

BROADLEAF WEEDS CONTROLLED:

BOTANICAL NAME	COMMON NAME	VERNACULAR NAME (SHONA/NDEBELE)
<i>Acanthospermum hispidum</i>	Upright starbur	Chidhongi/Ubhima
<i>Amaranthus hybridus</i>	Pigweed	Bonongwe/Imbuya
<i>Bidens pilosa</i>	Blackjack	Tsine, Muuwu/Ucucuza
<i>Chenopodium album</i>	Fathen	Kasunika
<i>Cleome monophylla</i>	Spindlepod	Mujakari/Ulude, Umbhida
<i>Commelina benghalensis</i>	Wandering Jew	Goche, Gezi/Idabane
<i>Datura stramonium</i>	Stinkblaar	Chowa/Umhlafultho
<i>Galinsoga parviflora</i>	Gallant soldier	Chaarendo
<i>Ipomoea plebia</i>	Sabi morning glory	Katewe/Umundandanyana
<i>Leucas martincensis</i>	Bobbin weed	Nyamatumwa/Imbuya yamadongi
<i>Nicandra physaloides</i>	Apple of Peru	Gumachembere
<i>Physalis angulata</i>	Wild gooseberry	Muguzubheri/Maguzubeli
<i>Portulaca oleracea</i>	Purslane	Chifandichimuka
<i>Richardia scabra</i>	Mexican clover	Chinzungu/Isizambani
<i>Schkuhria pinnata</i>	Dwarf marigold	Rukarwa
<i>Sida alba</i>	Spiny sida	Chimutsvairo/Inama
<i>Tagetes minuta</i>	Mexican marigold	Kambanje, Mbanda/Imbanje-yonxiwa
<i>Xanthium strumarium</i>	Giant/large Cockle bur	Chinamata

GRASS WEEDS CONTROLLED:

BOTANICAL NAME	COMMON NAME	VERNACULAR NAME (SHONA/NDEBELE)
<i>Dactyloctenium aegypticum</i>	Crow's foot	Bwerere/Imhunga
<i>Digitaria sanguinalis</i>	Crab finger-grass	
<i>Eleusine indica</i>	Rapoko grass	Sawi, Mombe/Umnyankomo
<i>Melinis repens</i>	Natal red top	Bhurakwacha
<i>Urochloa panicoides</i>	Garden urochloa	Mhande/Dlanyati

NOTE:

- Auxo EC** controls the above-mentioned weed species. Other weed species that were not present during the development trials with the product, may also be controlled to a certain degree. The registration holder does not accept any responsibility for efficacy on unlisted weeds.
- DO NOT** apply **Auxo EC** when maize or weeds are under stress (cold, drought, etc.)

WARRANTY: Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal climatic and storage conditions; quality of dilution water; compatibility with other substances not indicated on the label and the occurrence of resistance of the pathogen against the remedy concerned as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

Packed For: Bayer Zimbabwe (Pvt) Ltd
P.O. Box AY 78, Amby, Harare, Zimbabwe.
Tel. 487211/487242
IN CASE OF POISONING PLEASE PHONE: +27 (0) 861 555 777
Manufactured by Bayer AG, Germany
Auxo® is a registered trademark of the Bayer Group.

Batch No.: See on pack
Date of Manufacture: See on pack

ZW/0118/Auxo EC 1L/Label and Booklet
Code:84997641B

BAYER

AUXO[®] EC

Reg. No. 15-C-158-2-C-65-21 CONTENTS: 1 L

DANGER

POISON

COMPOSITION:

	MASS/VOLUME
Tembotrione	50 g/l
Bromoxynil Octanoate.....	262 g/l
Isoxadifen-ethyl safener.....	25 g/l
Inert ingredients	663 g/l

Chemical Group : Tembotrione – Triketone
Bromoxynil Octanoate - Benzonitrile

AUXO[®] EC IS AN EMULSIFIABLE CONCENTRATE POST EMERGENCE HERBICIDE FOR THE CONTROL OF BROADLEAF AND GRASS WEEDS IN MAIZE.

HARMFUL

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TO CAUSE A HAZARD IN THE USE, STORAGE OR DISPOSAL OF THIS SUBSTANCE IS AN OFFENCE

PRECAUTIONS:

1. Handle with care and avoid any skin contact. Poisonous by swallowing or inhalation.
2. **DO NOT** eat, drink or smoke while mixing, applying, handling or before washing hands and face.
3. Slightly irritating to skin and eyes.
4. **WEAR PROTECTIVE CLOTHING**, i.e. overalls, rubber gloves, and rubber boots and a facemask while mixing, spraying and cleaning up.
5. **DO NOT** inhale fumes or spray mist.
6. Avoid spray drift onto other crops, grazing, rivers and dams.
7. Remove protective clothing on completion of spraying, wash skin thoroughly with soap and water and dress in clean clothing and wash contaminated clothing daily.
8. Clean applicator after use, dispose of wash water where it will not contaminate crops, grazing, rivers and dams.
9. **KEEP APART FROM FOOD AND FEEDSTUFFS.**
10. **KEEP OUT OF REACH OF CHILDREN, UNINFORMED PERSONS AND ANIMALS.**
11. **STORE IN A COOL, DRY PLACE IN ORIGINAL CONTAINER AND KEEP UNDER LOCK AND KEY.**
12. **TOXIC TO FISH AND WILD LIFE. DO NOT CONTAMINATE DRINKING POOLS, DAMS, RIVERS AND WATERWAYS.**
13. Due to the time between last treatment and harvest, it is not necessary to set a pre-harvest interval for use of treated plants either for harvest of grain or for harvest of plants for silage..
14. **SPILLAGE** - Use protective clothing when dealing with spillages. Prevent entry into drains, water or soil. Soak up spilled product with absorbent material such as dry soil, sawdust or sand and place into a labeled closable container for safe disposal. Use damp cloth to clean the floor and contaminated parts. Place used cleaning materials into closable container for safe disposal.
15. **CONTAINER DISPOSAL** - Triple-rinse container emptying washings into spray tank and spray onto crop. Perforate and flatten rinsed container to make it **unsuitable for further use** or burn it and bury crushed container or ashes in a recommended disposal pit in a secure location away from water sources or arable land. **DO NOT** use empty container for any other purpose.
16. **RE-ENTRY:** As a general rule, treated areas should not be entered before spray deposit on plants surfaces has dried, unless if protective clothing is worn.

SYMPTOMS OF POISONING:

Local: Sensitisation, The product causes irritation of eyes, skin and mucous membranes.

Systemic: Tiredness, Thirst, Sweating, Anxiety, Hyperventilation, Tachycardia, Muscle rigidity, Hyperthermia

FIRST AID:

General advice: Remove contaminated clothing immediately and dispose of safely.

Inhalation: Move the victim to fresh air and keep at rest. Call a physician or poison control center immediately.

Skin contact: Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. Call a physician or poison control center immediately.

Eye contact: Wash off immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Ingestion: Rinse mouth. Keep patient warm and at rest. **DO NOT** induce vomiting. Risk of product entering the lungs on vomiting after ingestion. Call a physician or poison control center immediately.

NOTE TO PHYSICIAN:

Treatment:

Local treatment: Initial treatment: symptomatic.

Systemic treatment: Initial treatment: symptomatic. In case of ingestion, gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the administration of activated charcoal and sodium sulphate is always advisable. In case of hyperthermia, physical cooling is advisable. In case of muscle rigidity, muscle relaxants and mechanical ventilation may support in counteracting hyperthermia.

Antidote: There is no specific antidote.

RESISTANCE WARNING:

To delay herbicide resistance:

- Avoid exclusive, repeated use of herbicides from the same herbicide Group Code.
- Alternate with products from different herbicide Group Codes.
- Integrate other control methods [chemical, cultural, etc.] in weed control programmes.

TIMING OF APPLICATION:

AUXO EC formulation is applied post-emergence of the crop and weeds by broadcast spraying over the target area, from 2 leaves until 8-leaf stage of maize. Apply when the weeds are between the 4 and 6 leaf growth stage.

MIXING:

USE THE SPRAY MIXTURE WITHIN 6 HOURS AFTER MIXING

1. Half-fill the spray tank with clean water.
2. Shake the product container and add the required amount of **AUXO EC** to the water in the spray tank, with agitation system in operation, then top up with clean water to the required volume.
3. Continue agitation during mixing, spraying and stoppages until the tank is empty
4. Ensure even coverage of the weed foliage by using nozzle types that are suitable for optimum post emergence application, such as double outlet flat fan (Twinjet) nozzles.
5. Apply by means of a tractor mounted boom sprayer or knapsack with continual agitation and which is correctly calibrated to deliver at least 200 - 300 litres spray mixture/ha.
6. Spray as soon as possible after mixing for optimum results.

NOTES:

1. Application of **AUXO EC** is intended to control the weeds present at the most critical time of the season, thus giving the crop a sufficient competitive advantage over the weeds for the remainder of the growing season.
2. In the case of crop failure, maize can be re-sown one week after the application of the product.
3. **AUXO EC** will not control weeds emerging after application

DIRECTIONS FOR USE: USE ONLY AS DIRECTED.

CROP	TARGET WEEDS	APPLICATION RATE/HA	TIMING OF APPLICATION
MAIZE	Broadleaf and grass weeds.	Tractor mounted tail-boom: 1500 ml in 200 litres water/ha Knapsack lance: One Knapsack sprayer capacity 16 litres requires 120 ml of Auxo EC and apply in 200 litres water/ha	Post emergence of the crop and weeds. Growth stage: When the crop is 30–45cm (± 30 days after planting), apply from the two-leaf until the eight-leaf stage of the maize crop which corresponds approximately to grass weed stages of 2 leaves up to early tillering and broadleaf weeds of 4-leaf to 6-leaf stages. NB. Ensure total coverage of the weed foliage.



AUXO[®]

EC

Reg. No. 15-C-158-2-C-65-21

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Revision Date: 26.11.2015
Print Date: 06.07.2016

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name AUXO EC337
Product code (UVP) 05856557

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

Supplier Bayer (Pty) Ltd.
27 Wrench Road, P.O. Box 143
1600 Isando
South Africa

Telephone +27 (011) 921 5911

Telefax +27 (011) 921 5766

Responsible Department QHSE - Nigel, South Africa
+27 (011) 365 8675 (during business hours only)

1.4 Emergency telephone no.

Emergency telephone no. +27 (0861) 555 777 (Western Cape Poisons Helpline)

Global Incident Response Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer CropScience)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Acute toxicity: Category 4
H302 Harmful if swallowed.

Aspiration hazard: Category 1
H304 May be fatal if swallowed and enters airways.

Eye irritation: Category 2
H319 Causes serious eye irritation.

Skin sensitisation: Category 1
H317 May cause an allergic skin reaction.

Reproductive toxicity: Category 2
H361d Suspected of damaging the unborn child.

Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1



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H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Bromoxynil
- Tembotrione
- Isoxadifen-ethyl
- Solvent Naphtha (petroleum), heavy aromatic

**Signal word:** Danger

Hazard statements

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H410	Very toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P310	Immediately call a POISON CENTER/doctor/physician.
P308 + P311	IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P501	Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Emulsifiable concentrate (EC)
Bromoxynil/Tembotrione/Isoxadifen-ethyl 180:50:25 g/l

Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

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Name	CAS-No. / EC-No. / REACH Reg. No.	Classification	Conc. [%]
		Regulation (EC) No 1272/2008	
Bromoxynil octanoate	1689-99-2 216-885-3	Repr. 2, H361d Acute Tox. 3, H331 Acute Tox. 4, H302 Skin Sens. 1, H317 Aquatic Chronic 1, H410 Aquatic Acute 1, H400	23,60
Tembotrione	335104-84-2	Skin Sens. 1, H317 STOT RE 2, H373 Repr. 2, H361d Aquatic Acute 1, H400 Aquatic Chronic 1, H410	4,50
Isoxadifen-ethyl	163520-33-0 443-870-0	Acute Tox. 4, H302 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	2,30
Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts	70528-83-5 274-654-2	Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	> 0,10 – < 2,50
1-Octanol	111-87-5 203-917-6	Eye Irrit. 2, H319 Skin Irrit. 2, H315	> 1,00 – < 20,00
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5 265-198-5 01-2119451097-39-xxxx	Asp. Tox. 1, H304 Aquatic Chronic 2, H411	> 2,50 – < 25,00
Acetophenone	98-86-2 202-708-7	Eye Irrit. 2, H319 Acute Tox. 4, H302	> 25,00

Further information

Bromoxynil octanoate	1689-99-2	M-Factor: 10 (acute), 10 (chronic)
Tembotrione	335104-84-2	M-Factor: 100 (acute), 10 (chronic)
Isoxadifen-ethyl	163520-33-0	M-Factor: 1 (acute)

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures**

General advice	Remove contaminated clothing immediately and dispose of safely.
Inhalation	Move the victim to fresh air and keep at rest. Call a physician or poison control center immediately.
Skin contact	Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. Call a physician or poison control center immediately.



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Eye contact	Wash off immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Rinse mouth. Keep patient warm and at rest. Do NOT induce vomiting. Risk of product entering the lungs on vomiting after ingestion. Call a physician or poison control center immediately.
4.2 Most important symptoms and effects, both acute and delayed	
Symptoms	Local: Sensitisation, The product causes irritation of eyes, skin and mucous membranes. Systemic: Tiredness, Thirst, Sweating, Anxiety, Hyperventilation, Tachycardia, Muscle rigidity, Hyperthermia
4.3 Indication of any immediate medical attention and special treatment needed	
Treatment	Local treatment: Initial treatment: symptomatic. Systemic treatment: Initial treatment: symptomatic. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. In case of hyperthermia physical cooling is advisable; in case of muscle rigidity muscle relaxants and mechanical ventilation may support in counteracting hyperthermia. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

5.3 Advice for firefighters

Special protective equipment for fire-fighters In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.



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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Keep people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water.

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). Keep in suitable, closed containers for disposal. Clean floors and contaminated objects with plenty of water.

Additional advice Check also for any local site procedures.

6.4 Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.

Advice on protection against fire and explosion Keep away from heat and sources of ignition. Vapours may form explosive mixture with air. Take measures to prevent the build up of electrostatic charge. Use only explosion-proof equipment.

Hygiene measures When using, do not eat, drink or smoke. Remove soiled clothing immediately and clean thoroughly before using again. Contaminated work clothing should not be allowed out of the workplace. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Wash hands immediately after work, if necessary take a shower.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from freezing. Keep away from direct sunlight.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

Suitable materials HDPE (high density polyethylene)

7.3 Specific end uses Refer to the label and/or leaflet.

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Components	CAS-No.	Control parameters	Update	Basis
Bromoxynil octanoate	1689-99-2	0,21 mg/m ³ (TWA)		OES BCS*
Tembotrione	335104-84-2	0,15 mg/m ³ (TWA)		OES BCS*
Isoxadifen-ethyl	163520-33-0	1 mg/m ³ (TWA)		OES BCS*
Acetophenone	98-86-2	10 ppm (TWA)		OES BCS*

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

8.2 Exposure controls**Personal protective equipment**

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection

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.

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0,4 mm
Protective index	Class 6
Directive	Protective gloves complying with EN 374.

Eye protection

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection

Wear standard coveralls and Category 3 Type 4 suit.
If there is a risk of significant exposure, consider a higher protective type suit.
Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

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If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Form	Liquid, clear
Colour	light brown
Odour	aromatic
pH	3,5 - 4,5 at 10 % (23 °C) (deionized water)
Flash point	ca.87 °C
Ignition temperature	425 °C
Upper explosion limit	7,00 %(V) The data refer to solvent naphtha petroleum.
Lower explosion limit	0,8 %(V) The data refer to solvent naphtha petroleum.
Relative vapour density	1,00 The data refer to solvent naphtha petroleum.
Density	ca. 1,11 g/cm ³ at 20 °C
Water solubility	miscible
Partition coefficient: n-octanol/water	Bromoxynil octanoate: log Pow: 5,4 Tembotrione: log Pow: -1,09 Isoxadifen-ethyl: log Pow: 3,8
Viscosity, kinematic	7,68 mm ² /s at 40 °C
Surface tension	ca. 34,3 mN/m at 20 °C
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Thermal decomposition Stable under normal conditions.

10.2 Chemical stability Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

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- 10.4 Conditions to avoid** Extremes of temperature and direct sunlight.
- 10.5 Incompatible materials** Store only in the original container.
- 10.6 Hazardous decomposition products** No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

Acute oral toxicity	LD50 (rat) 500 mg/kg
Acute inhalation toxicity	LC50 (rat) > 4,90 mg/l Exposure time: 4 h
Acute dermal toxicity	LD50 (rat) > 2.000 mg/kg
Skin irritation	No skin irritation (rabbit)
Eye irritation	Irritating to eyes. (rabbit)
Sensitisation	Sensitising (mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment repeated dose toxicity

Bromoxynil octanoate caused specific target organ toxicity in experimental animal studies in the following organ(s): liver. The observed effects do not appear to be relevant for humans.
Tembotrione caused specific target organ toxicity in experimental animal studies in the following organ(s): Eyes, kidneys, liver.
Isoxadifen-ethyl did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Bromoxynil octanoate was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.
Tembotrione was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.
Isoxadifen-ethyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Bromoxynil octanoate caused at high dose levels an increased incidence of tumours in the following organ(s): liver. The mechanism of tumour formation is not considered to be relevant to man.
Tembotrione caused an increased incidence of tumours in rats in the following organ(s): cornea. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.
Isoxadifen-ethyl was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Bromoxynil octanoate did not cause reproductive toxicity in a two-generation study in rats.
Tembotrione did not cause reproductive toxicity in a two-generation study in rats.
Isoxadifen-ethyl did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Bromoxynil octanoate caused a delayed foetal growth, an increased incidence of non-specific malformations. Bromoxynil octanoate caused developmental toxicity only at dose levels toxic to the

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dams.

Tembotrione caused developmental toxicity only at dose levels toxic to the dams. Tembotrione caused a delayed ossification of fetuses, an increased incidence of variations. The developmental effects seen with Tembotrione are related to maternal toxicity.

Isoxadifen-ethyl did not cause developmental toxicity in rats and rabbits.

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)) 0,71 mg/l
Exposure time: 96 h

Toxicity to aquatic invertebrates EC50 (Daphnia magna (Water flea)) 0,146 mg/l
Exposure time: 48 h

Toxicity to aquatic plants EC50 (Raphidocelis subcapitata (freshwater green alga)) 0,643 mg/l
Growth rate; Exposure time: 72 h
EC50 (Lemna gibba (gibbous duckweed)) 0,1 mg/l
Growth rate; Exposure time: 168 h

12.2 Persistence and degradability

Biodegradability Bromoxynil octanoate:
not rapidly biodegradable
Tembotrione:
not rapidly biodegradable
Isoxadifen-ethyl:
not rapidly biodegradable

Koc Bromoxynil octanoate: Koc: 639
Tembotrione: Koc: 66
Isoxadifen-ethyl: Koc: 2512

12.3 Bioaccumulative potential

Bioaccumulation Bromoxynil octanoate: Bioconcentration factor (BCF) 230
Does not bioaccumulate.
Tembotrione:
Does not bioaccumulate.
Isoxadifen-ethyl:
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil Bromoxynil octanoate: Slightly mobile in soils
Tembotrione: Mobile in soils
Isoxadifen-ethyl: Slightly mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment Bromoxynil octanoate: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Tembotrione: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

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Isoxadifen-ethyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Product In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.

Contaminated packaging Triple rinse containers.
Do not re-use empty containers.
Not completely emptied packagings should be disposed of as hazardous waste.

Waste key for the unused product **02 01 08*** agrochemical waste containing dangerous substances

SECTION 14: TRANSPORT INFORMATION**ADR/RID/ADN**

14.1 UN number **3082**
14.2 Proper shipping name **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL OCTANOATE SOLUTION)**

14.3 Transport hazard class(es) **9**
14.4 Packing group **III**
14.5 Environm. Hazardous Mark **YES**
Hazard no. **90**
Tunnel Code **E**

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number **3082**
14.2 Proper shipping name **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL OCTANOATE SOLUTION)**

14.3 Transport hazard class(es) **9**
14.4 Packing group **III**
14.5 Marine pollutant **YES**

IATA

14.1 UN number **3082**



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14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL OCTANOATE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

Further information

WHO-classification: II (Moderately hazardous)

15.2 Chemical Safety Assessment

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Text of the hazard statements mentioned in Section 3

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
EC-No.	European community number



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ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The information contained within this Safety Data Sheet is in accordance with the guidelines established by Regulation (EU) 1907/2006 and Regulation (EU) 2015/830 amending Regulation (EU) No 1907/2006 and any subsequent amendments. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.
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