0 Revision Date: 26.10.2018 SDS Number: S1400448782 This version replaces all previous versions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : GRAMOXONE

Design code : A3879GN

Manufacturer or supplier's details

Company : Syngenta SA (Pty) Ltd

Address : P.O. Box 1044,
No. 4 Krokodil drift Avenue Brits 0250
South Africa

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Telefax : +27 12 250 3125

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

Emergency telephone number : +27 (0) 82 446 8946 (Griffon)

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

2. HAZARDS IDENTIFICATION

Most important hazards

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
paraquat dichloride	1910-42-5	Met. Corr. 1; H290 Acute Tox. 3; H301 Acute Tox. 1; H330 Acute Tox. 3; H311 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 25 - < 30
Alkylamine ethoxylate	70955-14-5	Acute Tox. 4; H302 Skin Irrit. 2; H315	>= 3 - < 10

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		Eye Dam. 1; H318	
benzenesulfonic acid, dodecyl-, sodium salt	25155-30-0	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318	>= 3 - < 10

For explanation of abbreviations see section 16.

4. FIRST AID MEASURES

- 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 : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.
- If swallowed : SPEED IS ESSENTIAL.
Immediate medical attention is required.
If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.
- Most important symptoms and effects, both acute and delayed : inflammation of the mouth, throat and oesophagus
Gastrointestinal discomfort
Diarrhoea
- Notes to physician : Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (www.syngenta.com/pqmedguide/).
Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 litre for adults or 15ml/kg body weight in children).
NOTE: The use of gastric lavage without administration of an adsorbent 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 corneal ulceration it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation.

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5. FIREFIGHTING 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 : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.
- Specific extinguishing methods : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.
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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : 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.
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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.
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Conditions for safe storage : No special storage conditions required.
 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.

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 (inhalable fraction)	0,01 mg/m ³	Syngenta
		TWA OEL-RL (Respirable)	0,1 mg/m ³	ZA OEL
Further information: Recommended Limit				

Engineering measures : 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.

Seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
 Suitable respiratory equipment:
 Respirator with a half face mask
 The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Material : Nitrile rubber
 Break through time : > 480 min
 Glove thickness : 0,5 mm

Remarks : Wear protective gloves. The choice of an appropriate glove

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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 breakthrough time depends amongst other things on 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 : Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Tightly fitting safety goggles
Face-shield
- 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : green to dark green
- Odour : No data available
- Odour Threshold : No data available
- pH : 5 - 9
Concentration: 1 % w/v
- Melting point/range : No data available
- Boiling point/boiling range : No data available
- Flash point : > 103 °C
(1024,0 hPa)
Method: Pensky-Martens closed cup
- Evaporation rate : No data available

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Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1,073 g/cm ³
Solubility(ies)		
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	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

10. STABILITY AND REACTIVITY

Reactivity	:	See section "Possibility of hazardous reactions".
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Corrosive in contact with metals
Conditions to avoid	:	No decomposition if used as directed.
Incompatible materials	:	Aluminium Mild steel Iron
Hazardous decomposition products	:	No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Ingestion Inhalation
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Skin contact
Eye contact

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): 550 mg/kg

Acute inhalation toxicity : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Components:

paraquat dichloride:

Acute oral toxicity : LD50 (Rat, female): Calculated 76 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,0002 - 0,0007 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is extremely toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat): Calculated 872 mg/kg

Alkylamine ethoxylate:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

benzenesulfonic acid, dodecyl-, sodium salt:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation

Product:

Species : Rabbit
Result : Irritating to skin.

Components:

paraquat dichloride:

Result : Irritating to skin.

Alkylamine ethoxylate:

Result : Skin irritation

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benzenesulfonic acid, dodecyl-, sodium salt:

Result : Irritating to skin.

Serious eye damage/eye irritation**Product:**

Species : Rabbit
Result : Irreversible effects on the eye

Components:**paraquat dichloride:**

Result : Risk of serious damage to eyes.

Alkylamine ethoxylate:

Result : Risk of serious damage to eyes.

benzenesulfonic acid, dodecyl-, sodium salt:

Result : Risk of serious damage to eyes.

Respiratory or skin sensitisation**Components:****paraquat dichloride:**

Result : Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity**Components:****paraquat dichloride:**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity**Components:****paraquat dichloride:**

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity**Components:****paraquat dichloride:**

Reproductive toxicity - Assessment : No toxicity to reproduction

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STOT - single exposure**Components:****paraquat dichloride:**

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure**Components:****paraquat dichloride:**

Target Organs : Lungs, Kidney
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Repeated dose toxicity**Components:****paraquat dichloride:**

Remarks : Ocular effects (cataracts) have been reported following long term oral exposure of laboratory animals.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 88,39 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia similis (water flea)): 8,64 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 2,33 mg/l
Exposure time: 72 h

NOEC (Pseudokirchneriella subcapitata (green algae)): < 0,05 mg/l
End point: Growth rate
Exposure time: 72 h

Components:**paraquat dichloride:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): Calculated 24 mg/l
Exposure time: 96 h

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): Calculated 2,65 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): Calculated 0,26 mg/l
Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): Calculated 0,02 mg/l
End point: Growth rate
Exposure time: 96 h

ErC50 (Navicula pelliculosa (Freshwater diatom)): Calculated 0,00044 mg/l
Exposure time: 96 h

NOEC (Navicula pelliculosa (Freshwater diatom)): Calculated 0,00028 mg/l
End point: Growth rate
Exposure time: 96 h

M-Factor (Acute aquatic toxicity) : 1.000

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): estimated 0,15 mg/l
Exposure time: 21 d

M-Factor (Chronic aquatic toxicity) : 100

Persistence and degradability

Components:

paraquat dichloride:

Stability in water : Degradation half life: > 30 d
Remarks: Persistent in water.

Bioaccumulative potential

Components:

paraquat dichloride:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -4,5 (20 °C)

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Mobility in soil

Components:

paraquat dichloride:

Distribution among environmental compartments : Remarks: immobile

Stability in soil : Dissipation time: 20 y
Percentage dissipation: 50 % (DT50)
Remarks: Persistent in soil.

Other adverse effects

Components:

paraquat dichloride:

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).

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.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 1760
Proper shipping name : CORROSIVE LIQUID, N.O.S.
(PARAQUAT DICHLORIDE)
Class : 8
Packing group : III
Labels : 8

IATA-DGR

UN/ID No. : UN 1760

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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; 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 Chemicals 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; 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; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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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