



SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Clovermax
Version 1 (UK)

Issuing date: 2012/10/04

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name : **Clovermax**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use : Herbicide

1.3. Details of the supplier of the safety data sheet

Nufarm UK Limited
Wyke Lane
Wyke
Bradford
West Yorkshire BD12 9EJ
United Kingdom
Telephone: +44 (0)1274 691234
Telefax: +44 (0)1274 691176
E-mail address: infouk@uk.nufarm.com

1.4. Emergency telephone number

+44 (0)1274 696603

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

EEC/99/45 :	Xn	R22 - Harmful if swallowed.
	Xi	R41 - Risk of serious damage to eyes.
	N	R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
EG_1272/08 :	AquaticChronic2	H411 - Toxic to aquatic life with long lasting effects.
	EyeDam.1	H318 - Causes serious eye damage.
	AcuteTox.4	H302 - Harmful if swallowed.

2.2. Label elements

according directive 1999/45/EG

Pictogram:



Xn



N

- R22 - Harmful if swallowed.
 R41 - Risk of serious damage to eyes.
 R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S23 - Do not breathe spray.
 S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S35 - This material and its container must be disposed of in a safe way.
 S39 - Wear eye/face protection.
 S57 - Use appropriate container to avoid environmental contamination.

REGULATION (EC) No 1272/2008

Pictogram:



GHS07



GHS05



GHS09

Signal word: Danger

- H302 - Harmful if swallowed.
 H318 - Causes serious eye damage.
 H411 - Toxic to aquatic life with long lasting effects.
- P270 - Do not eat, drink or smoke when using this product.
 P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
 P501 - Dispose of contents/ container to an approved waste disposal plant.
 P280 - Wear eye protection/ face protection.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P273 - Avoid release to the environment.

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).



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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Soluble liquid
240 g/L 2,4-DB +40 g/L MCPA

3.2. Mixtures

Components:

2,4-DB

CAS-No.: 94-82-6
EINECS-No. / ELINCS No.: 202-366-9
REACH No.:
Concentration: 21.05 % (w/w)

Classification:

EG_1272/08 : AcuteTox.4 H302 - Harmful if swallowed.
AquaticChronic2 H411 - Toxic to aquatic life with long lasting effects.
EEC/67/548 : Xn R22 - Harmful if swallowed.
N R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

MCPA

CAS-No.: 94-74-6
EINECS-No. / ELINCS No.: 202-360-6
REACH No.:
Concentration: 3.51 % (w/w)

Classification:

EG_1272/08 : AcuteTox.4 H302 - Harmful if swallowed.
SkinIrrit.2 H315 - Causes skin irritation.
EyeDam.1 H318 - Causes serious eye damage.
AquaticAcute1 H400 - Very toxic to aquatic life.
AquaticChronic1 H410 - Very toxic to aquatic life with long lasting effects.
EEC/67/548 : Xn R22 - Harmful if swallowed.
Xi R38 - Irritating to skin.
Xi R41 - Risk of serious damage to eyes.
N R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

sodium hydroxide

CAS-No.: 1310-73-2
EINECS-No. / ELINCS No.: 215-185-5
REACH No.: 01-2119457892-27
Concentration: 2.5% - 6% (w/w)

Classification:

EG_1272/08 : SkinCorr.1A H314 - Causes severe skin burns and eye damage.
EEC/67/548 : C R35 - Causes severe burns.

potassium hydroxide

CAS-No.: 1310-58-3
EINECS-No. / ELINCS No.: 215-181-3
REACH No.: 01-2119487136-33
Concentration: 4% - 8.5% (w/w)



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Classification:

EG_1272/08 :

AcuteTox.4

H302 - Harmful if swallowed.

SkinCorr.1A

H314 - Causes severe skin burns and eye damage.

EEC/67/548 :

Xn

R22 - Harmful if swallowed.

C

R35 - Causes severe burns.

4. FIRST AID MEASURES

4.1. Description of first aid measures

- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
- Skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.
- Inhalation : Move the victim to fresh air. If symptoms persist, call a physician.
- Ingestion : Do NOT induce vomiting. Rinse mouth. If symptoms persist, call a physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms : No information available.

4.3. Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide (CO₂), Dry powder, Dry sand, Foam, Water spray
- Extinguishing media which shall not be used for safety reasons : High volume water jet

5.2. Special hazards arising from the substance or mixture

- Specific hazards during fire : In the event of fire (HCl, Cl₂, CO) may be formed.



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fighting

5.3. Advice for firefighters

- Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary. Use personal protective equipment.
- Further Information : Standard procedure for chemical fires. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. (see Chapter 8)

6.2. Environmental precautions

Do not contaminate water. Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.
- Additional advice : Never return spills in original containers for re-use.

6.4. Reference to other sections

see Chapter 13

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

- Safe handling advice : Do not breathe vapours or spray mist. Keep out of reach of children. Protect from frost. Wear personal protective equipment.
- Advice on protection against fire and explosion : Keep product and empty container away from heat and sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Protect from frost. Keep away



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from heat and sources of ignition.

Advice on common storage : Keep away from food, drink and animal feeding stuffs. Keep out of reach of children.

7.3. Specific end uses

none

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Components with workplace control parameters
(EH40/2005 Workplace exposure limits)

Components	CAS-No.	National occupational exposure limits	Note
2,4-DB	94-82-6		no classification available
MCPA	94-74-6		no classification available
sodium hydroxide	1310-73-2	2 mg/m ³	Short-term exposure limit
potassium hydroxide	1310-58-3	2 mg/m ³	Short-term exposure limit

8.2. Exposure controls

Personal protective equipment

Respiratory protection : Do not inhale dust and fumes. In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection : PVC or nitrile-rubber gloves

Eye protection : Goggles, , or:, Safety glasses

Skin and body protection : lightweight protective clothing

Hygiene measures : Avoid contact with skin and eyes and inhalation of vapours. Do not breathe dust or spray mist. General industrial hygiene practice. Keep away from food and drink. Keep away from food, drink and animal feeding stuffs. Keep working clothes separately. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Take off contaminated clothing and shoes immediately. Wash hands and face before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

Protective measures : Avoid contact with skin and eyes and inhalation of vapours. When using, do not eat, drink or smoke.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

Form : Soluble liquid
Colour : dark brown
Odour : phenol-like

Flash point : >100 °C

Density : 1.14 g/cm³

pH : 10

Viscosity, dynamic : 6.8 mPa.s

9.2. Other information

none

10. STABILITY AND REACTIVITY

10.1. Reactivity

no data available

10.2. Chemical stability

No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials to avoid



Strong acids and strong bases

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute oral toxicity : LD50 rat
Dose: 1,470 mg/kg
Test substance: (2,4-DB)

LD50 rat
Dose: 962 mg/kg
Test substance: (MCPA)

Acute dermal toxicity : LD50 rat
Dose: > 2,000 mg/kg
Test substance: (2,4-DB)

LD50 rat
Dose: > 4,000 mg/kg
Test substance: (MCPA)

Acute inhalation toxicity : LC50 rat
Exposure time: 4 h
Dose: > 2.3 mg/l
Test substance: (2,4-DB)

LC50 rat
Exposure time: 4 h
Dose: > 6.36 mg/l
Test substance: (MCPA)

Skin irritation : Result: No skin irritation
Test substance: (2,4-DB)

Result: No skin irritation
Test substance: (MCPA)

Eye irritation : Result: No eye irritation
Test substance: (2,4-DB)

Result: Severe eye irritation



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Test substance: (MCPA)

Sensitisation : Result: Causes sensitization.
Test substance: (2,4-DB)

Result: Did not cause sensitization.
Test substance: (MCPA)

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to birds : Colinus virginianus (Bobwhite Quail)
Dose: 1,545 mg/kg
Test substance: (2,4-DB)

: LD50 Colinus virginianus (Bobwhite Quail)
Dose: 270 mg/kg
Test substance: (MCPA)

Toxicity to bees : LD50 (contact) Apis mellifera (Honey bee)
Test substance: (2,4-DB)
Value ($\mu\text{g}/\text{Species}$): > 100

: LD50 (oral) Apis mellifera (Honey bee)
Test substance: (2,4-DB)
Value ($\mu\text{g}/\text{Species}$): > 100

: LD50 (contact) Apis mellifera (Honey bee)
Test substance: (MCPA)
Value ($\mu\text{g}/\text{Species}$): > 200

: LD50 (oral) Apis mellifera (Honey bee)
Test substance: (MCPA)
Value ($\mu\text{g}/\text{Species}$): > 200

Toxicity to earthworms : LC50 Eisenia fetida (earthworms)
Dose: > 1,000 mg/kg
Test substance: (2,4-DB)



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- Toxicity to fish : LC50 Eisenia fetida (earthworms)
Dose: 325 mg/kg
Testing period: 14 d
Test substance: (MCPA)
- Toxicity to fish : LC50 Oncorhynchus mykiss (Rainbow trout)
Dose: 3.5 mg/l
Testing period: 96 h
Test substance: 2,4-DB DMA
- Toxicity to fish : LC50 Oncorhynchus mykiss (Rainbow trout)
Dose: 50 mg/l
Testing period: 96 h
Test substance: (MCPA DMA)
- Toxicity to daphnia : EC50 Daphnia magna (Water flea)
Dose: 25 mg/l
Testing period: 48 h
Test substance: 2,4-DB DMA
- Toxicity to daphnia : EC50 Daphnia magna (Water flea)
Dose: > 230 mg/l
Testing period: 48 h
Test substance: (MCPA DMA)
- Toxicity to algae : ErC50 Scenedesmus subspicatus
Dose: 23.2 mg/l
Exposure time: 72 h
Test substance: 2,4-DB DMA
- Toxicity to algae : EC50 Navicula pelliculosa
Dose: 32.9 mg/l
Exposure time: 120 h
Test substance: (MCPA DMA)

12.2. Persistence and degradability

- Biodegradability : Readily biodegradable.
- Stability in soil : DT50: 1 - 2 d
(2,4-DB)
- DT50: 7 - 41 d
(MCPA)

12.3. Potential bioaccumulation



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Bioaccumulation : Does not bioaccumulate.

12.4. Mobility in soil

Koc = 112.5 - 455.8 (2,4-DB)
Koc = 10 - 157 (MCPA)

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6. Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

According to European Directive 2000/532/EC as amended :
Waste Code : 02 01 08 (agrochemical waste containing dangerous substances)

13.1. Waste treatment methods

Product : Dispose of product and packaging in accordance with The Green Code. (The Code of Practice for the safe use of Pesticides on Farms and Holdings.) A MAFF Publication.

Contaminated packaging : Dispose of as unused product. Do not re-use empty containers.

14. TRANSPORT INFORMATION

14.1. UN number

14.2. Proper shipping name

not applicable

14.3. Transport hazard class(es)



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ADR/RID :

Not a dangerous substance as defined in the above regulations.

IMDG :

Not a dangerous substance as defined in the above regulations.

IATA-DGR :

Not a dangerous substance as defined in the above regulations.

14.4. Packaging group

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

none

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations : The product is classified and labelled in accordance with EC directives or respective national laws.

15.2. Chemical Safety Assessment

none

16. OTHER INFORMATION

Print Date : 2012/10/04

The date format YYYY/MM/DD is used according to ISO 8601.
(Alterations are indicated in the left hand margin by: ||)



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