



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Kyleo

Version 1 (UK)

Issuing date: 2014/05/30

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

1.1. Product identifier

Trade name : **Kyleo**

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 :	Xi N	R43 - May cause sensitization by skin contact. R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
EG_1272/08 :	Eyelrrit.2 SkinSens.1 AquaticAcute1 AquaticChronic1	H319 - Causes serious eye irritation. H317 - May cause an allergic skin reaction. H400 - Very toxic to aquatic life. H410 - Very toxic to aquatic life with long lasting effects.

2.2. Label elements

according directive 1999/45/EG

Pictogram:



Xi



N

- R43 - May cause sensitization by skin contact.
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S 2 - Keep out of the reach of children.
S13 - Keep away from food, drink and animal feedingstuffs.
S24/25 - Avoid contact with skin and eyes.
S57 - Use appropriate container to avoid environmental contamination.
S61 - Avoid release to the environment. Refer to special instructions/ Safety data sheets.

REGULATION (EC) No 1272/2008

Pictogram:



GHS07



GHS09

Signal word: Warning

- H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H410 - Very toxic to aquatic life with long lasting effects.
EUH401 - To avoid risks to human health and the environment, comply with the instructions for use.
- P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P270 - Do not eat, drink or smoke when using this product.
P391 - Collect spillage.
P261 - Avoid breathing vapours or spray.
P501 - Dispose of contents/ container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non hazardous waste.

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 : Aqueous solution of isopropylammonium and Dimethylammonium derivative salts
2,4-D 160 g/l, Glyphosate 240 g/l

3.2. Mixtures

Components:

2,4-D DMA derivate

CAS-No.: 1263319-17-0
EINECS-No. / ELINCS No.: 934-143-3
REACH No.:
Concentration: 32.0 % (w/w)

Classification:

EG_1272/08 :	AcuteTox.4	H302 - Harmful if swallowed.
	EyeDam.1	H318 - Causes serious eye damage.
	SkinSens.1	H317 - May cause an allergic skin reaction.
	AquaticChronic2	H411 - Toxic to aquatic life with long lasting effects.
EEC/67/548 :	Xn	R22 - Harmful if swallowed.
	Xi	R41 - Risk of serious damage to eyes.
		R43 - May cause sensitization by skin contact.
	N	R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Glyphosate IPA salt

CAS-No.: 38641-94-0
EINECS-No. / ELINCS No.: 254-056-8
REACH No.:
Concentration: 27.9 % (w/w)

Classification:

EG_1272/08 :	AquaticChronic2	H411 - Toxic to aquatic life with long lasting effects.
EEC/67/548 :	N	R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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. Obtain medical attention.

Skin contact : Wash off immediately with soap and plenty of water.

Inhalation : Move to fresh air.

Ingestion : Rinse mouth. Do NOT induce vomiting. If swallowed, seek



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medical advice immediately and show this container or label.

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. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media : Water spray, Dry powder, Sand, Foam, Carbon dioxide (CO₂)

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 firefighting : In the event of fire (HCl, Cl₂, NO_x, CO) may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

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

Use personal protective equipment. (see Chapter 8)

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.



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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). Use mechanical handling equipment.

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 : Wear personal protective equipment. Keep out of the reach of children.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store at room temperature in the original container.

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

Storage stability

Storage temperature : > 0 °C

7.3. Specific end use(s)

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-D DMA derivate	1263319-17-0		no classification available, not listed in EH40/2005
Glyphosate IPA salt	38641-94-0		no classification available, not listed in EH40/2005



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8.2. Exposure controls

Personal protective equipment

- Respiratory protection : No special protective equipment required.
- Hand protection : Gloves
- Eye protection : Safety glasses
- Skin and body protection : protective suit
- Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.
- Protective measures : Avoid contact with skin, eyes and clothing. Keep working clothes separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

- Physical state : liquid
- Form : Soluble concentrate
- Colour : yellow
- Odour : odourless
- Melting point/range : no data available
- Boiling point/boiling range : ca.100 °C
Aqueous solution
- Flash point : (closed cup)
Method: 92/69/EEC A9
does not flash
- Ignition temperature : no data available
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : <1.9E-05 Pa



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		at 25 °C (2,4-D)
		1.3E-05 Pa at 25 °C Method: 92/69/EEC A4 (Glyphosate)
Density	:	1.15 - 1.17 g/cm ³
pH	:	5 - 5.8 at (20 °C)
		4.4 - 4.8 at 10 g/l (20 °C)
Partition coefficient: n- octanol/water	:	no data available
Dissociation constant	:	pKa= 2.64 (2,4-D)
		pKa1= 2.34 (Glyphosate)
		pKa2= 5.73 (Glyphosate)
		pKa3= 10.2 (Glyphosate)
Viscosity, dynamic	:	277 mPa.s at 20 °C Method: OECD 114
		97 mPa.s at 40 °C Method: OECD 114
Surface tension	:	23.6 mN/m at 20 °C

9.2. Other information



none

10. STABILITY AND REACTIVITY

10.1. Reactivity

no data available

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

No decomposition if stored and applied as directed.

10.5. Incompatible materials to avoid

Strong bases

10.6. Hazardous decomposition products

no data available

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute oral toxicity : LD50 rat female
Dose: > 2,000 mg/kg

Acute dermal toxicity : LD50 rat
Dose: > 2,000 mg/kg

Acute inhalation toxicity : Remarks: not applicable

Skin irritation : rabbit
Result: No skin irritation

Eye irritation : rabbit
Result: Moderate eye irritation



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Sensitisation : Guinea-pig
Result: Causes sensitization.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to birds : LD50 *Colinus virginianus* (Bobwhite Quail)
Dose: > 500 mg/kg
Test substance: (2,4-D)

: LD50 *Colinus virginianus* (Bobwhite Quail)
Dose: > 2,000 mg/kg

Toxicity to bees : LD50 (oral) *Apis mellifera* (Honey bee)
Dose ($\mu\text{g}/\text{Species}$): 106.6

: LD50 (contact) Bee
Dose ($\mu\text{g}/\text{Species}$): 100

Toxicity to fish : LC50 *Oncorhynchus mykiss* (Rainbow trout)
Dose: 3.2 mg/l
Testing period: 96 h

Toxicity to daphnia : EC50 *Daphnia magna* (Water flea)
Dose: 2.5 mg/l
Testing period: 48 h

Toxicity to algae : static test ErC50 *Scenedesmus subspicatus*
Dose: 1.28 mg/l
Exposure time: 72 h

Lemna gibba (Duckweed)
Dose: 1.1 mg/l
Exposure time: 168 h

EbC50 *Scenedesmus subspicatus*
Dose: 0.43 mg/l
Exposure time: 72 h



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NOEC Scenedesmus subspicatus

Dose: 0.1 mg/l

ErC50 Lemna minor (duckweed)

Dose: 2.7 mg/l

Exposure time: 7 d

EC50 Lemna minor (duckweed)

Dose: 1.1 mg/l

Exposure time: 7 d

NOEC Lemna minor (duckweed)

Dose: 0.1 mg/l

Exposure time: 7 d

12.2. Persistence and degradability

Biodegradability : Result: Not readily biodegradable.
Test substance: (Glyphosate)

12.3. Potential bioaccumulation

Bioaccumulation : no data available

12.4. Mobility in soil

Koc = 884 - 60'000 (Glyphosate)

Koc= 5 - 212 (2,4-D)

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

none

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

14. TRANSPORT INFORMATION

14.1. UN number

UN3082

14.2. Proper shipping name

UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.*(2,4-D, Glyphosate)

14.3. Transport hazard class(es)

- ADR/RID :
Class : 9
- IMDG :
Class : 9
- IATA-DGR :
Class : 9

14.4. Packaging group

- ADR/RID : III
- IMDG : III
- IATA-DGR : III

14.5. Environmental hazards

- IMDG**
Marine Pollutant : MP



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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 : 2014/05/30

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

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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